

**ACCESS TO CREDIT AND THE EFFECT OF CREDIT CONSTRAINTS  
ON HOUSEHOLD WELFARE IN THE EASTERN CAPE PROVINCE,  
SOUTH AFRICA**

**BY**

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**ACADEMIC ADVISOR: PROFESSOR GCG FRASER**



**University of Fort Hare**  
*Together in Excellence*

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## **DECLARATION**

I, **Lloyd-James Segun Baiyegunhi**, do hereby declare that the work contained in this dissertation is a record of my own research. All other scholars' works referred to have been duly referenced and acknowledged. I also declare that this dissertation has not been presented in any previous application for an award of a higher degree.



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**Signature**

**01 July 2009**

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**Date**

## **DEDICATION**

*To God be the glory, great thing He hath done!*

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## ACRONYMS

|        |   |                                                       |
|--------|---|-------------------------------------------------------|
| ADB    | - | Asian Development Bank                                |
| ATMs   | - | Automated Teller Machines                             |
| BEE    | - | Black Economic Empowerment                            |
| CGAP   | - | Consultative Group to Assist the Poor                 |
| DBSA   | - | Development Bank of Southern Africa                   |
| DFS    | - | Development Finance System                            |
| DFID   | - | Department for International Development              |
| ECRFC  | - | Eastern Cape Rural Finance Corporation                |
| EEC    | - | European Economic Council                             |
| FAO    | - | Food and Agricultural Organization                    |
| FSC    | - | Financial Sector Charter                              |
| GEAR   | - | Growth, Employment and Redistribution                 |
| HSRC   | - | Human Sciences Research Council                       |
| IDC    | - | Industrial Development Corporation                    |
| IMF    | - | International Monetary Fund                           |
| MFIs   | - | Microfinance Institutions                             |
| MFRC   | - | Microfinance Regulatory Council                       |
| NGOs   | - | Non-Governmental Organizations                        |
| UN     | - | United Nations                                        |
| UNDP   | - | United Nations Development Funds                      |
| ROSCAS | - | Rotating Savings and Credit Associations              |
| SACCOL | - | Savings and Credit Cooperative League of South Africa |

|        |   |                                                |
|--------|---|------------------------------------------------|
| SALDRU | - | South African Labour Development Research Unit |
| SAMAF  | - | South African Microfinance Apex Fund           |
| SA-PPA | - | South African Participatory Poverty Assessment |
| SMMEs  | - | Small Medium and Micro Enterprises             |

## **ABSTRACT**

The protracted and persistent nature of poverty in many rural households of developing countries has been linked to the lack of finance needed to undertake profitable investments. The provision of credit therefore has been enthusiastically identified and championed as an important instrument for improving the welfare of the poor directly and for enhancing productive capacity through financing investment by the poor in their human and physical capital. Another crucial issue is the limited availability of funds for credit to those that really need it.

Strategies aimed at poverty alleviation need to identify factors that are strongly associated with poverty and are amenable to modification by policy. Cross sectional data from a household survey was used for this study. The study employs a household welfare function, approximated by household expenditure per adult equivalent to explain the incidence of poverty and its correlates. It also investigates the individual and household characteristics that influence credit market access in South Africa. The aim is to provide a better understanding of the households' characteristics, not only because they influence household's demand for credit but also because potential lenders are most likely to base their assessment of borrowers' creditworthiness on such characteristics. The effect of credit constraints on household welfare was also examined by identifying credit-constrained households based on direct elicitation of their credit-constrained status from survey questions about restrictions on credit, and an endogenous switching regression model was used to analyse the effect of credit constraints on household welfare.

The Foster, Greer, and Thorbecke (FGT) poverty index was used to analyse the extent and severity of poverty with the results indicating that nearly 44 percent of the sampled households live below poverty line of R220.56 per adult equivalent per month, with average poverty gap of



0.097. The Tobit regression estimates shed light on the determinants of poverty; the results show that rural poverty is strongly linked to household head's gender, age, education, occupation and land ownership. Dependency ratio, credit availability and assets ownership are also important determinants of rural poverty.

The results of the logistic regression suggest that credit market access was significantly influenced among other variables by gender, monthly income, assets value, savings, dependency ratio, repayment capacity and social capital, indicating that security and guarantee is the main criterion lenders use in granting credit. In other words, clients' credit risk profile plays a determining role in household credit accessibility.

The switching regression model in the first stage used the probit regression to estimate the determinants of households credit constrained conditions. The result shows that gender, age, land and asset ownership, strength of previous relationship and social capital are significant in determining whether a household is credit constrained. The effect of credit constraints on household welfare was estimated in the second stage. Credit constrained households are found to have lower welfare outcomes compared to the unconstrained households.

The results presented in this study therefore support the claims that credit policies still have an important role to play in rural development, and additional rural finance can enhance productivity and household welfare, thus contributing to pro-poor growth.

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# CHAPTER 1

## INTRODUCTION

---

### 1.1 Background

According to new estimates of poverty generated by the Human Sciences Research Council, the percentage of the populace in South Africa still living in poverty has not changed significantly since the advent of democratic governance in 1994 (HSRC, 2004). The gap between rich and poor rather than abating has continued to widen, thus, many households have sunk deeper into poverty.

In per capita terms, South Africa is an upper-middle-income country with the year 2006 estimate of Gross Domestic Product per capita around \$13 300 (CIA, 2008). In spite of this relative wealth, most South African households are living in outright poverty or at the very least are vulnerable to being poor. Furthermore, the income and wealth distribution in South Africa is among the most unequal in the world, the country's Gini coefficient by expenditure was 0,65 in 2000 (UNDP, 2005). This figure is higher than the Gini coefficient of 0,58 in the mid-1990s. Many South African households today still have little or no access to education, health care, clean water and energy. Accordingly, this situation will possibly affect not only the country's social and political stability, but also the economic development path it follows (May, 1998).

Poverty, according to its primary meaning, implies a lack or deprivation of certain minimal income necessary to attain a decent standard of living. There is a large body of evidence to

suggest that income poverty is increasing. According to Leibbrandt *et al.* (2005) and Hoogeveen and Özler (2006), the headcount index of poverty between 1995 and 2000 has increased from 32 to 34 percent nationally, or from 26 to 28 percent between 1996 and 2001. Using a different dataset on a \$2 per day poverty line, where the average poor household earned 11 percent below this line in 1995 and which by 2005 had increased to 13 percent (Hoogeveen and Özler 2006).

South African population, according to the mid-2006 estimates from Statistics South Africa, is about 47,9 million people and, of these, almost half continues to live below the minimum living standard (Adelzadeh, 2006). Poverty is endemic in the rural areas of South Africa, particularly in the former homelands. About 65 percent of the poor are found in the rural areas and 78 percent of those vulnerable to being chronically poor are those who live in rural areas (Leibbrandt and Woolard, 2006). The poverty rate<sup>1</sup> for rural areas in South Africa is 71 percent. Accordingly, the poverty gap<sup>2</sup> was also estimated to be R28 billion in 1995, and the rural areas accounted for 76 percent of this (May, 1998).

According to May (1998), poverty is persistent in rural areas because of the contraction in the South African economy, and the erosion of the rural economic base due to expansion in population. The dearth of infrastructure and outright dispossession of assets, especially land; have caused many households to now find themselves with neither the income, nor the assets from which to generate an adequate income. Another reason alluded to the persistence of poverty in the rural areas is what the report called ‘poverty traps’, which it defined as “a lack of

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<sup>1</sup> Defined as the proportion of people in a particular group or area falling below the poverty line, and which measures the prevalence of poverty

<sup>2</sup> Defined as the annual amount needed to uplift the poor to the poverty line by means of a perfectly-targeted transfer of money, and which measures the intensity of poverty

complementary assets and services resulting in ‘poverty of opportunity’, whereby individuals are unable to take full advantage of the few assets to which they have access” (May, 1998:7).

Von Pischke (1983) has recognized that the lack of finance needed to undertake productive investments by resource-poor people might cause them to remain trapped in poverty. The provision of credit to poor households has been widely perceived as an effective strategy for poverty alleviation (Robinson, 2001). It is believed that increased access to financial services, especially credit, relaxes the liquidity constraints that impoverished households face, as well as through the boosting of household’s risk bearing ability. It may equip them to shift from coping strategies, such as those involving self-insurance and mutual insurance, to cope with *ex-post* risks of negative-income shocks to protect their level of consumption and to activities that generate dynamic growth (Alderman and Paxson, 1992; Besley, 1995; Murdoch 1995; Rosenzweig, 2001). Based on this, expanded access to credit has been enthusiastically canvassed in the development community for its ability and potential to generate sustainable economic growth that greatly favours the poor (Murdoch, 2000; Robinson, 2001).

Provision of financial services especially credit and savings facilities, can help poor rural households manage and often augment their otherwise meagre resources and income and acquire adequate food and other necessities. According to Zeller and Sharma (2000), credit facilities help poor households to tap financial resources beyond their own and take advantage of profitable investment opportunities. Accordingly, households can invest in land improvements or agricultural technology such as, motorised farm tools and equipments, high-yielding seeds and fertilizer that increases incomes (while sustaining the natural resource base). Incentives to build

up funds for future investment or consumption can also be facilitated by provision of financial services especially investment credit to impoverished households. It can help landless rural households establish or expand family enterprises, potentially making the difference between abject poverty and an economically secure life. When household income is temporarily on the decline, for example, between agricultural seasons after or a bad harvest, short-term borrowing or savings are often used to maintain consumption of necessities.

In South Africa, the formal financial sector is well developed and highly concentrated in urban areas in terms of both available services and the volume of transactions (Mashigo, 2006). The main providers of financial services, especially credit, are the banks. These banks often target clients with ownership of relatively high value mortgage-able property and people who possess pay slips as proof of employment and collateral for loans, which many poor households lack. Collateral for the commercial financial sector plays an important role because it insures repayment if the client's income is insufficient. This carries with it the transaction and administrative costs, interest rates, and the costs of acquiring information about the borrower (Baumann, 2001).

Income distribution and economic structure in South Africa is also highly skewed, thereby creating in a large number of so-called "unbankable" households who cannot be profitably served and are marginalised. They therefore depend largely on state transfer payments, such as pensions, and affective transfers from employed relatives for their cash income (Baumann, 2001). Unfortunately, most commercial financial institutions are not favourably disposed to lending to the poor rural households, and where they do, it is usually short term financing. This is

based on the faulty perception that the poor, who are mostly earning less than \$1 per day, are not creditworthy, neither do they save, or able to afford insurance against the risks they face (Zeller and Sharma, 2000).

## **1.2 Problem Statement**

Policymakers have the long held belief that poor households in the developing countries lack access to adequate financial services for efficient inter-temporal transfers of resources and risk coping (Diagne, 1999). The reason being that without well functioning financial markets, poor households do not have much prospect for increasing in any significant and sustainable way their productivity and living standards. Also, due to the fact that traditional commercial banks usually have no interest in lending to poor rural households, because they lack viable collateral and the high transaction costs associated with the small loans that suit them (Zeller and Sharma, 2000).

It is a common notion that credit constraints and other credit market imperfections may severely limit the investment and operations of household firms. Credit constraints limit the size of household firms, as well as their growth, profits, activations and liquidations, and possibly their scope of operations (Monge-Naranjo and Hall, 2002).

Nonetheless, in South Africa, as in most developing countries, rural financial services are sadly inadequate. The poor with no access to formal sector credit have to revert to the informal financial sector to meet their credit demand (Montiel *et al.* 1993), for both productive investment (Binswanger and Khandker, 1995) and consumption smoothing (Heidhues, 1995; World Bank, 1989). Ardington *et al.* (2003) further argued that poor households' limited access to formal

financial risk management instruments (savings, credit and insurance) constrains their ability to cope with shocks and further increases vulnerability to poverty.

The tasks of providing credit and saving opportunities, at a reasonable cost to those who have only meagre assets, have been neither straightforward nor easy. Most micro-credit schemes are designed to help the underprivileged and marginalized poor have access to credit to develop and finance productive income generating activities, including farming.

While making credit available has been the universal policy prescription to alleviate poverty, the fact that credit may not easily be accessible to everybody in the real world is a significant issue. There are factors prevailing in the market that make the provision of credit to everybody difficult and/or impossible to obtain, foremost of which is the fact that there are borrowers who are just not credit worthy and hence do not qualify for loans. Asymmetric information can also hinder financial institutions from providing credit to everyone because of adverse incentive effects (Stiglitz and Weiss, 1981).

Transaction costs for both lenders and borrowers can prevent equilibrium in the credit market. Since lenders behave with the profit motive in mind, they will lend to borrowers who are the most creditworthy. More often than not, these borrowers can offer collateral or other substitutes that are deemed acceptable by the lenders such as retained earnings or savings characteristics of the borrowing households (Lapar, 1988; Nagarajan, 1992; Esguerra, 1993). On the other hand, borrowers also incur transaction costs in their search for credit. If such costs become too prohibitive for them, they are more likely not to borrow at all (Abiad and Graham, 1988).

Recognizing that credit may not be easily accessible to everyone has further compounded the effects of credit constraints on the economic behaviour of rural households and their enterprises. Lack of access to credit (or credit constraint) may be an important reason why rural household enterprises face binding liquidity constraints. This has been suggested in the results of a survey of small enterprises in Ghana. Duggleby *et al.* (1992) found that lack of access to finance is perceived to be an important constraint on the ability of small enterprises in Ghana to fulfil their potential for dynamic growth under the Economic Recovery Program.

While liquidity constraints may arise due to factors like inadequate internal funds or inefficient management and, therefore, are within the control of the household, credit constraints are the result of factors beyond the control of the household. This makes it even more important to recognize the degree to which a binding credit constraint contributes to the loss in potential productivity and economic welfare of households.

In view of the above, this study intends to provide answers to the following research questions:

- i) What are the poverty statuses of the rural households and the determinants of poverty?
- ii) What factors influence household access to credit?
- iii) What factors contribute to households being credit constrained in the credit market?
- iv) What is the effect of credit-constraints on the welfare of the rural households?



### **1.3 Objectives of the Study**

The broad objective of the study is to examine household credit accessibility and the effect of credit constraints on household welfare in the Eastern Cape Province.

The specific objectives are to:

- i) estimate the poverty status and the determinants of poverty of the rural household;
- ii) identify the factors influencing household access to credit in the credit market;
- iii) identify the factors that influence credit constrained households; and
- iv) assess the effect of credit-constraints on the poverty status of the rural households in the study area.

### **1.4 Thesis Statement**

In light of the above stated research problem and objectives, the thesis of this study is that household socio-economic characteristics are the major determining factor for credit accessibility.

Access to credit market enhances household welfare through the provision of investment credit to boost household income (Adugna and Heidhues, 2000) as well as consumption smoothing (Zeller, 1994), with the net effect of enabling households to move out of poverty (MFPED, 2001). However, some households have constrained access to credit markets due to market imperfections, institutional and household level factors (Nwanna, 1995). At the institutional level, formal lenders in the credit markets incur high costs in assessing the creditworthiness of small borrowers with low returns due to the small loan amounts involved. For this reason, formal

lenders adopt strict collateral requirements as a screening mechanism to minimise default risk, hence keeping small borrowers out of formal credit markets or rationing their credit. At the household level, low levels of income and asset accumulation, widespread poverty and highly skewed income and asset distribution gives poor rural households a high risk profile which makes them less attractive to formal lenders (Hoff and Stiglitz, 1990). It has been reported that even lenders in the informal credit markets have designed non-price mechanisms for screening and rationing borrowers (Zeller, 1994).

A survey of empirical literature shows that other socio-economic variables that influence the probability of a borrower's credit being rationed include the borrower's age, gender, household wealth and/or asset values (Zeller, 1994), education level and income and access to network information (Vaessen, 2001). Men mainly control household resources and are perceived by lenders to be more credit worthy than women are. Household wealth and/or asset values are important as collateral, hence control of these reduces the man's probability of credit rationing. Education level enhances human capital in the form of skills, which is associated with effective utilisation of credit and minimisation of default risk. Access to network information enables the screening of potential clients and reduces default risk, as only those with good reputation are likely to be recommended for credit.

The overarching argument of this research therefore, is that credit market accessibility by poor rural households in the Eastern Cape Province of South Africa is highly influenced by their household level socio-economic factors, which has hindered their attainment of a better economic and welfare outcomes hence poverty has remain pervasive in these rural areas.

## **1.5 Hypotheses**

The hypotheses put forward for this study are:

- i) Access to credit is not influenced by the household socio-economic factors;
- ii) Household credit constraint condition is not affected by the hypothesized household socio-economic factors;
- iii) Credit constraint does not influence the household welfare.

## **1.6 Motivation and Significance of the Study**

Increasing global attention is been given to the study of household access to credit and its effect on various aspects of human life especially in alleviating poverty. Although access to credit has been shown to be of crucial importance in the reduction of household poverty, policy for micro-finance in South Africa appears to be underdeveloped and lacking in coherence (May, 1998).

Recent data available from the annual Fin Scope survey (FinScope, 2005) revealed that 53 percent (16,4 million) of the South African adult population is excluded from formal financial services and does not have a bank account. These 16,4 million people are marginalized or formally excluded from credit. Of those without access, 99 percent are black, 49 percent live in rural areas and 55 percent are women. Placing these statistics in context, the unbanked populace in South Africa are the marginalized poor black people that form part of the 20 percent of South Africa's population that earns less than US\$1 a day, with many being part of the 30,5 percent officially unemployed (DBSA, 2005).

In practice, households apply for credit, but lenders determine how much credit is allocated to them, based on their perception of the household's creditworthiness. This often results in household being credit constrained, which reflects the lender perception of the household risk profile. Therefore understanding the factors that influence households to be credit constrained will highlight specific interventions that may raise the creditworthiness of households, both to the advantage of lenders and households. Improved creditworthiness of borrowers, from the lender's perspective, will reduce risk of default and improve profitability and financial sustainability. From the household's side, increased creditworthiness means increased access to credit, which may provide a possible escape route from poverty.

While credit constraints are widely seen as pervasive, little is known about its incidence or importance. For example, while few poor rural households borrow, there is considerable debate whether this is due to their low demand (as claimed by lenders) or to these households more often being denied access to credit.

The failure of households to gain access to credit is frequently used as an explanation of many important economic phenomena. Accordingly, many studies have been conducted to investigate the determinants of household access to credit and its effects on a different range of issues in South Africa. However, despite the large number of studies on credit accessibility, there has been relatively little empirical work devoted to understanding why households are credit constrained in the credit markets in South Africa, particularly the determinants of credit constraints and its effects on household's economic outcomes in the Eastern Cape Province.

There is need for empirical research on access to credit and effects of credit constraints on household welfare and poverty in order to generate sustainable information that would serve as a tool or guide for policy makers in their quest to improve welfare, reduce poverty and achieve the objective of government towards better rural livelihoods. Results from this quantitative study, would be of use in forming a link between concepts and reality. It will also facilitate the proposition of relevant policy interventions and/or reforms that would lead to improved welfare and practical alleviation of the level of poverty in the Eastern Cape and other regions of the country.

The importance of the study, therefore, is its potential in filling some gaps in literature on access to credit and the effect of credit constraints on households welfare and poverty alleviation in the Eastern Cape Province. It attempts to identify reasons for the limited access to formal and semiformal financial services by rural informal enterprises, by looking at demand and supply behaviour. This study is also expected to contribute both to the growing knowledge on credit as a tool for poverty alleviation and rural development in the academic world; and information input relevant to government, policy makers and implementers towards an improved welfare status for rural dwellers.

### **1.7 Delineations and Limitations of the Study**

This study is limited to rural financial markets and it concentrates more on the micro aspects of rural finance. In terms of financial services, only credit components are analysed while other services such as savings are not considered. The focus in this dissertation was households' access to the credit market through the provision of investment/production credit. In addition, only a

relative poverty measure was used in the analysis. Household consumption expenditure per adult equivalent was used as a proxy for household welfare.

One major limitation of the study is that the accuracy of the data depends on the information given by respondents. Most households do not keep records of their operations and finances, hence the dependence of the research on verbal information from respondents, who depend on memory recall. Any bias on their part would affect the results. However, all the appropriate scientific approaches to ensure that the confidence levels are high enough were implemented.

It is also worth noting that one of the limitations of empirical analysis is that the behaviour of only 150 households in a random sample is under consideration and generalised to the rest of poor rural households in the Eastern Cape Province. Due to the different contexts of the provinces, the findings of this study cannot be generalised to rest of South Africa. Therefore, there is need to complement the result of this study with similar studies in other provinces in order to broaden the scope of application of the result of this study.

## **1.8 Chapter Overview**

In Chapter 2, a review of literature related to the nature of poverty in South Africa is presented. The objective is to give an overview of the different approaches and concepts of defining poverty, as well as its indicators, the categories of poor people and the different poverty measures in South Africa are presented here.

Consideration is given to the features of rural credit markets and their relationship to credit accessibility in Chapter 3. Features that distinguish rural credit markets from other markets are also discussed. Some of the major constraints to credit accessibility in the formal financial markets are highlighted, while in Chapter 4, an overview of microfinance in the South African context and of the role of microcredit as an intervention for poverty alleviation in developing countries in achieving economic development and growth is presented.

The theoretical framework within which this study is situated is discussed in Chapter 5. A concise definition of credit rationing and credit constraint is provided. A review of the existing approaches for measuring access to credit and credit constraints is presented. The weakness in the simple versions of the life-cycle/permanent income hypothesis (LC/PIH) as an approach for detecting credit constraint is exposed. The chapter concludes by suggesting a credit constraint framework for the classification of borrowers to be used in this study.

In Chapter 6, a socio-economic profile of the study area and a detailed description of the survey methodology and analytical technique used in this study were presented. In Chapter 7, empirical tests of the hypotheses are conducted and the results discussed. It covers three major analyses, namely, the poverty profile and the determinants of household poverty in the study area, differential accessibility of credit to poor rural households, and the effects of credit constraints on household's welfare. In Chapter 8, the summary and conclusions of the major empirical findings, implications for policy and recommendations for future research were presented.

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# CHAPTER 2

## THE NATURE OF POVERTY IN SOUTH AFRICA

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### 2.1 Introduction

There is a consensus that poverty is one of the most urgent social and economic factors that need to be addressed in South Africa. However, there is little agreement about how to define poverty, let alone measure it. This poses questions about government's ability to develop policies and programmes that are able to address the causes and the effects of poverty in the absence of universally acknowledge empirical data. This lack of knowledge also retards understanding and knowledge about different kinds of poverty, which, in turn, affects the appropriateness of government interventions. This chapter present an overview of the diverse aspects of poverty in South Africa. It explores the different concepts and definitions of poverty and its major indicators, *i.e.* the salient facts regarding the incidence and nature of poverty. Then, it discusses qualitative/experiential aspects of poverty, making the point that poverty is not simply a question of not having enough money. In this chapter, the categories of people who are especially vulnerable to becoming stuck in poverty were identified. Finally, a review of how poverty in South Africa had been measured in the past was presented.

### 2.2 Concepts and Definitions of Poverty

The concept of poverty is not so easy to describe in view of the fact that no universally acceptable definition is available. However, disagreements over the definition of poverty run deep and are closely associated with disagreements over both the determinants and solutions to it. In practice, all these issues of definition, measurement, determinants and solution are bound



up together, and an understanding of poverty requires an appreciation of the interrelationship between them all. Nevertheless, some logical distinctions can be made, and they will have to be if researchers are to make any progress in analysing the range of theoretical and empirical material these debates have produced.

According to Townsend (2000), a critical issue on the understanding and definition of poverty, is the interrelatedness and interconnectedness of concepts, definitions, explanations and policies. Ravillion (1992) has also observed that poverty measurement and policies are often inseparable. Bradshaw (2000) makes a related but contestable point, that in poverty research the measure determines the result. Therefore, it is clear as Magasela (2005) argues; the definitions and measurements of poverty ought to inform programmes and policies aimed at poverty alleviation and/or eradication.

### **2.2.1 Approaches to Defining Poverty**

The difference between the concept, definition and measurement of poverty has been critically highlighted by Noble *et al.* (2004). They use the concept to refer to the general parameters out of which definitions are developed, while definitions are what are used to distinguish the poor from the non-poor and measurements operationalise the definition. This clarity of approach is very useful in unpacking how poverty can be addressed.

According to Gumede (2008), there are two contrasting approaches to the meaning and understanding of poverty. These are what he referred to as the “narrow” and “broad” definitions. Narrow definitions are seen as minimalistic and are based on subsistence, an example is the

World Bank's definition of poverty as "the inability to attain a minimal standard of living" (World Bank, 1996) measured in terms of basic consumption needs or income required to satisfy those needs is indicative of a narrow poverty approach. Broad definitions of poverty on the other hand, are seen as ideal, as it emphasises social inclusion, involvement and participation specific to a given society at a specific time. In this approach, the standard of living and quality of life of an individual, household or family is assessed in the context of or in relation to socio-economic and resource profile of the society. An example is the Townsend (1979) definition of poverty. He contends that individuals, families and groups in the population can be said to be in poverty when they lack the resources to obtain certain types of diet, participate in certain activities and have the living conditions and amenities that are customary, or at least widely encouraged or approved, in the societies to which they belong.

In economic literature in particular, there are also the absolute and relative definitions of poverty. Absolute poverty is a condition characterised by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on access to social services (UN, 1995). In general, absolute poverty means that a person's basic subsistence needs (for food, clothing, and shelter) are not being met. Absolute poverty is defined by reference to a certain quantitative measure, which is used to define the poor from the non-poor. It is usually based in the cost of purchasing a minimum "basket" of goods required for human survival. Absolute definition of poverty as shown in literature, tend to be minimalist and are based on subsistence and attainment of physical efficiency. Subsistence is concerned with the minimum provision needed to maintain

health and working capacity. Its focus is the capacity to survive and to maintain physical efficiency (Townsend, 1979; 2000).

Relative poverty, on the other hand, is a more subjective or social standard in that it explicitly recognises that some judgement is involved in determining poverty levels (Sen, 1981). Judgement is required because a relative definition of poverty is based on a comparison between the standard of living of the poor and those of the other members of the society who are not poor, usually involving some measure of the average standard of living of the whole society in which poverty is being studied.

It typically means that a person's needs are not being met in comparison to the rest of his or her society. It attempts to understand inequality in terms of distributions of resources in a society. It can also emphasise social inclusion, involvement and participation. According to Townsend (1979), individuals, families and groups in a population can be said to be in poverty when they lack the resources to obtain the types of diet, participate in the activities and have the living conditions and amenities, which are customary, or at least widely encouraged or approved, in the societies to which they belong. Their resources are so seriously below those commanded by the average individual or family that they are in effect, excluded from the ordinary living patterns, customs and activities.

### **2.2.2 Poverty Definitions**

There has been a continued debate about the meaning of poverty. Poverty to different people means different things; perhaps the first concept that comes to mind is that poverty is the lack of

certain minimal income necessary to attain a “decent” standard of living (Sen, 1992). Poverty may also have wider meaning, encompassing malnutrition, illiteracy, unemployment, substandard housing and other dimension of a low standard of living (UN, 1995).

Giving a concise and universally accepted definition of poverty, therefore, is elusive principally for the reason that it affects several aspects of the human circumstances, which includes the physical, moral and psychological. Therefore, different criteria have been used to conceptualize poverty.

According to the European Economic Community (EEC) (1985), the poor can be defined as those individuals, families or groups of persons, whose material, cultural and social resources are so seriously below those commanded by the average individual, family or group, that they are in effect excluded from the minimum acceptable way of life in the member state they belong. The United Nations (UN) on the other hand defines poverty as “ a condition characterised by severe deprivation of basic needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information” (UN, 1995:57). The World Bank (1996) gives a broad definition of poverty as being unable to meet “basic needs” - physical and nonphysical-requirements for a meaningful life. The physical needs include food, health care, education, shelter and the non-physical includes participation and identity.

Sen (1983) relates poverty to entitlements that are taken to be the various bundles of goods and services over which one has command, taking cognizance of the means by which such goods are acquired, and the availability of needed goods. While, according to Ravallion (1992), poverty

can be said to exist in a given society when one or more persons do not attain a level of material well-being deemed to constitute a reasonable minimum standard of society. Blackwood and Lynch (1994) use the criteria of the levels of consumption and expenditure to identify the poor.

Several attempts by economists and social scientists to conceptualise the phenomenon of poverty abound in social science literature. Mostly they refer to different dimensions of standards of living. These include a material well-being, basic human needs, and a more comprehensive 'way of life'. Broadly speaking, poverty can be conceptualised in four ways; these are lack of access to basic needs/goods; a result of lack or impaired access to productive resources; outcome of inefficient use of common resources; and a result of "exclusive mechanisms" *i.e.* a certain level of social participation.

Poverty that is perceived as a lack of access to basic needs/goods is fundamentally economic or consumption oriented. It explains poverty in material terms, and explicitly uses consumption-based categories to describe the extent and depth of poverty and ascertains who is poor and who is not. Consequently, in a particular society, the poor are perceived as those individuals or households incapable of purchasing a specified basket of basic goods and services. According to Streeten and Burki, (1978), these basic goods are nutrition, water, shelter/housing, health care, access to productive resources including education, working skills and tools and political and civil rights to participate in decisions concerning socio-economic conditions. Necessary for survival are the first three basic needs/goods. Impaired access to productive resources in form of agricultural land, physical and financial assets often leads to low income, unemployment and under nourishment.

Five dimensions of poverty have been distinguished by Chambers (1988) to include:

- ‘Poverty proper’ being lack of adequate income or assets to generate income;
- Physical weakness due to under-nutrition, sickness or disability;
- Physical or social isolation due to peripheral location, lack of access to goods and services, ignorance or illiteracy;
- Vulnerability to crisis and the risk of becoming even poorer; and
- Powerlessness within the existing social, economic, political and cultural structure.

Illustrated in the Participatory Poverty Assessment is another approach to defining poverty. This consists of asking the poor themselves how they would define poverty. As such, it has both an absolute and a relative aspect as it includes the poor’s own needs, how they view these needs against the canvas of the community in which they live. From the report of the South African Participatory Poverty Assessment (SA-PPA) (May, 1998), South Africans from the various studies defined poverty in the followings ways:

- Isolated from the community; being unable to mix easily with other people.
- The children are malnourished and the food that is served is of poor quality.
- The homes are crowded and are not maintained.
- The most basic forms of energy are used and the family is frequently energy insecure.
- Nobody in the family is employed.
- Families are split, with fathers not present, and children living elsewhere.

## **2.3 Proximate Indicators of Poverty**

Proximate indicators of poverty are factors linked with poverty. These factors are ‘proximate’ because they are contemporaneous with poverty, *i.e.* they are found in association with poverty. In literature, they are often referred to as proximate determinants of poverty. According to Coudouel *et al.* (2002), there are two classifications of the indicators of poverty, namely, the monetary and non-monetary indicators respectively. The monetary indicator is based on either income or consumption expenditure while the non-monetary indicators include health, education, assets or a composite of these.

### **2.3.1 Monetary Indicators**

Income and expenditure are important variables in the analysis of poverty. According to May (1998), from the report of the South African Participatory Poverty Assessment (SA-PPA), South Africans defined poverty as the lack of income and the inability to meet basic needs among many other definitions.

The major source of income in the urban areas of South Africa is wage employment, while in the rural areas because of the lack of access to productive resource, the rural dwellers are almost totally dependent on state transfer payments, such as pensions, disability and childcare grants, inter- and intra-household transfer and informal microenterprise for their cash incomes (Baumann, 2004). Income from wages is very important in enabling households to escape poverty; a low level of income is an indicator of poverty. According to Woolard (2002), of the estimated 42 million people living in South Africa in 2002, eight million are surviving on less than \$1 per day, and 18 million were living on less than \$2 per day.

A low level of economic wealth is another monetary indicator of poverty. Economic wealth is derived from assets that generate income, capital gains or liquidity when strapped for cash. In the event of adverse shocks (such as drought or loss of a wage worker or pensioner), assets like oxen can play an insurance role, helping for consumption smoothing in areas where households do not have access to efficient insurance and credit markets (Little, 2002). It has been demonstrated in a study by Little (2001) that households deplete their livestock herds and consume their seed stock (de-accumulation) after the debilitating effects of drought in rural Ethiopia to postpone malnutrition and disease.

Also being poor means devoting insufficient resources to consumption. In a welfare monitoring survey in Kenya, the result shows that the poor spend a larger part of their expenditure on food as compared to the non-poor (Kimalu *et al.* 2002). This agrees with the Engel's Law, which states that relative to the non-poor, the poor spend a higher proportion of their income on food.

### **2.3.2 Non-monetary Indicators**

Examples of non-monetary indicators of poverty include the following:

- *Unemployment:* The incidence of poverty is closely related to unemployment, under-employment, and unremunerative forms of employment. Employment is a crucial determinant of poverty. Access to employment is important for an individual to earn income, achieve sustainable livelihoods and escape from “income” poverty. Unemployment levels are highest amongst people who lack education (Woolard, 2002).



In South Africa, almost 60 percent of adults with no formal education are poor, whereas the incidence of poor people is 15 percent amongst matriculants and about 5 percent amongst those with tertiary education (Woolard, 2002). The poor are faced with problems of structural employment due to lack of skills or extremely low educational levels, medical problems, geographical isolation and discrimination based on race or other attributes, which are largely the legacies of the apartheid era.

- *Location:* The rural areas in South Africa suffer from legacy of inappropriate production and investment decisions. For many rural people in the former homeland areas, economic and social decisions remain conditioned by their unequal and distorted access to markets, services and opportunities. Rural poverty is more common than urban poverty. According to the Income and Expenditure Survey of 1995, 62 percent of rural dwellers were poor, compared to 32 percent of people living in small towns, 25 percent of those in secondary cities, and 13 percent in major metropolitan areas (Woolard, 2002).

According to Woolard (2002), the incidence of poverty still reflects apartheid geography, with over 74 percent of the poor live in rural areas, and only 7 percent live in the metropolitan areas, notwithstanding the large size of the latter. Poverty is concentrated in former homelands, which accounts for the fact that the provinces that are home to the poorest people – Eastern Cape, Limpopo, and KwaZulu-Natal – are those that encompass the most populous former homeland areas. Asset ownership and distribution patterns remain those formed by apartheid; in particular, landlessness, overcrowding and a huge backlog in rural infrastructure persists (May, 1998). This problem is manifest in poor

natural resources and high transaction costs in remote areas where physical infrastructure and services are inadequate (White and Killick, 2001). According to Adeyeye, (1987), impaired access to resources usually shifts the focus on poverty and it curtails the potential of individuals to convert available productive resources to a higher quality of life.

- *Female-headed Households:* Female-headed households are more likely to be poor than male-headed households. According to the 1993 South African Labour Development Research Unit (SALDRU) data, *de jure*, female-headed households have a 48 percent chance of being poor, and a *de facto* female-headed household has a 53 percent chance of being poor. By contrast, a male-headed household has a 28 percent chance of being poor. A number of factors contribute to this asymmetry. For example, female-headed households are more apt to be in rural areas where there is little economic opportunity, gender discrimination in wage levels, etc. (Woolard, 2002).
- *Childhood Poverty:* A disproportionate number of poor people are children living in poor households. Fifty-eight percent of children live in poverty, and two thirds of children in the Eastern Cape live in poverty (Woolard, 2002). Childhood poverty is also revealed by the appallingly high incidence of visible malnutrition among children; around 23 percent of children, less than 6 years old are stunted, indicating a protracted period of under-nutrition (Steyn, 2000). The most seriously affected children are those in rural areas whose mothers have relatively little education. In addition, the infant mortality rate is 8 to 10 times higher for blacks than for whites.

- *Health and nutrition poverty:* Good health is basic to human welfare and a fundamental objective of social and economic development. The household members' health status can be taken as an important indicator of well-being. The nutritional status of children as a measure of outcome as well as the incidence of specific diseases (diarrhoea, malaria, and respiratory diseases) or life expectancy for different groups within the population has been the focus of analysts (Coudouel *et al.* 2002). High levels of morbidity and infant mortality are often the result of poor nutrition and inadequate health care. The incidence of HIV/AIDS in South Africa has compounded these problems. According to the South Africa Data Profile (2002), the Development Resource Centre has projected that the HIV/AIDS death toll will increase to about 5,5 million by 2011. The infant mortality rate in South Africa in 2001 was more than ten times higher than the rate in high-income countries, and, in 1998, the average life expectancy had fallen to 47 from 61 years.

If data on health outcomes are unavailable, the number of visits an individual makes to hospitals and health centres, the extent to which children receive vaccinations in time as an input for their future health status, or access to specific medical services (such as pre- and postnatal care), are input proxies that could be used as indicator of poverty (Coudouel *et al.*, 2002).

Access to health care has long been considered as crucial in helping people attain core capabilities that help them escape poverty. Ill health is seen as an indicator of poverty. Poverty perpetuates ill health, because the poor, as compared with non-poor, are less

likely to report health problems and seek medical treatment in the event of illness (Kimalu *et al.* 2002). Poor health shackles human capital, reduces returns to learning, impedes entrepreneurial activities and holds back growth and economic development (Ajakaiye and Adeyeye, 2002).

- *Education poverty:* The level of literacy could be used in the field of education as the defining characteristic and some level judged to signify the threshold for illiteracy as the poverty line. In countries where literacy is widespread, specific test scores in schools might be opted for as the relevant outcome indicator to distinguish among different population groups. Another method would be to compare the number of years of education completed to the expected number of years that should be completed in principle (Coudouel *et al.* 2002).

Education is considered a vehicle for poverty reduction. Education is expected to lead to increased earning potential and improved occupational and geographical mobility of labour. Higher levels of educational attainment will provide higher levels of welfare for the household. It has been demonstrated in a study by Mwabu *et al.* (2000), that poverty is highest among people without any schooling. Their results further show virtually no incidence of poverty among households headed by university graduates. Mukherjee and Benson (2003), in a study in Malawi, showed that raising the maximum level of educational attainment by one step as the case may be, for example from Standard 4 to 8, from Standard 8 to JCE, or JCE to MSCE. This will raise household per capita

consumption on average by 22, 19, 11.5 and 17 percent in southern rural, central rural, northern rural and urban centres respectively.

- *Poor Standards of Housing:* In South Africa, inadequate housing in urban townships and rural settlements has reached crisis proportions, with an estimated 7 million people living in squatter camps (Brew, 2002, cited by Shinns and Lyne, 2005). However, according to May *et al.* (1995), it is not only the type of dwelling (formal or informal) that is important, but what the dwelling is constructed of, the density of occupation, and whether or not sanitation is hygienic and water is safe to drink. In 1999, only about 47 percent of the poor in South Africa had access to reticulated water and 38 percent to adequate sanitation (Woolard, 2002). Access to safe water and sanitation varies by poverty status and locality. Sanitation and waste disposal services are scarce in most cases for the poor in rural and urban areas.
- *Energy Poverty:* Energy poverty is the condition of having less than certain level of daily energy consumption necessary to maintain a minimum standard of living. This often has a range of negative impacts on nutrition, hygiene, health and comfort. In addition, energy poverty limits households' ability to engage in different economic activities such as small and micro-enterprises (May, 1998).

The type of cooking fuel a given household uses is an important indicator of its standard of living. The use of electricity and gas instead of firewood, for example, saves time that households can spend on other productive ventures (Kimalu *et al.* 2002). There is an

overwhelming dependence by the rural poor on collected firewood as source of household energy, whereas the urban poor have access to both charcoal and paraffin. In South Africa, most of the rural poor meet their energy demand by using biomass fuel, or a combination of biomass and hydrocarbon fuels or sometimes electricity, this multiple fuel use or fuel-switching is peculiar to low-income households (May, 1998).

- *Insecurity and Vulnerability:* Poverty entails more than inadequate consumption, poor health or lack of education. According to the World Bank (2000), it also means dreading the future and knowing that crisis might descend any time that one might not cope with. This type of risk and insecurity is a common feature of the poor people's life and of poverty today, especially in the developing countries. The most insecure in any society are the poor because they are the most exposed to a wide range of risks that make them vulnerable to income shocks and losses of social welfare benefits. Income shocks are the more frequent and severe where people have poor access to health care and rely on agriculture for livelihoods (White and Killick, 2001). Insecurity among the poor manifests itself in forms such as ill health and injury, crime and domestic violence, the problems associated with old age, harvest failure, fluctuations in food prices and low demand for labour (World Bank, 2000). Farming is particularly vulnerable to natural disasters such as drought, floods, pests and diseases.

Poor people are vulnerable to a number of harmful and potentially devastating threats, which they may not have the resources or power to avert. Among such threats are:

- fire (e.g. shack fires, which destroy one's home and possessions);
- floods (because poorer people often end up erecting their shelters in flood-prone areas);
- job loss; crime (theft of money and possessions, and bodily harm);
- poor agricultural conditions (e.g. for those who rely in part on food production for sustenance); and
- illness and death in the family (often with no resources to seek medical care).

The experience of vulnerability is an aspect of poverty in and of itself, that is, a palpable disturbance to one's 'peace of mind'. In the SA-PPA, this sense of vulnerability was articulated in a number of different ways. For example, many participants expressed concern for their ability to cope with unpredictable crises. Bedford (1995), cited in May *et al.*, (1997), notes the extreme stress and anxiety suffered by street children, who are exposed to constant threats of violence and sexual abuse. Chopra and Ross (1995, cited in May *et al.*, (1997) also indicate that African women in northern KwaZulu-Natal were particularly aware of the threat of children falling ill during certain times of the year.

- *Crime and Violence:* According to May (1998), violent crime is one of the more severe shocks that can cause vulnerable households to become impoverished. Crime and violence contribute to the experience of poverty at two levels. On one level, the exposure to crime and violence directly detracts from the quality of life of its victims and those fearful of being victimized. On another level, the high incidence of crime and violence that forms a salient feature of everyday life in South Africa is symptomatic of a profound

social malaise, wherein the cycle of poverty and violence are indistinguishable. A steady increase in crime and violence has degraded the quality of life to a varying extent in most countries of the world. There have been instances of shootings, gang killings, rape etc. Although individuals of all socioeconomic groups are affected, the urban poor are particularly vulnerable to these social problems (Ajakaiye and Adeyeye, 2002).

South Africa has among the highest rates of violent crime in the world today and the poor people are far more at risk from personal crime than the affluent. Crimes such as burglary and robbery can result in poor people losing what little assets they have (May *et al.*, 1997), the prevalence of violence adds to people's sense of vulnerability and oppression. While state-sponsored violence ended with apartheid and political violence has greatly subsided, violence among people who know one another in poor communities is rife, and is often linked to substance abuse. A 1996 study of homicide in the Eastern Cape found that 93 percent of all cases were linked to alcohol and drugs, while in the Northern Cape, research had similar findings, and found as well that most cases were related to family disputes (CIAC, 1997, cited in Hamber and Lewis, 1997).

Violence and crime are increasing in rural areas (Hamber and Lewis, 1997). In fact, homicide rates are higher in South Africa's rural areas than in its urban centres (Hamber, 1999). That poor people are more likely to be victims of violent crime is borne out by the statistics, which show that a poor person is 80 times more likely to be injured or killed through violent crime than a wealthy person (Steinberg, 1999, cited in Hamber, 1999).



- *Lack of Voice and Social Exclusion:* One other aspect of the experience of poverty as revealed in the SA-PPA, is that of lack of 'voice', which is a growing area of attention internationally. Broadly speaking, a person 'has voice' when s/he feels s/he has an opportunity to somehow participate in decisions that may affect his/her life, as well as having avenues to lodge grievances with relevant authorities and institutions if s/he so wishes. Lack of voice was of course an acute aspect of many people's experience under apartheid, and was reversed in a significant way with the first all-inclusive democratic elections in 1994. The importance attached in the new dispensation to local government is a further reflection of the new government's earnestness to allow people these means of expression. However, much of the experience of voicelessness in South Africa, particularly among the poor, is not at the formal political level, but at the level of communities and households. In their study of trends in public participation, Roefs and Liebenberg (2000) note that the majority of South Africans have little understanding of the role of local councils and parliament (80 percent and 73 percent respectively), and only a minority of poor people specifically participate in any way in local councils or public hearings (23 percent and 22 percent respectively). However, 46 percent of poor respondents surveyed reported that they participate in some sort of community activity or organisation, and 30 percent of respondents indicate that community organisations are the most appropriate venue for addressing problems in the community. While these figures are encouragingly high, they underline the fact that the more marginal members of these same poor communities are apt to have an acute sense of social exclusion and voicelessness in their communities. This comes through vividly in the studies conducted as part of the SA-PPA. Chopra and Ross (1995), cited in May *et al.*, (1997), led their

community participants in an exercise to identify the distinguishing characteristics of the poorest homes in their village in northern KwaZulu-Natal. Amongst the five characteristics identified, low income was not included, but not being part of community gardens or crèches was.

Different sub-groups experience social exclusion in distinct ways. For the elderly, for example, the experience of social exclusion can be the result of fraught or absent family relationships. In a study in the Northern Province, Maphorogo and Eager (1995), cited in May *et al.*, (1997), identified that "a 'bad' or 'rude' daughter-in-law is a main cause of unhappiness of older people", as was living without one's spouse. Poor support generally from one's children or partner is thus considered emblematic of poverty. Apart from the fact that loneliness diminishes one's sense of well-being, the absence of supportive family members can attenuate one's links to the community, and render more difficult tasks such as collecting one's pension on pension day, etc. A recent report by the Ministerial Committee on Abuse, Neglect and Ill-Treatment of Older Persons (Department of Social Development, 2001), draws a frightening picture of the insensitive and/or exploitative treatment to which some elderly people are subjected. In addition to the abuse directed at some elderly people by their own family members, the report highlights poor conditions in residential homes, at pension payout points, and at clinics. People with disabilities face forms of social exclusion, which contribute directly to their likelihood of missing economic opportunities. This social exclusion operates independently of the actual physical or mental challenges that the physically challenged may face. As such,

'disabilities' are in large measure a social construct, which has the effect of excluding certain individuals (Yeo, 2000).

## **2.4 Categories of Poor People in South Africa**

One can fairly ask what personal attributes or environmental factors tend to keep people in poverty. The circumstances in which one finds poverty are in fact quite diverse. In addition to unemployability and poor business prospects, poverty can be a function of discrimination, or due to the severance of social networks, or in still other cases, it can be the outcome of complex processes such as the migrant labour system. This section describes some of the main categories of poor people in South Africa, and attempts to relate this poverty to underlying causes and influences.

- ***The Rural Poor:*** Poverty is especially prevalent in rural areas, and particularly among Africans and Coloureds. The national data on poverty and unemployment, together with some of the statistics derived from the KwaZulu-Natal Income Dynamics Study (KIDS) data, indicate that, as a group, rural blacks have a high chance of being poor. Lack of access to employment is arguably the single greatest cause of rural poverty. In 1999, over 51 percent of the rural African workforce was unemployed, versus 43 percent for Africans in urban areas. However, rural poverty is aggravated by lack of access to productive resources. According to the Rural Survey (Stats SA, 1999), in 1997 there were some 900 000 African households living in former homelands that had no access to arable land, 1,4 million that had no livestock other than chickens, and 770 000 households that had neither. This is largely a function of the overcrowded conditions in

these areas. For those people dwelling in former homeland areas that do have access to arable and grazing land, that access can make a significant difference, though it does not often offer a route out of poverty. Based on the 1993 SALDRU data, it was estimated that among the poorest 20 percent of households in former homeland areas having access to arable land, agricultural production contributed 35 percent of total income (LAPC, 1996). Moreover, as Ardington (1988) has shown, poor households in particular rely on selling livestock to offset financial crises. Shackleton, *et al.* (2000) have shown that beyond conventional land-based products such as grains, vegetables, meat and milk are numerous other valuable products that can be harvested or derived from the land, whether their own land or from the commons.

- ***Female-headed Households:*** According to Aliber (2003), statistics from the 1999 October Household Survey (OHS), shows that 42 percent of all African households, (*i.e.* 2,7 million) are female-headed. Largely, these are considered as single parent households, though they may occasionally receive remittances from absent males. In one third of these households, the household head is the only adult (18 years and older) in the household. The so-called 'granny households', *i.e.* the female household head is the grandmother rather than the mother of the children in her care, made up 17 percent of the household head. The reasons why female-headed households have a high probability of being stuck in poverty are numerous. The most obvious reason is that many female-headed households rely only on the income of the mother, or worse, she may not have an income at all. She may rely mainly on child support grants from government, or on remittances from relatives or gifts from benefactors. As likely, the household head does

have some form of employment, but there is a good chance that it will be self-employment or employment in the secondary labour market with a low level of remuneration and under poor conditions (Aliber, 2003).

- ***People with Disabilities:*** According to the 1996 census, 2,7 million people in South Africa have disabilities (StatsSA, 1999). Of these 2,7 million people, 1,6 million are adults between the ages of 20 and 65 years old. Disabilities can reduce one's chances of obtaining a job, can impede one's pursuit of self-employment in the informal sector, and can impose medical and other costs that one would not otherwise have to bear. Of course, being physically challenged does not imply that no other household members are earning decent incomes. Surprisingly, data from the 1996 census show that there is no strong link between disabilities and unemployment. The unemployment rate for Africans with disabilities, for example, is 45,3 percent, which is only marginally above the unemployment rate (broad definition) for Africans for that year of 42,5 percent. Likewise, for Coloured people with disabilities, the unemployment rate is 26,7 percent, versus 20,9 percent for all Coloured people. Moreover, the occupational profiles of the physically challenged are not very different from those for the general population. Presumably, in a tighter labour market the discrepancies would be starker.
- ***The Elderly:*** Elderly people are of specific concern in terms of poverty, especially if, like the physically challenged, they must fend entirely for themselves and for dependants. Many elderly people who do not have others on whom to rely on for support do receive old-age grants, but it is clear from Roberts (2001) that these grants are in no way

sufficient to keep a household out of poverty. In other words, the widespread allocation of old-age grants is not an indication that there are no poor households effectively headed by elderly people.

- ***Retrenched Farm Workers:*** Agricultural employment peaked around 1968-1970 at over 1.6 million workers, of whom 99 percent were African, Coloured, or Indian (Department of Agriculture, 2000). It is not possible to say how many of these were regular, and how many were seasonal or casual workers. Very likely around 8-15 percent were casual or seasonal, and the rest regular. In 2000, the total number of regular farm workers was around 580 000, implying a decline over the past three decades of some 860 000 jobs, of which the majority were almost certainly through retrenchments. Bekker *et al.* (1992) argued that former farm workers are particularly susceptible to social exclusion. The reason is that, having been retrenched, farm workers are usually evicted from the farms where they have resided. Many retrenched farm workers were in fact born and raised on the farm from which they are eventually ejected, thus they have no 'roots' elsewhere to which to return. According to Aliber (2003), these types of evictions should have ended in principle with the Extension of Security of Tenure Act Bill of 1997, but in practice, this has often not been the case. Retrenched farm workers are thus, severed from their existing social network – e.g. other farm workers in the immediate area – and forced to settle, typically with little or no savings or other capital, in townships, squatter settlements, or communal areas. Some attempt to switch to seasonal agricultural employment, as other employment prospects may be even poorer, given the non-transferability of farm workers' skills.

- ***Cross-border Migrants:*** Refugees, asylum-seekers, and undocumented migrants face particular kinds of exclusion and deprivation in South Africa. The vast majority of these people come to South Africa from neighbouring African states in search of economic opportunity. Some migrants indeed manage to improve their circumstances significantly compared to their country of origin, particularly those with entrepreneurial skills (CASE, 1998). The number of undocumented migrants is by definition difficult to gauge, estimates range from 250,000 to eight million (CASE, 1998). If the trend observed among visa overstayers is any indication, of whom there were an estimated 800 000 in 2000, then 70 percent to 80 percent have probably arrived in South Africa since 1994.
- ***The 'Street Homeless':*** “The homeless” is an amorphous category. This is particularly so in South Africa, because there exist hundreds of thousands of people living in informal squatter settlements who do have homes, but whose homes are obviously very unsatisfactory. Many are former farm workers, as discussed above. Many are wage earners in urban areas who cannot afford decent housing there, and for whom the costs of commuting into and out of the city are a significant burden. Their solution may be to pay rent in overcrowded flats in urban slums (Aliber, 2003). Those homeless living 'on the street' would appear to be a somewhat different category, though there may not be a clear line separating the two. These people, who are often referred to as the 'street homeless', are typically lone individuals or children rather than family units, and have severed or lost ties with social networks they may once have had.

- ***AIDS Orphans and Households with AIDS Sufferers:*** AIDS orphans are those defined by UNAIDS as children under the age of 15 who have lost their mother or both parents to AIDS. The number of AIDS orphans is set to rise as South Africa's high HIV prevalence rate among adults translates into a higher prevalence of AIDS and then AIDS deaths. UNAIDS estimates that at the end of 1999 there were around 371,000 living AIDS orphans in South Africa (UNAIDS, 1999), while 50,000 AIDS orphans have already died (presumably from AIDS but also other causes, as HIV-negative AIDS orphans have a higher mortality rate than non-orphans). The Metropolitan Life model estimates that by 2005, there will be 920,000 AIDS orphans in South Africa, and by 2010, there will be roughly two million (Whiteside and Sunter, 2000). By contrast, according to the 1996 census, the total number of motherless orphans 14 years and younger in the country was about 400,000. This figure is presumably inclusive of AIDS orphans of that time, but at any rate, the number of AIDS orphans will soon account for a very large increase in the total number of orphans in the country. Left untreated, adults who are infected with HIV develop symptoms of AIDS within 6 to 8 years, and most die within 10 years. Treating HIV to delay the onset of AIDS and opportunistic infections means a longer life, but in the absence of government support, this will generally be affordable only to those who are relatively wealthy. For everyone else, the economic effects of the infection will mainly occur when one develops AIDS, from which point the economic effects on the AIDS sufferer and his or her family can be devastating.



## **2.5 Measuring Poverty**

If measurement is the operationalisation of definitions, it follows that different definitions are measured by different measures. The measurement and analysis of poverty is important for several reasons among which are cognitive, that is to know what the situation is, and for analytical purposes, to understand the determining factors of this situation. Poverty measurement and analysis is crucial also for policymaking purposes in order to design interventions best adapted to the issues, for monitoring and evaluation purposes to assess the effectiveness of current policies and to determine whether there is appreciable change in the situation.

One approach to measuring poverty is to define a minimally adequate standard of living in terms of a set of “basic needs” such as reasonably good health, adequate calorie intake, access to safe drinking water, enough schooling to attain functional literacy. One may even include non-material components such as human rights and democratic political process.

This multidimensional approach, while intuitively appealing, raises as many questions as it answers because many people have some of their minimal needs met, but not others, and it is not clear whether such people should be classified as poor. While one might argue that any person who does not attain the minimal level in all dimensions is poor, real-life situations quickly complicate this approach. For example, some people with high incomes may suffer from poor health, but one would not usually classify them as poor. Similarly, in some low-income families many children are clearly malnourished while other low-income families have well nourished children. In spite of this, in poverty analysis, certain basic steps have become quite standard (Hentschel and Lanjouw, 1996). First, households or individuals are ranked based on a welfare

indicator – usually income or expenditures. Second, a poverty line is selected which distinguishes the poor from the non-poor. The poor, identified in this way, are then finally examined closely through the construction of a poverty profile.

Most empirical work on the distribution of welfare is done using either expenditure or income data recorded in household surveys (Glewwe, 1988). This is intuitively appealing and it is not necessary to review here the theoretical framework that allows one to draw the link between the income/expenditure distribution and the welfare distribution.

The ‘standard of living’ concept can be either welfarist or non-welfarist. The welfarist approach typically emphasises expenditure on all goods and services consumed, including consumption of home production valued at appropriate prices. By contrast, a common non-welfarist approach emphasises specific commodity forms of deprivation (Ravallion, 1992), usually inadequate food consumption.

Either way, the standard of living of a household is normally taken to depend only on the consumption of market goods. Although the limitations of this approach are well-documented (Deaton and Muelbauer, 1980), the tasks in valuing access to public goods are enormous. It is therefore expedient for pragmatic reasons that current consumption or current income is used as the indicator of well-being. In this study, poverty was measured along only one dimension, the per capita consumption expenditure.

Another methodological issue with respect to poverty measurement is how to account for the fact that some poor households have consumption levels only slightly below the poverty line, while others have much lower levels of consumption. The most common poverty indicator is the headcount measure, which measures the proportion of individuals living in households whose consumption levels falls below poverty line. This measure has the disadvantage of ignoring how far below the poverty line households fall. For example, if poor households became poorer over time while non-poor households remain non-poor, the headcount measure would not change, although intuitively one would think that poverty had worsened.

One measure of poverty that overcomes the deficiency of the headcount ratio is the poverty gap<sup>3</sup> measure. This measure of poverty will show an increase in poverty if poor households become poorer while non-poor households remained non-poor. Yet even this poverty indicator has been criticised because it does not account for inequality in the gaps. The most common way to overcome this deficiency is to use the “squared poverty gap”, which simply squares the poverty gaps (and divides them by the square of the poverty line). In practice, these three indicators of poverty give similar results. In this study, all the three measures were used.

Of all the poverty measure indices developed (Sen, 1976; Foster, 1984; Foster and Shorrocks, 1988; Foster *et al.* 1984), only the Foster-Greer-Thorbecke (FGT) class of poverty measures is found to meet the basic axiomatic requirements, mainly, consistency and additive decomposability (see Foster *et al.* 1984). In addition, the poverty orderings correspond accurately to the  $\alpha$  degree stochastic dominance of partial orderings. For the three members of

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<sup>3</sup> Defined as the average difference *i.e.* gap between the poverty line and the (per adult equivalent) consumption level of poor households divided by the poverty line.

the class  $P_\alpha$  measures (Foster and Shorrocks, 1988), interesting welfare interpretations of the poverty orderings can be generated.

The poverty measure itself, according to Coudouel *et al.* (2002), is a statistical function that translates into one aggregate number for the population as a whole or a population subgroup the comparison of the indicator of household well-being and the chosen poverty line. Hence, the three measures of the Foster-Greer-Thorbecke (FGT) class of poverty described below are most commonly used among many alternative measures that exist.

- *Incidence of poverty (headcount index)*: This is the percentage of the population whose income or consumption is below the poverty line, that is, the share of the population that cannot afford to buy a basic basket of goods. Similarly, for non-monetary indicators the incidence of poverty measures the share of the population that does not reach the defined threshold (for instance, the percentage of the population with less than three years of education).
- *Depth of poverty (poverty gap)*: This provides information regarding how far households are from the poverty line. This measure captures the mean aggregate income or consumption deficit compared to the poverty line across the whole population. It is obtained by adding up all the deficits of the poor and dividing the total by the population. In other words, it estimates the total resources needed to bring all the poor to the level of the poverty line (divided by the number of individuals in the population). For non-monetary indicators this measure can also be used, if the measure of the distance is

meaningful. The poverty gap in education could be the number of years of education needed or required to reach a defined threshold. The limitation of this measure is that it is not quantifiable in some cases, for example, when binary indicators such as literacy are used, in which case only the concept of the headcount can be used. The poverty gap can be used as a measure of the minimum amount of resources necessary to eradicate poverty. This is the amount under perfect targeting (that is, each poor person getting exactly the amount he/she needs to be lifted out of poverty) that would be needed to be transfer to the poor in order to bring them all out of poverty.

- *Poverty severity (squared poverty gap)*. This takes into account both the distance separating the poor from the poverty line (the poverty gap), and the inequality among the poor. That is, a higher weight is placed on those households further away from the poverty line.

For the poverty gap measure, limitations apply for some of the non-monetary indicators. In the case of the headcount index, all of these measures can be calculated on a household basis, that is, by assessing the share of households that are below the poverty line. However, it might be better in order to take into account the number of individuals within each household, to estimate the measures on a population basis, *i.e.* in terms of individuals.

Important complements of the incidence of poverty are the measures of depth and severity of poverty. It might happen that some groups have a high poverty incidence but low poverty gap, especially when large members of the population are just below the poverty line. While other

groups have a low poverty incidence but a high poverty gap for those who are poor, when relatively few members are below the poverty line but with extremely low levels of consumption or income.

Mostly important for the evaluation of programmes and policies is the measure of depth and severity of poverty. A program might be very effective at reducing the incidence of poverty, that is, the number of poor but might do so only by lifting those who were closest to the poverty line out of poverty (low impact on the poverty gap). Other interventions might better deal with the situation of the very poor but have a low impact on the overall incidence if it only brings the very poor closer but not above to the poverty line.

## **2.6 Consumption as a Measure of Poverty**

This approach, as an indicator of poverty and welfare, has gained wide popularity in the last two decades (see Timmer *et al.*, 1983; Nicholson, 1987; Annad and Harris, 1990). Empirical findings on nutritional deprivation and hunger have created the belief that households would typically give priority to food in its consumption allocation. Hence, the expenditure on food may be a better guide to a households' overall economic solvency and opulence than more variable indicators.

According to Deaton and Case (1988), in order to measure material welfare it is necessary to measure what and how much individuals consume. Accordingly, a person's standard of living is taken to depend on current consumption of privately supplied goods (e.g. crops) from own production and the imputed rents from owner-occupied housing. The conventional approach of

ignoring the consumption of public goods and the value of leisure time (Ravallion, 1992), was followed in this dissertation.

Empirical work on the distribution of welfare is sometimes undertaken using income data (Glewwe, 1988). There are several conceptual and pragmatic reasons for preferring private consumption expenditure to income as a measure of well-being. The most important of these reasons is that expenditure is usually more reliably reported and more stable than income, especially among the poor (Ravallion, 1992).

The choice of consumption based rather than an income-based measure of household welfare is motivated by the fact that income can be viewed as a measure of welfare opportunity or a measure of potential welfare. On the other hand, consumption can be interpreted as a realised welfare or a measure of welfare achievement (Hentschel and Lanjouw, 1996; Atkinson, 1989). Since realised rather than potential welfare is concerned, consumption is arguably a more appropriate indicator.

Coudouel *et al.* (2002) posited that consumption would be a better (or analysts preferred) monetary indicator of poverty (given that the information obtained from a household survey is detailed enough on consumption) for the following reasons:

- *Consumption is a better outcome indicator than income.* It is more closely related to a person's well-being in the sense defined above, that is, of having enough to meet current basic needs is his actual consumption. On the other hand, one of the elements that will

allow consumption of goods is income; others include questions of access and availability.

- *Consumption may be better measured than income.* In poor agrarian economies, according to the harvest cycle, incomes for rural households may fluctuate during the year. Income flows also may be erratic in urban economies with large informal sectors. This makes it potentially difficult for households to recall their income correctly, as such; the information on income derived from the household survey could be of low quality. An additional difficulty in estimating income in agrarian economies consists in excluding the inputs purchased for agricultural production from the farmer's revenues. Finally, if households consume their own production or exchange it for other goods, large shares of these incomes are not monetized, and it might be difficult to price these. Difficulties also exist in estimating consumption, but it could be more reliable if the consumption component in the household survey is well structured.
- *Consumption may be a better reflection of a household's actual standard of living and its ability to meet basic needs.* Consumption expenditure is not only a reflection of the goods and services that a household can purchase based on its current income, but also on its ability to access credit markets or household savings at times when current income is low or even negative, perhaps due to seasonal variation, harvest failure, or other conditions that cause income to fluctuate widely.



Some advantages of the use of income however are cited by Coudouel *et al.* (2002). According to them, a distinction can be made between sources of income, if poverty is measured by income. When such distinctions are made, income becomes easily compared with data from other sources, such as wages, this provides a check on the quality of data in the household survey. Finally, consumption or expenditure data might not be collected for some surveys. It is usually important to combine information provided at the household or individual level for many sources of income or consumption in the survey whether one chooses income or consumption.

In this dissertation, the international norm of using material well-being or “standard of living” as the welfare indicator (Hentschel and Lanjouw, 1996) was conformed to and the lead of World Bank in defining poverty as “the inability to attain a minimal standard of living” measured in terms of basic consumption needs (World Bank, 1990) was also followed.

## **2.7 Poverty Line**

An acceptable poverty line is the second condition next to the derivation of real household per capita expenditures required to estimate poverty and welfare indicators. A poverty line is ideally a level of income or expenditures required to satisfy a minimum level of consumption basket of goods and services that is thought an individual should be able to purchase to be considered non-poor. A poverty line is country specific and this level of income or expenditure varies from one country to another. Irrespective of countries, households or individuals with per capita income falling below this line are considered poor, however; and households with per capita income above this line are considered non-poor.

The most commonly used approach to setting poverty lines is the budget standards or minimum needs approach. This involves the determination of minimum quantity of various needs or its money equivalents. This is often referred to as the “cost of basic needs” approach (Ravallion and Lokshin, 2006).

Since poverty lines are cut-off points separating the poor and non-poor, there are two main ways of setting poverty lines, such as the relative and absolute poverty lines. Relative poverty line is defined as a proportion of sufficient statistics; generally either the mean or median of total adjusted aggregate income. Hence, this line is variable over time and across space. In absolute poverty line, the poverty threshold is established as the income level at which households are able to purchase essential food and non-food items, including social services. This poverty line is fixed in terms of living standards indicator, and over the entire domain of poverty comparison (Ravallion, 1998).

## **2.8 Overview of Analyses of Poverty in South Africa**

There have been peculiar difficulties pertaining to comparative data in South Africa, due to the fact that, prior to 1994 a number of regions in South Africa – largely the poorest areas – were classified as ‘independent homelands’ and therefore excluded from the country’s main dataset. Consequently, this has, as expected, led to the unsettled debate on whether poverty has increased or not in South Africa since 1994 in particular. Researchers and analysts are thus faced with a dearth of data and methodological inadequacies, although attempts were made to get an accurate picture of the transformation of the South African society, as it is possible. The overview in this section will focus on the event of the 1990’s onwards.

### 2.8.1 Early 1990s

One of earlier contributions to the understanding of poverty in post-apartheid South African society was the Poverty and Inequality in South Africa Report (May 1998). It has been argued that, compared to other post-1994 studies of poverty, May (1998) examined the poverty issue in a comprehensive manner. Prior to that, there was a report titled Key Indicators of Poverty in South Africa (Ministry in the Office of the President, 1994). The Key Indicators of Poverty in South Africa study estimated the extent of poverty in South Africa in the early 1990s (see for example Table 2.1).

**Table 2.1 Comparison of Selected Poverty lines for South Africa in 1993**

| <b>Types of Poverty Lines</b>                                                                                                                           | <b>Rand Amount/month Cut-off</b> | <b>Percentage of Population below the poverty line</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------|
| <b>1. Population cut-offs at the:</b>                                                                                                                   |                                  |                                                        |
| 40 <sup>th</sup> percentile of household (in adult equivalent)                                                                                          | 301,1                            | 52,8                                                   |
| 20 <sup>th</sup> percentile of household (in adult equivalent)                                                                                          | 177,6                            | 28,8                                                   |
| <b>2. Minimum per capita adult caloric intake (at 2 000 Kcal per day)</b>                                                                               | 143,2                            | 39,3                                                   |
| <b>3. Minimum per capita adult-equivalent caloric intake (at 2 500 Kcal per day)</b>                                                                    | 185,5                            | 42,3                                                   |
| <b>4. Minimum and supplemental living levels per capita set by the Bureau of Market Research, (UNISA):</b>                                              |                                  |                                                        |
| Supplemental Living Level (SLL)                                                                                                                         | 220,1                            | 56,7                                                   |
| Minimum Living Level (MLL)                                                                                                                              | 164,2                            | 44,7                                                   |
| <b>5. Per adult equivalent Household subsistence Level (HSL) set by the Institute of Planning Research (Nelson Mandela Metropolitan University, PE)</b> | 251,1                            | 36,2                                                   |

There are other reports and documents on poverty in South Africa, which have been central in directing policies in government. Everatt (2003) contends that the most common feature of these reports and documents is the inconsistency in the choice of poverty definition and measurement reflecting the ‘many meanings of poverty within government’. Among the earlier reports, that presents a relatively more comprehensive approach to understanding poverty in South Africa is that of *Measuring Poverty in South Africa* (StatsSA, 2000).

Before the Statistics South Africa report, there was the Committee of Inquiry Report into a Comprehensive System of Social Security for South Africa (Taylor Commission, 2002), which approached poverty dynamics in South Africa from a legal and constitutional perspective, using the constitutional framework as the basis for understanding poverty and state intervention through social protection measures. Emphasis on socio-economic rights was clearly articulated and its importance when making policies is persuasive.

### **2.8.2 The late 1990s and the recent Past**

There has been a growing body of research on poverty in South Africa showing levels of poverty and trends over time and more recently examining poverty dynamics in specific localities. Among these studies are those of Whiteford and Posel (1995), Woolard and Leibbrandt (2001), Budlender (1999), May *et al.*, (1999), Roberts (2001), Bhorat *et al.*, (2001), Meth and Dias (2004), Robeyns (2005), Hoogeveen and Özler (2006), Van der Berg *et al.*, (2005; 2007), Bhorat *et al.*, (2006; 2008) among others. Table 2.2 shows some of the recent measures of poverty used by these researchers.

As reported in South Africa's Millennium Development Goals Country Report (2006), in terms of money-metric measures, according to Statistics South Africa, using national estimates of poverty in South Africa in 2000, 11 percent of people were living on less than US\$1 a day and 34 percent were living on less than US\$ 2 a day.

**Table 2.2 Recent Measures of Poverty in South Africa**

| <b>Types of Poverty Lines</b>                                                                                                                         | <b>Threshold in 2000 Rands</b> | <b>Percentage of individuals below the poverty line (2000 IES)</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------|
| <b>Poverty line set at per capita expenditure of the 40<sup>th</sup> percentile of household.</b>                                                     | R346 per capita                | 54,9                                                               |
| <b>StatsSA (as reported by Hoogeveen and Özler) lower bound</b>                                                                                       | R322 per capita                | 52,6                                                               |
| <b>StatsSA (as reported by Hoogeveen and Özler) upper bound</b>                                                                                       | R593 per capita                | 70,4                                                               |
| <b>Dollar a day – International poverty line of US\$370 (1985 prices) per capita per annum</b>                                                        | R81 per capita                 | 8,1                                                                |
| <b>Two dollar a day – International poverty line of US\$370 (1985 prices) per capita per annum</b>                                                    | R162 per capita                | 27,0                                                               |
| <b>Poverty Line implied by the Old Age Pension means test for married person, assuming a household of 5 persons and no non-elderly income earners</b> | R454 per capita                | 63,4                                                               |
| <b>Indigence line of R800 per household per month (in 2006 prices)</b>                                                                                | R573 per household             | 11,7                                                               |
| <b>Indigence line of R2400 per household per month (in 2006 prices)</b>                                                                               | R1720 per household            | 55,1                                                               |

Recently, there have been studies that show that poverty is declining in South Africa, although this is contestable. For instance, Bhorat *et al.*, (2006) in analysing welfare shifts in the post-apartheid period, showed that access to formal housing grew by 42 percent and 34 percent for

deciles 1 and 2 between 1993 and 2004, and 21 percent and 16 percent for deciles 3 and 4. Access to piped-water increased by 187 percent in decile 1 over this period, while the growth was 31 percent in the 4th decile. Access to electricity for lighting for the poorest households – those in decile 1 – grew by an extraordinary 578 percent. It seems obvious from their study that the delivery of basic services has been strongly pro-poor. Bhorat *et al.*, (2006) also showed in their study that, while in 1993, 40 percent of all South African households were asset- (and service-) poor, by 2004 this figure had been almost halved to 22 percent.

A study by Van der Berg *et al.*, (2005) showed a decline in poverty in South Africa. The study showed that poverty had stabilised since the political transition and decreased since 2000. They used a poverty line set at R250 household income per month or R3 000 per year in 2000 Rands. They concluded that, while the proportion of people living in poverty increased during 1993-2000, in more recent years, the proportion of poor people appears to have declined substantially – 18.5 million in 2000 to 15.4 million in 2004. Over the same period, the number of non-poor rose from 26.2 million in 2000 to 31 million in 2004.

Van der Berg *et al.*, (2005) also showed that per capita real incomes of individuals comprising the poorest two population quintiles rose by more than 30 percent during 2000-2004. In relation to this, they concluded that for all poverty lines ranging from R2 000 to R4 000 per capita income per annum, poverty decreased since about 2002 after a modest rise at the end of the previous decade. They argue that the impact of the recent expansion of social grants on the poor was likely to have been major, considering that real social assistance transfers from government

increased by some R22 billion during 2003-5 (in 2000 Rands), an amount well in excess of R1 000 per poor person.

Lately, Bhorat *et al.*, (2008), using poverty lines of R174 per person per month and of R322 per person per month, in 2000 prices concluded that during 1995-2005 both absolute and relative poverty have reduced. They also showed that both poverty lines and the poverty gap index declined. In particular, at R322 per person per month, money-metric poverty declined from 53 percent in 1995 to 48 percent in 2005. At R174 per person per month, poverty declined from approximately 31 percent to 23 percent. Linked to this are improvements in job creation and social transfers to the most vulnerable. For instance, Van der Berg *et al.*, (2007: 11) using the Labour Force Survey show that ‘approximately 1,7 million jobs were created between 1995 and 2002 and 1,2 million between 2002 and 2006’. In relation to social transfers, the government records, according to Gumude (2008), suggested that almost 12,5 million South Africans received cash transfers, this excludes the social wage in terms of free basic water and electricity, subsidised housing and so on.

## **2.9 Conclusion**

Poverty is one of the most important developmental challenges facing South Africa. Since the advent of democratic governance in 1994, considerable efforts have been undertaken to address poverty and to overcome inequality, but rather than abating, the incidence of poverty has continued to be on the increase, thus many households have sunk deeper into poverty.

The poverty being experienced in South Africa is pervasive and persistent as the situation is reaching an alarming rate. Despite the recognition of the importance of the rural dwellers to the national economy, they have continually been left in a counterproductive state. Rural people are not only isolated from economic opportunities like improved marketing facilities (storage, transportation and processing) for their product, they also tend to have less access to social services such as health, sanitation, education and infrastructural facilities like electricity and safe water supplies. The report of the South African Participatory Poverty Assessment (SA-PPA) showed deteriorating living and environmental conditions for the poor rural households. The food intake of the surveyed rural households indicated an extreme poverty situation, as high calorie food items such as “pap” (maize-meal) dominate the household’s nutritional types. There is generally low and inadequate provision of basic infrastructure such as energy, potable water, housing and transport in rural areas. In addition, the rural areas have restricted access to basic education and health facilities because of long distance to traverse to their locations in adjoining towns and inability to afford fees charged for them.

The very first step at helping these poor households out of poverty is to understand the nature and extent of their poverty. Since the ultimate goal of development is to improve the quality of life of people, developing countries such as South Africa need to identify and implement poverty alleviating strategies and to assess the extent and depth of poverty. This is because, if effective policies to reduce households’ poverty are to be formulated and successively, implemented, more knowledge about the characteristics and determinants of poverty is crucial (Glewwe and Van der Gang, 1988; World Bank, 1990)



Microfinance has been enthusiastically championed as a promising tool for poverty alleviation and development all over the world. The next chapter explores the issue of microfinance in the South African context and the role micro-credit as an intervention for poverty alleviation.

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# CHAPTER 3

## MICROFINANCE AND POVERTY ALLEVIATION

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### 3.1 Introduction

Microfinance programmes have been embraced all over the world, especially in developing countries as an important strategy for poverty alleviation. It has been demonstrated that the poverty alleviation impacts of microfinance services is evident in reaching the poor, lifting their economic well-being as well as empowering them, especially women (Ashe, 2000; Fisher and Sriram, 2002; Robinson, 2002; Simanowitz and Walter, 2002; Snodgrass and Sebstad, 2002; Khandker, 2005). Over the last decade, there has been substantial expansion both in terms of the number of institutions and in terms of the size of institutions in the field of microfinance.

Microfinance, according to Kosiura (2001), is the provision of financial services to the poor who do not have access to capital and financial services. Latifee (2003) defined microcredit as programmes that are poverty focused, aimed at providing financial and business services to the very poor persons for generation of self-employment and income. A more precise definition describes microfinance as the provision of appropriate financial services to significant numbers of low-income, economically active people with an end objective to alleviate poverty (Ledgerwood, 1999). The financial services generally include one or any combination of the following: lending, savings, and payment services. Collectively, microfinance includes loans for businesses and personal use, savings and other deposit products or services a bank can offer to this market segment.

During the microcredit summit of 1997, the definition of microcredit that was adopted saw microcredit as programmes that extend small loans to very poor people for self-employment projects that generate income, allowing them to care for themselves and their families (UN, 1995). Definitions differ, of course, from country to country. Some of the defining criteria used include:

- i) **The loan size** - loans are micro, or very small.
- ii) **Target User** - are micro entrepreneurs and low-income households.
- iii) **Utilization** - the use of funds is for income generation, and enterprise development, and for community use (health/education) etc.
- iv) **Terms and conditions** - most terms and conditions for microcredit loans are flexible and easy to understand, and suited to the local conditions of the community.

The broader term microfinance grew out of microcredit, or loans directed to low-income and disadvantaged people who cannot get these services from commercial banks. The microcredit programmes were initiated in the 1970s in Bangladesh and in Latin America, with the objective of providing the poor people with credit without collateral, alleviating poverty and unleashing human creativity and endeavour of poor people.

It is group-based lending, which focused on small business lending for income-generating activities. Grameen Bank and SEWA Bank are two of the best-known microfinance organizations. Because of the success of these organizations, microcredit was incorporated into

many development programmes as a strategy for poverty alleviation. Development institutions incorporated some level of microcredit or banking services into their programmes (Rutherford 1998).

This chapter explores a range of issues around microfinance and poverty alleviation. In section 2, the different paradigms of microfinance are presented, while section 3, the state of the financial sector in South Africa is presented. In Section 4, households' financial services accessibility in South Africa is explored while section 5 reviews the major providers of financial services. Empirical evidence of the role of microcredit programmes in alleviating poverty of borrowing households are presented in the last section.

### **3.2 Paradigms of Microfinance**

Microfinance Institutions (MFIs) include all types of entities that provide microfinance services. MFIs range from non-governmental organizations (NGOs) to regulated financial institutions such as non-bank financial institutions, commercial banks, credit unions and state banks (Christen and Drake, 2001). MFIs are generally guided and defined by two competing paradigms; these are financial self-sustainability and poverty alleviation.<sup>4</sup>

The poverty alleviation approach (also referred to the welfarist approach) claims that the overall goals of microfinance should be poverty reduction and empowerment. Such MFIs are to a certain extent unequivocal in their focus on immediately improving the well-being of their clients. According to Woller *et al.* (2000), they have the objective of making their clients/participants

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<sup>4</sup> Some researchers propose the third one: the *feminist empowerment* paradigm (e.g., Mayoux, 1998). For the purpose of this study, this paradigm is integrated into the *poverty alleviation* paradigm).

self-employed by targeting the poorer among the economically active poor, especially women, who are believed to be able to use the modest increases in their income and savings to empower themselves thereby improving their conditions of life and that of their children.

Feminist empowerment authors also exist within this paradigm; they emphasise women's economic, social and political empowerment. Although the role of microfinance as an important way to respond to poor informal sector women workers' immediate practical needs is acknowledged, it is seen as only part of a strategy for wider social and political empowerment of women which, in turn, is seen as crucial to sustained increases in income (Mayoux, 1998). Overall, those who follow the poverty alleviation approach are only interested in discussing the sustainability of organisations that target poverty. This view dominates among NGOs. Since their overall goal is poverty reduction, complementary services are often needed and integrated approaches are commonly applied. Some donor funding and subsidies may be needed because the availability of funds is the most binding constraint in expanding outreach and the supply of financial services to the poor.

The financial self-sustainability approach (also referred to as the "profit" or financial systems or the institutionalist approach) largely sees the goal of microfinance as the provision of financial services to low-income people, but not to the poorest of the poor (Gulli, 1998). The services should not target exclusively the poorest, but the underserved, in general. According to Otero and Rhyne (1994), financial self-sufficiency is achieved when clients' savings are used fully to finance the program and capital is raised from formal financial institutions at commercial rates. The real cost of funds, loan loss reserves, operations, inflation and profits are covered by fees

and interest income. The ultimate aim therefore, according to Mayoux, (1998), is programmes, which are profitable and fully self-supporting in competition with other private sector banking institutions, and rather than relying on funds from development agencies able to raise capital from international financial markets. Generally, those who deliver microfinance services as regulated financial institutions, such as commercial banks, fall under this approach. For microfinance institutions to achieve exponential growth, financial self-sustainability (profit) is seen as a necessary precondition. Without achieving financial sustainability, no amount of subsidy is adequate to maintain the enduring access of a large number of very poor clients to basic financial services (Christen and Drake 2001).

As described above, the microfinance community is divided along two paradigms, *i.e.* between those who argue poverty alleviation is primary the goal for MFIs and those who argue that the priority is to achieve financial self-sustainability. However, a third paradigm has recently emerged. This paradigm promotes a “middle ground” or balancing the goals of poverty alleviation and financial self-sustainability (Christen, *et al.* 1995; Woller *et al.* 2000). They noted that if service delivery methods that meet client needs at an affordable rate are developed by institutions, then financial viability as well as poverty outreach could be achieved. This is eventually dependent on how interest rates are set; it has been revealed that charging full interest rates does not reduce client demand. Using a mathematical framework of maximization and constraints to determine the occurrence of tradeoffs, Rhyne (1998) showed that outreach or scale is only an objective and it is only through financial sustainability it can be achieved; and that the debate is not “either-or” but about degrees of emphasis and about what happens in the event of trade-offs.

### **3.3 The State of the Financial Sector in South Africa**

The South African financial sector presents an ideal case study in financial sector development. The country's extreme income inequality is one of the most important variables confronting South African microfinance institutions. With Gross Domestic Product per capita around \$13 300, South Africa is in the middle-income band globally, but this conceals vast variation in income distribution. South Africa's Gini coefficient is about 0,65 which makes it one of the most unequal societies in the world (World Bank, 2000).

According to Baumann (2004), the dualism of the South African economy is the chief cause and manifestation of its radical income inequality. There is coexistence of an economically 'advanced' and globally integrated minority, black and white, often referred to as the 'formal' sector, with a dependent and a marginalised majority, almost entirely black, known as the 'informal' sector. While the former enjoys a human development index comparable to Southern Europe, the informal sector lives in a level comparable to that in South Asia.

There are both historical and structural perspectives to this dualism. Unlike peasantries elsewhere in Africa, South Africa's rural poor lack access to basic means of production, such as land, because of unsettled issues of widespread settler dispossession. The rural poor live in crowded rural 'villages' squeezed between commercial farmland and tourist-oriented game reserves. South Africa's manufacturing and retail sectors, the most advanced in Africa, have also contributed by relegating small-scale trading and manufacturing to the margins in the urban areas, thereby severely constraining the opportunities for self-employment in the urban areas (Baumann, 2004).

For South Africa's poor, their survival is largely dependent on the output of the formal economy because of their lack of access to productive resources. The things that sustain and enhance life therefore are only available as commodities. The poor, however, are structurally excluded from access to the cash required to obtain these. One upshot of this state of affairs is poor household's reliance on state transfer payments, such as pension, disability and childcare grants, and inter- and intra- household transfers. This is especially patent in rural areas. Another outcome is the high incidence of predatory economic crime (Baumann, 2004).

Before 1994, the apartheid government supported financial sector policies that resulted in gross financial sector inefficiencies, developed within the context of inward looking policies designed to protect and benefit only the few. The financial sector was also highly concentrated on the wealthier individuals with limited competition allowed (Kirsten, 2006). Since the advent of democratic governance, however, the South African government has strived hard to promote the deepening of the financial market and the provision of a wide range of financial services to previously disadvantaged South Africans. This has resulted in the improvement of the Gini coefficient after the democratic elections of 1994. However, despite this decline, there has been a steep rise in unemployment and poorly paid employment, which has been motivated by industrial and trade policies intended to improve global competitiveness, and a macroeconomic policy enhancing low inflation and a small government deficit in order to attract foreign capital (Baumann, 2004).

The provision of financial services to the rural households in South Africa therefore, has to be seen against the background of the past government's intervention in the economy. This was



characterised by distorted financial policies and institutional impediments that have resulted in the dualism in the rural and broader financial sector, with only a few South Africans enjoying a highly modern and sophisticated financial system that serves to provide a full range of financial services at the expense of the majority (Mohane *et al.* 2000).

One of the major issues in South Africa has been the lack of formal financial services including savings, loans, and insurance products to the poor. Due to the large number of people employed in the informal sector, there has been a heavy focus on microfinance. In South Africa, the responsibility for job creation has moved to individuals, by offering loans to individuals who have few options for higher paying, more sustainable formal sector employment. The government has shifted the responsibility to individuals instead of creating more jobs in South Africa. This came into full force during a neo-liberal policy change of the growth, employment and redistribution (GEAR) policy. The push for micro lending in many developing countries has just moved the focus to individuals. With a microloan, it is expected that these informal workers can make themselves economically productive and earn an income. Nevertheless, many of the structural problems are still in place in South Africa, like poor education systems and weak markets.

South Africa has a sophisticated banking sector, but many people are denied access to formal banking services. Over 53 percent of the adult populations are excluded from formal banking services, which is an extremely high proportion compared to countries with similar banking systems. The country has a much larger banking system than other developing countries, but services have only been concentrated in the urban areas of the country, with limited participation

and enormous demand for financial services in the rural areas. One of the major causes is the high level of poverty and unemployment in South Africa, especially in the rural areas, which is one reason that many adults do not have bank accounts. One-third of the population that do not have bank accounts are the economically active individuals, meaning they earn an income and do not use formal banking products (savings accounts) to store and access their money. These “unbankable” are low-income individuals, 99 percent of who are black, and still disadvantaged in the post-apartheid era (FinScope, 2006; Kirsten, 2006).

Historically, the “Big Four”<sup>5</sup> banks in South Africa have taken a risk-averse model of lending and have not reached out to this group. Like most commercial banks, South African commercial financial institutions have seen the poor as unprofitable and too risky (Dallimore, 2003). Therefore, state development banks and non-commercial financial institutions have tried to supply financial services to this group, but have not fully met the low-income individuals banking needs. Recently under political pressure, new policies have been enacted providing incentives for the commercial banks to market products and services to the unbanked population in South Africa. For example, the Dedicated and Cooperatives Bank Bill is aimed at making banking services available in areas where (and to consumers to whom) such services have thus far not been readily available. In addition, to create an enabling environment for companies interested in entering the banking system by lowering entry requirements and prudential regulations as currently prescribed by the Banks Act (Mashiya, 2004). Regulation under the National Credit Bill Act of 2006, which specifies maximum interest rates and transaction fees that can be charged on credit arrangement and loans, and the Financial Sector Charter, allows for the creation of the Mzansi account. Unfortunately, the goals of the new legislation have not been

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<sup>5</sup> ABSA, First National Bank, Nedbank and Standard Bank.

fully realized and growth in technological advances like ATMS and cell-phone banking may not be the best way to meet the very poor and unbankable population.

Before 1994, the financial sector was concentrated highly on the richer individuals and there was limited competition in the market (Kirsten, 2006). This resulted in very limited opportunities for low-income South Africans to use banking services. Banks have limited access to the poor in terms of cost of products, location of services and types of products offered. For the poor, bank accounts are very expensive (Baumann, 2004). In addition, banks have historically been too distant for the large proportion of South Africa's population who live in semi-urban or rural areas. Banks and branches tend to be in urban areas, and transportation costs are high, so it was difficult for low-income individuals to use banking services. In addition, products have not been appropriate for the very poor. Deposit services are very costly and have high minimum balances so the poor seek banking products elsewhere.

One of the major reasons of exclusion of the poor from banking products is because of information asymmetries. Accurate information helps lenders and borrowers make good decisions about finances. Poor people who do not have collateral or credit history may be seen as high risks to lenders. Most often, these borrowers lack assets that serve as collateral, have no relationship with the banks and are not employed in sectors that are attractive to the formal lenders. Due to the shut out factor from commercial banking services, the alternative MFIs and the informal market have been the option for low-income people to obtain credit. This imperfect information also leads to market failure, as the demand for banking products is much higher than supply of banking products to this sector. However, with the growth of new Mzansi accounts,

free savings accounts marketed to the poor, Akpan (2005) showed that there is no basis for the exclusion as there is high demand for banking products, and therefore, concludes that the growth of MFIs in South Africa is not a sign of financial sector growth but rather that of a market failure.

### **3.4 Household Access to Financial Services in South Africa**

Over the last four years, the annual Fin Scope survey has examined the use and perceptions of the financial sector in South Africa, which provides information on financial service delivery. In 2006, it was estimated that about 16 million people did not have a bank account, because many lack regular income or employment, and due to the prohibitive cost of bank accounts. In addition, many people work informally, and it is difficult to open a bank account without proof of employment. In the Fin Scope 2006 Survey, three categories of people were identified in terms of use banking products. These are the “formally included people” - who use products at a formal institution; “the informally served” - these use a burial society or smaller savings club exclusively, and the “financially excluded people” – who use neither of the products at a formal institution nor those of a burial society or smaller savings club and are therefore classified as the unbanked. The unbanked in South Africa share many of the same characteristics. Typically they are less educated, reside in townships, rural or peri-urban areas, they are black, lack a steady cash flow, and many have never had a bank account (FinScope 2006; Coetzee 2005). Most of these excluded people were disadvantaged because of apartheid, and their economic situation has not greatly improved in the post-Apartheid era (Kirsten, 2006).

The poor are in the low-income markets like microenterprise, small-scale farmers, domestic workers, day labourers, pensioners and others who receive government grants and who have been underserved by banks. They demand bank services but the supply of products from the formal banking sector has not met this demand. Banking services for low-income people may include loans for business and personal use, savings and deposit mechanisms, remittances and transfers, payment services, and insurance. Millions of South Africans share bank accounts with family members, as it is much cheaper to bank together (Akpan, 2005). Between 2005 and 2006, there has been an estimated 4,6 percent increase in the number of the banked population because of the growth in Mzansi<sup>6</sup> accounts, savings accounts targeted to low-income individuals at commercial banks and ATM card usage. Consequently, the proportion of total banked adults in South Africa rose to 51 percent with 15,9 million people with bank accounts in 2005 (FinScope, 2006).

New legislation has opened banking up to competition and commercial banks now provide a wide range of financial services to previously disadvantaged South Africans. Many institutions offer banking services to low-income people, with each group having a different mission in why they should provide services to the poor, ranging from profit to philanthropic and what services they can offer.

### **3.5 South African Financial Services Providers**

The key players in the financial service delivery in South Africa include the informal financial services - Stokvels, ROSCAs, and burial societies. South African government-regulated, state banks and wholesale financiers like Khula and the Eastern Cape Rural Finance Corporation

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<sup>6</sup> Mzansi means South, see details on Mzansi accounts in section 3.6.2

(ECRFC), Private sector banks - “Big 4” large commercial banks and smaller banks. Microfinance Institutions - semi-commercial MFIs, NGOs, Co-operatives and the International banks.

### **3.5.1 Informal services**

Because the demand of banking products has not been met in the formal sector, many people use informal banking services. In terms of savings, people use informal savings clubs, Stokvels or Rotating Savings and Credit Associations (ROSCAs). For credit purposes, many turn to the traditional moneylenders who can be expensive and exploitative, but they are the only option for many people (Baumann, 2002). Expensive loans from moneylenders may only exacerbate the situation of certain individuals by continuing a cycle of poverty. These are debt traps for people with no savings option.

Informal banking products are very popular. According to Baumann (2002), Stokvels were used by 12 percent of South African population and about 3,6 million people are members of ROSCAs. Most of these people meet their savings goals with Stokvels. Typically, people save in these accounts for an emergency, for funeral costs or for food, while many other South Africans may invest in cattle or livestock (FinScope, 2006). For credit, family and friends are first point of call for loans. It is a positive experience for people to save money formally, as they are able to plan, especially if the products are inexpensive and geared towards low-income people. There are benefits in terms of liquidity and security, as a poor person cannot sell part of a cow, but could use a portion of savings. However, these informal services do not mobilize the best use of people’s savings as they are subject to market fluctuations. The cost of a cow could fluctuate or a

cow could even die, greatly increasing the risk of investing in cattle alone. In addition, actual cash saved at home is much more prone to theft, fire, flood or some other natural disaster. It is important to allow low-income people a choice of savings products whether it is with an informal group or at a commercial bank. A commercial bank does offer some advantage in terms of access and security.

### **3.5.2 Microfinance Institutions**

There is a significant cash lending industry in South Africa comprising of microloan firms targeting short-term borrowers with unsecured loans, while non-governmental organization (NGO) based Microfinance Finance Institutions (MFIs) target the small, medium, and micro enterprises (SMMEs). According to Baumann (2004), the latter group targets SMMEs to facilitate entrepreneurial employment creation and economic growth instead of providing consumer loans. If people want non-income generating loan they may need to go to one of the 'loan sharks' for a microloan. Most of the NGO-based MFIs have a development mission and attempt to reach poorer clients, while the microloan firms generally do not have a philanthropic mission but only want to make a profit.

One type of MFI is the village bank or linkage banking. Village banks address the needs of a group who utilize services from a formal bank as a group, with an NGO as an intermediary. These institutions were designed to mobilize savings in rural communities. The banks link rural communities with the formal financial sector. They bring banking to rural areas and reduce cost of banking through group banking. They were exempted from the deposit-taking ban, by maintaining a relationship with a link bank (Schoombee, 2004). One specific village bank group

was the Financial Services Association, which had member village banks and gave start-up loans to new village banks. It went bankrupt in 2006 when they lost a funding agreement (Baumann, 2004; Dallimore, 2003). There exist some inherent problems with linkage banking. It assumes clients want to keep accounts as group and this may cause a problem for clients who want to receive individual government grants, but there is no way to keep it separate in a group village bank account. Inexpensive individual accounts may be more helpful for people who receive grants from the government.

Another type of MFI is the Savings and Credit Cooperatives League of South Africa (SACCOL), which was established by Savings and Cooperatives (SACCOs) and Credit Unions in South Africa as their national association. A SACCO is a democratic, unique member driven and a self-help co-operative. Each SACCO is independent, owned, governed and managed by its members, who have a common bond, either working for the same employee, belonging to the same church, labour union, social fraternity or living/working in the same community. They are essentially formalised Stokvels, through registration and adoption of a formal governance structure. SACCOs are savings led and provide loans by proven ability to repay. They receive an exemption from restrictions on deposit taking. There are 28 SACCOs in South Africa with over 12 000 members (Baumann, 2004).

According to Baumann (2004), SACCO has R12 million in outstanding loans, 32 percent of which goes to housing, 8 percent into small business, and 37 percent for personal loans and 23 percent for vehicle loans. However, as SACCOL is self-sustaining, it has been struggling to sustain growth, because of lack of capital to continue to be sustainable through growth.



Therefore SACCOLs cannot reach scales to meet the needs of all low-income South Africans (Baumann, 2004).

### **3.5.3 Foreign and Commercial Banks**

There has been an increase in the number of foreign owned banks in South Africa. Between 1994 and 1999, foreign banks increased by about 50 percent (Kirsten, 2006), for example, Barclays Bank bought ABSA in 2005. The share of foreign banks will increase over time (Coetzee, 2005), which may be a problem for low-income clients if foreign banks do not have the best interests of the local community at heart, but are more profit oriented. With banks headquarters overseas, the bank may not be interested in the needs of South Africans, but more interested in their home client base. As the trend continues for large international banks to acquire smaller banks, products directed to the low-income South Africans, has been on the decline as ownership becomes moves from the local community.

Commercial banks have the largest share of the microfinance market, but different types of financial services providers need to be permitted entry into the banking system. These will cater for local communities, by offering appropriate products that fit their needs as profit seeking entities, as commercial banks will never fully meet the need for financial services in South Africa.

Government regulations lack some connection with the banking issues that poor populations face. For instance, access and usage are not synonymous as many more people have access to a product than those who choose to use it (FinScope, 2007). One of the major issues with the aims

of the Financial Sector Charter (FSC) and the Mzansi account is that it works to expand access and the usage of banking products, but many factors hinder access, like criteria that prohibit certain clients, distant service points, and expensive products. These are issues being addressed by the banking sector, but clients may not use a product because they may not be aware of its existence, how to use it, nor understand how it can help them (FinScope, 2007). These are more difficult issues to handle than simply expanding banking products.

Even though banks have the largest share of the microfinance market, banks ability to reach out to the very poor individuals has been questioned. Banks typically focus on employed people only, while MFIs help self-employed or under employed people. At the commercial banks, loans are granted mostly to salary earners who pay for consumption needs, but may not be used to increase livelihoods for the lower-income earners. According to Baumann (2002), not all South Africans would want a bank account at the current cost and level of service. Bank fees are extremely high, and banks report that fee income is more important than interest income (Coetzee, 2005). To create products, the government and private sector need to understand poor savers, understanding how they manage their savings, how they pay for life cycle events, and if poor people can secure themselves against emergencies, get business finances, and pay for life cycle expenses (Baumann, 2002). According the FinScope (2006), one in five unbanked South African would not like a bank account, as they do not see how it would benefit them.

Commercial banks hold the largest microloan portfolio and have the largest number of clients, far exceeding MFIs, NGOs or informal groups. The “Big Four” banks have a market share of 84 percent in terms of assets (Schoombee, 2004). According to Akpan (2005), banks have the

largest share of the microfinance market and number of loans while Microfinance NGOs and MFIs, which give microloans, have the smallest share in terms of actual amount disbursed and number of loan recipients. According to DFID (2005), some MFIs cannot mobilize funds on a large scale or pool risks like large organizations. These MFIs only have limited coverage and cannot offer low cost banking products to as many people as commercial banks. In 2005 alone, according to Akpan (2005), banks provided over 1 million microloans, while MFIs and NGOs combined only provided 21 000 microloans.

The informal sector does not reach the same scale as commercial banks in South Africa, but the emergence of South African micro lending sector and its considerable growth within a short period has had major implication for credit access by employed low-income individuals. The combined balances outstanding of all registered lenders totalled R15.2 billion at the end of 2002 with a total clientele of 4.898 million. 2.7 million loans had been disbursed during 2002 totalling R3.03 billion. The total number of registered micro-lending institution was 6 798 (Micro Lending Industry Statistics, 2002)

MFIs will never be able to reach the scale of commercial lenders and so will have a difficult time reaching the poorest and unbankable populations. MFIs have greater depth by targeting poorer households, but are likely to drift in their mission to serve poorer households as they may target better clients among the poor households. Even if they focus on the poorest segments of the population, MFIs may be unable to do so while remaining financially sustainable. In addition, MFIs only offer entrepreneurial loans to expand businesses and may not offer needed consumption loans or savings products (Baumann, 2004).

According to Moyo *et al.* (2002), 45 percent of microloans are used for emergency and consumption finance, 15 percent are education loans and 17 percent are housing loans. So they questioned the focus of the loans which are for employment creation and economic growth, and do not necessarily focus on poverty reduction, even when no jobs or growth is created from these entrepreneurial loans. Only a few lenders are strategically involved in social development and upliftment, with most providing only entrepreneurial loans (Moyo *et al.*, 2002). Many MFIs receive subsidies to offer banking services as a type of development because they are not earning a profit, but becoming sustainable is very important, as it prevents hiding bad practices with ongoing subsidies. In addition, the goal should be to extend banking services to the poor and excluded, so MFIs should be run well enough to get wholesale credit through groups like the South African Microfinance Apex Fund (SAMAF) and to be sustainable. It is clear that both commercial banks and MFIs have some specific issues in meeting the banking needs of the poor.

Low-income South Africans use both informal and formal strategies to save money and improve their livelihood. As the unbanked is a heterogeneous group in South Africa, it is important to link people with the best products in terms of location, need, and income. Although the South African government is highly dependent on the financial market to provide financial services to the poor, many will still be underserved or un-served by the commercial sector. It may become too costly to provide commercial services in so many locations, so banks will depend on already established financial intermediaries like MFIs. Moreover, the technological advances at commercial banks aimed to serve the unbanked may not be appropriate for this population and so informal banking organizations will continue to thrive in South Africa. It is important that

policies should be geared towards including these players, even though their share of the market is much lower than the commercial banks. Appropriate banking products can help protect low-income South Africans against economic shocks and carve a pathway out of poverty.

The major providers of microfinance services in South Africa based on the type of entity, the product offered, their major clients and how the accounts are used, are presented in Table 3.1

**Table 3.1 Providers of Microfinance in South Africa**

| <b>Name of MFI</b>                           | <b>Type of entity</b> | <b>Products offered</b>                | <b>Charge fees?</b> | <b>Main clients</b>           | <b>How accounts is used</b>         |
|----------------------------------------------|-----------------------|----------------------------------------|---------------------|-------------------------------|-------------------------------------|
| <b>Stokvels, ROSCAs and burial societies</b> | Informal              | Small savings, loans and funeral cover | No or nominal       | Low-income individuals        | School fees, household, emergencies |
| <b>Commercial Bank</b>                       | Private/<br>Formal    | Savings and loan products              | Yes                 | Variety                       | Household/business expenses         |
| <b>Village Bank</b>                          | Informal/<br>Formal   | Small savings, loans and funeral cover | Yes                 | Rural, low-income individuals | Household/business expenses         |
| <b>SACCOL</b>                                | Formal                | Small savings, loans and funeral cover | Yes                 | Low-income individuals        | Household/business expenses         |
| <b>Foreign banks</b>                         | Private/<br>Formal    | Savings and loan products              | Yes                 | Variety                       | Household/business expenses         |
| <b>ECRFC</b>                                 | State Banks           | Savings                                | Yes                 | Rural, low-income individuals | Household/business expenses         |

### **3.6 The Role of the South African Government to Transform the Financial Sector**

According to Kirsten (2006), prior to the first exemption notice issued in 1992, much of South African population people have been excluded from formal banking systems, and do not have legal access to formal credit. The Usury Act limited pricing and effectively restricted the product offering in the market.

As the government has taken a market-based approach for policy, the government has done more to facilitate and regulate rather than provide direct financial services (Kirsten, 2006). These policies which are in line with the capitalist neoliberal policies, which move the responsibility to the individual rather than to the government, while aiming at increasing lending for small businesses has not actually provided formal sector jobs (Akpan, 2005).

One of the first pieces of legislation to provide more banking options to the poor was the Exemption to the 1968 Usury Act<sup>7</sup>, which allowed financial institutions to give small loans without interest rate restrictions. Micro lending increased dramatically as a result and disbursements reached nearly R15 million in 1999 and micro lenders created a separate, largely unregulated tier of credit provision to people on the fringes of the banking system, people who were unable to utilize many, if any, banking products (Kirsten, 2006). In 1999, the Micro Finance Regulatory Council (MFRC) was established after the government realized that the 1992 exemption created an environment for abusive practices and high interest rates under the 1999 Usury Act Exemption Notice, as part of the process of financial sector liberalisation. The 1999 Exemption Notice makes it compulsory for all micro lender operations (those who extend credit up to a new maximum R10 000 at rates above the statutory cap) to register with the MFRC. The MFRC will supervise the operations of those institutions lending under its unrestricted interest rate window, in order to enable more effective consumer protection and regularisation of micro-lender operations in a growing market. It became mandatory in 2002 for all providers of microfinance services to register with the National Loans Register (NLR), which is a database that records all loans disbursed by lenders registered with the MFRC.

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<sup>7</sup> This Act limited finance charges on money lending transactions, credit transactions and leasing transactions.

The government also has wholesale financiers like Khula, which fund and start up the microfinance organizations. Khula offer guarantee products to registered commercial banks and other private sector financial institutions with a risk sharing arrangement so Khula assumes some risk associated with lending to the small, medium and micro enterprises (SMME) community. MFIs then must use their own minimum standards for loans, with over R165 million having been channelled to SMMEs (Rogerson, 2004). These MFIs target historically disadvantaged communities, particularly women and semi-urban areas, with over 70 percent of loans given to women to help them start small businesses or expand existing ones (Akpan, 2005). Khula has received a lot of criticism because they have not built capacity or expanded outreach (Akpan, 2005; Rogerson, 2004). In 2005, the government created the South African Microfinance Apex Fund (SAMAF) to replace Khula, with the mandate to address poverty and unemployment through the provision of affordable access to financial services, institutional and client capacity building and savings mobilization through co-operatives and other indigenous formations such as burial societies and Stokvels. The failure of Khula is an example of how lending may not be effective without structural change.

South Africa had several state government funding agencies like the Land Bank, Eastern Cape Rural Finance Corporation (ECRFC) and the Ithala in KwaZulu-Natal, which functions as a thoroughfare for government funding for economic development and small, medium, and microenterprises (SMMEs). These agencies are often self-sustaining, but as parastatals, they are required to carry out government programmes without the input of the corporation, which may cause a disconnection between clients and the bank organization.

### **3.6.1 Financial Sector Charter**

The Financial Sector Charter was launched in 2003. The Charter embodies an agreement among major players in the financial sector, such as the banks, insurance companies, brokers and exchanges, on a set of service provision and empowerment targets in such areas as banking services to low income populations, black empowerment and ownership in the financial sector, and support for black entrepreneurship. The South African Banking Council was threatened with a government mandated charter, so it negotiated a voluntary affirmative action charter on a set of principles for the financial services sector, which was included as part of the Broad Based Black Economic Empowerment (BEE) Act. The Banking Council represents all foreign, retail, merchant, investment, and commercial banks in South Africa. Under the Charter, all financial service providers are expected to pursue these targets, to report periodically on their progress to a monitoring body set up under the Charter, and to be graded on their performance in form of a public score card. The “Big Four” commercial banks and other financial institutions committed to redress inequalities from apartheid, strive to provide access to affordable banking by 2008 to 80 percent of the poorest 60 percent of the population (Kirsten, 2006). Some of the commitments include improving access to financial services for low-income communities, increasing investment in low income housing, small and medium black owned-enterprise, agriculture and transformational infrastructure; increasing funding for BEE transaction financing, accelerating employment equity and skills development within the sector, increasing procurement from BEE-accredited enterprises, and achieving BEE ownership and control targets (Banking Council Update, 2005). All financial institutions are expected to pursue the target, and if targets are met, over 8 million people will move from unbanked to banked, or from using no banking products to using some banking products, formal or informal (Kirsten, 2006).



### **3.6.2 Mzansi Bank Account**

Mzansi accounts were created after the Financial Sector Charter as first order bank accounts that provide entry-level banking services. The aim was to provide affordable and accessible banking to the previously unbanked population because of the prohibitive cost of accounts or because banks were too far away. This account allows people to save their money in a safe account, which can be easily turned into cash. Banks have acknowledged the exclusion to banking products many low-income people experienced, by targeting this group and creating Mzansi accounts (Akpan, 2005). According to the Banking Council Update (2005), banks do not plan to make a profit, but instead plan to sell more banking products to those people, and eventually break even. So they may not plan to make a profit from the Mzansi accounts, they do hope these clients will buy credit eventually, and that they can earn a profit from them. If banks plan to make a profit, it is hoped that there will not be predatory lenders and that decisions for lending will be made with profit and the good of the client in mind. The banks involved are the South Africa's major retail banks - ABSA, FNB, Nedbank, Standard Bank and Post Bank.

The Mzansi accounts have made a significant impact for many unbanked people in South Africa. Over 9 000 accounts are opened everyday (Preuss, 2005), with over 2 million accounts as of year 2005 (Banking Council Update, 2005). Over 90 percent of those who open the accounts did not have accounts before and with over 56 percent of the accounts opened by women with average account balance of R300, about \$50 (Kirsten, 2006). Majority of bank holders are between 25 and 54 years old and with largest take up from black communities (Banking Council Update, 2005). The group of people that are using the Mzansi accounts shows it suits the unbanked population in South Africa and redressing their exclusion from banking products. The growth of

Mzansi account puts South Africa on target with other developing countries such as Bangladesh, Malaysia, Indonesia, India, Ghana and Nigeria, to offer banking products to low-income individuals (Preuss, 2005).

This change to make banking cheaper and more accessible has made a significant impact on the number of people using banking products in South Africa. According to FinScope (2006), there has been an increase in the banked population by 11 percent and the use of ATMs and Mzansi accounts has increased. Although perceptions are positive, as it is seen as an affordable option, there is the feeling that it is a poor man's account. The FinScope 2006 annual report also states that usage of bank products is still very low, and in fact, most poor people choose informal financial services over formal services to save. Generally, there have been some successes with banking products but the products and technology have not reached as many people as expected.

### **3.6.3 Legal and Regulatory Interventions**

Three different pieces of legislation will most directly affect the structure and market response in the South African financial services arena, are namely Dedicated Banks Bill, the Cooperative Banks Bill and the National Credit Act. These initiatives are expected to deepen the financial sector. They are discussed below.

#### **a) Dedicated Banks Bill and Cooperatives Banks Bill**

This is a banking regulatory framework, proposed by the South African National Treasury, which seeks to create a tiered structure, making way for a new class of low-cost banking institutions focused on providing retail financial services to clients currently not serviced

through products provided by the commercial banks. The second tier banks would be commercial banks with banking licenses that allow for restricted banking services (dedicated banks) and the third tier would be member-based deposit-taking financial services cooperatives and credit unions (cooperative banks).

The Dedicated Banks Bill seeks to create a second tier of commercial banks. These banks will be sub-divided into Saving Banks and Saving and Loan Banks. A Saving Bank will be required to maintain minimum qualifying capital and unimpaired reserved funds of R10 million, while the Savings and Loans Bank will be required to maintain R50 million of the same capital and reserved fund.

These banks will be allowed to take deposits from the public. Presently, regulations only allow banks to accept deposits, but a financial institution in a rural area might have products that fit better with the community. This will allow micro-lenders and smaller niche banks to provide a wider variety of products to low-income people, with depositors to have the same safety and stability as at formal banks (Coetzee, 2005). This is important because the focus has only been to give low-income people loans, while little attention is on how the poor can save for investments purposes to improve their well-being.

They will also be allowed to provide secured loans and limited unsecured loans. Their investment will be restricted to liquid assets (Government Bonds, Treasury Bills). In the event, they need to take on a riskier investment (and on unsecured loans) they will be

required to maintain the prescribed first-tier, unencumbered capital against such risk-weighted exposure.

This bill would also allow many new entrants including retailers like Pick and Pay, telephone companies, micro-lenders, non-bank financial institutions, small niche banks, and Post Bank. These groups have strong brands, large and loyal client bases, many branches, and flexible trading hours (Coetzee, 2005). With many choices for making deposits, it would be very easy for many previously unbankable individuals to become bankable.

The Cooperative Banks Bill seeks to formalise the cooperative banking industry by affording a legal standing in its operation. Secondly, it seeks to bring the industry into the regulatory framework to afford its depositors the same safety and stability as enjoyed by the formal commercial bank's depositors. Thirdly, the Bill provides for the creation of support organisations for the cooperative banks in order to ensure a continuous and sustainable capacity programme for the industry. This is necessary to ensure the growth and stability of the industry. Cooperative (village) banks are member-based financial institutions that currently operate under exemption from the Banks Act. The Cooperatives Banks Bill would place fewer burdens on the capital and entry requirements for the industry.

#### **b) National Credit Act**

The National Credit Act seeks to promote a fair and non-discriminatory marketplace for access to consumer credit and regulate how credit is given. This bill was passed into law on

June 1, 2006 replacing the Usury Act (which governs money lending transactions), and the exemptions to the Usury Act.

According to Kirsten (2006), a review of credit laws had found that interest rate caps contained in the previous Usury Act (1969), the exemption notices thereof and Credit Agreements Act (1980) have not been effective in protecting consumers. Credit allocation has been distorted to the detriment of low-income clients. Misleading disclosure, anti-competitive practices and very high cost of credit had subsequently undermined the potential benefit for access to credit. The problems in micro lending industry are also largely an indication of the failure of the banking sector to meet the needs of low-income earners. Consequently, the Department of Trade and Industry (dti) has thus introduced the National Credit Act, as a strategy that would allow the credit market to function in a robust and effective manner.

Historically, consumers have been subjected to high cost of credit and exploitative practices by non-reputable credit providers. The legislation focuses on consumer interest as the government seeks to redress imbalances in the South African consumer credit market and aims to create a more efficient market in which all South Africans will be able to have access to credit at affordable rates.

The National Credit Act aims to regulate the granting of consumer credit by all providers, including micro lenders, banks and retailers. This new legislative framework would create formal bodies referred to as the National Credit Regulator and the National Consumer

Tribunal, which will play a vital role in ensuring enforcement, promotion of access to redress and adjudicate contraventions of the Act. Other aspects include general regulation of consumer credit, promotion of BEE within the consumer credit industry, promotion of responsible credit granting, and stopping prohibitive reckless credit granting, as well as establishing norms and standards for credit (Banking Council Update, 2005). This is important for protecting the consumer's rights from predatory lending and expensive fees.

#### **3.6.4 Private Sector Initiatives**

Banks were attracted to the concept of providing banking products to low-income people after witnessing the large numbers of people using informal services and at institutions with a development mission like the ECRFC. Banks realized that this was an untapped group and reformed microfinance practices, which had been pioneered by NGO's (DFID, 2005). Although they may have some altruistic reasons for getting into micro lending, banks realise that it is profitable to provide banking services to low-income people. Banks may be more interested in the profit margin than in helping the community.

After the restrictions on interest rates were lifted, over 3 500 micro lenders disbursed loans to low-income people (Schoombee, 2004). From this growth, it was evident that banks could achieve full cost recovery and a market return, hence a business incentive to serve this sector (DFID, 2005; Schoombee, 2004). In South Africa, on a sustainable basis, the low-income people are seen as untapped market, due to the high numbers in low-income employment (FinScope, 2006). The contribution to the GDP of small businesses and microenterprises is small in South Africa, but this sector employs a significant number of people. Furthermore, as traditional

markets shrink and become more competitive, banks need to diversify their customer base, as there seem to be profit-driven reasons for investing in the poor rather than for the benefit of the poor.

According to Coetzee (2005), the “big 4” had more than 31,2 million retail accounts in 2005, which are expected to grow to 35,4 million in 2008. The physical location of these banks is important to meeting geographic aspects of the FSC. The number of branches and ATMs will grow by 15,5 percent in 2008, in line with FSC to provide first order retail products and services. Existing rural branches will be regional service hubs, and mini branches with longer trading hours will be created to compete with retailers (Coetzee, 2005).

Technology will play a major part in making banking more accessible. New technology has been introduced including mobile phone banking, e-banking, and self-service terminals, which are the cheapest for banks, rather than building a new branch. As cell phones have become more popular, banks have pushed for cell-phone banking, where one can pay bills, check account information and transfer money on their cell phone. However, cell-phone banking, internet and self-service banking may exclude some clients because the technology may be confusing or difficult to use, and some clients are not even aware that it exists or trust the technology (FinScope, 2006).

### **3.7 The New South African Development Finance System**

In order to correct the perceived market and government failures as well as the political and socio-economic imbalances of the past, the new democratic government, which came into place

after the fall of the apartheid regime, has restructured the South Africa development finance system (DFS) to reflect the new policy orientations of the ANC-led government (Murray, 1999). According to Murray (1999), this has led to the closure of some development finance institutions, for example, the South Africa Housing Trust and the Local Authorities Loan Funds. The restructuring and transformation of others like the Land Bank, Industrial Development Corporation and the Development Bank of Southern Africa (DBSA) and the setting up of others, such as the National Housing Finance Corporation (NHFC) and the Khula Finance Enterprise Corporation (KFEC). In addition, the government also established the National Development Agency with the Transitional National Development Trust as its forerunner to channel funds to non-governmental and community based organisations.

In order to avoid duplication of duties and spending, the new development finance system was reorganised in such a way that each institution finances its own niche market. The DBSA with infrastructure development; IDC with industrial development; NHFC with housing; Land Bank with agriculture, land reform and rural development and the KEFC with small, medium and microenterprise development. There also exist a number of provincial development corporations, mostly former homeland corporation, such as the Eastern Cape Rural Finance Corporation (ECRFC) and the Ithala Development Finance Corporation in KwaZulu-Natal. To date there has been little progress in transforming these corporations, with no national regulatory framework in place. According to Murray (1999), the future of these corporations and their role in the development finance system remains uncertain.



The extent of the intervention has varied from direct steps to increase or supplant credit provided by the private sector to indirect measures aimed at improving the policy environment (for, example, by addressing incentive problems and regulating financial intermediaries). In South Africa, the supply led approach to rural finance is still the lead for most of the government interventions. According to Spio (2006), one prominent feature of the South African DFS is the lack of a healthy partnership between the government and the private sector organizations. Generally, the interventionist credit programmes have had a limited outreach - in terms of both location and services offered, and resulted in high costs, with little or no identifiable impact at the small-scale farm level.

In 1995 and 1996, the access of rural inhabitants to rural financial services was investigated by the Strauss Commission of Inquiry. The new government and financial institutions were instrumental in the formulation of policies aimed at addressing the imbalances and deficiencies of previous policies, which culminated in the establishment of the Strauss Commission to investigate and make recommendations to the government on the South African rural financial markets. The Strauss Commission (1996) put forward a number of proposals, some of which attended to the access problem and the expansion of retail financial services in the provinces. The responsibility at the national level for providing capital and support to provincial level institutions, are also addressed in some of the proposals. Other sets of proposals aimed at structuring support for rural finance retail institutions at the national level in the form of the Land Bank.

The supply-led system of rural credit was rejected by the Strauss Commission. The Commission placed more emphasis on a broad range of services that should be made accessible within a demand driven system. The importance of a retail network in rural areas in achieving access to these services was further emphasized. The Commission also stressed the importance of subsidies, but suggested that, they should be implemented within strict rules and be finite in nature. Coetzee (1997) has documented detailed discussion on the report

According to Spio (2006), the report of the Strauss Commission provided a broad framework and a paradigm shift away from a supply-led approach. The implementation of this framework requires a realistic approach based on objectives to increase sustainability of institutions, while at the same time ensuring a development impact and as wide as possible outreach. Spio (2006) specifically points to the functions of the DFS, which include:

- i) obtain and channel finance at relatively favourable terms from international and local markets;
- ii) serve as a conduit for international donor finance and grants from the state budget;
- iii) create a credit-risk analysis capacity and project appraisal;
- iv) generate private sector investment;
- v) build up core expertise; and
- vi) resource allocation in a manner that promotes overall socio-economic objectives.

However, Coetzee (1997) had suggested that institutions at both the retail and wholesale levels must fulfil certain requirements for the new DFS to achieve the desired impact. These broad requirements include:

- i) Development/outreach capacity – This refers to resources of adequate scope and quality to execute the development objectives of the institutions. For financial institutions, they should have the ability to reach a large proportion of the total market in the rural areas of operation, while still being sustainable (Gurgand *et al.*, 1996).
- ii) Full financial self-sufficiency - This is an essential prerequisite for making financial services widely available to demanding clients. It is necessary that institutions be structured and financed in such a way that sustainability is achieved in the longer term. According to Spio and Groenwald (1998), a three-stage process could be adopted to move these institutions towards the commercialisation of institutions. The first step is to develop a cost-covering operation focusing primarily on lending; the second step begins with the expansion of savings mobilization; and the third step is to move to full independence when concessional sources of finance are longer used and the institution becomes a genuine financial institution.

In order to achieve the stated objectives above, Coetzee (1997) listed some issues, which need to be well thought-out. Firstly, is the need for government to concentrate on establishing a favourable policy environment that facilitates the smooth running of rural financial markets while playing a limited but efficient role in the direct provision of rural financial services. Secondly, in order to serve the needs of the reconstruction and development process, efforts should be geared towards capacity building of existing institutions, as well as transforming the existing institutional structures. In addition, because of the dynamic nature of developments in

South Africa, he suggested that the spirit of flexibility should be an integral part to both the application of sectorally and geographically based proposals on development funding and to the eventual functioning of the Development Finance System.

Thirdly, the need to minimize both systemic and institutional risk was also highlighted. According to Coetzee (1997), development finance institutions should preferably be structured to accommodate the spreading of risk over different types of clients, over different sectors and over different geographical areas, in order to promote the stability of the Development Finance System. The importance of sound management information systems for minimizing institutional risk was also stressed. Fourthly, the need for the Development Finance System to be able to mobilize funds at the lowest cost is essential. The nature of the national development financial institutions should therefore allow for the most appropriate and low-cost deposit and financing options. Lastly, he suggested that the coordination of investment to achieve development should be applicable at all levels, including the policy, strategic planning and budgeting, and operational levels.

### **3.8 The Role of Credit in Development and Poverty Alleviation**

There is a major challenge of reducing poverty facing the world today. It has been estimated that 2,8 billion of the world's 6 billion people, live on less than \$2 a day and 1,2 billion on less than a dollar a day. Of these 1,2 billion, 22,8 million are estimated to live in South Africa (HSRC, 2004). Credit in a developing country context, is an important instrument for improving the welfare of the poor directly, most especially for consumption smoothing that reduces their vulnerability to short-term income shocks (Binswanger and Khandker, 1995; Heidhues, 1995;

Nwanna, 1995). It could also enhance productive capacity through financing investment by the poor in their human and physical capital. An investigation of household credit thus has implications that link together micro-level analysis with factors that determine long-term macro-economic performance.

According to Okurut *et al.* (2005), the demand for credit for productive investments usually comes from those poor who are less risk-averse and enables them to overcome liquidity constraints, making it possible to undertake investment that can boost production, employment and income. Credit for consumption purposes can have a long-term positive impact on household productivity, allowing acquisition of skills or improvement in health status if such loans are used for education or health care. These may enhance or at least preserve the productivity of the labour force.

Financial services are useful in processes of market enlargement and integration as intermediate inputs, and as tools in inter-temporal resource allocations and the management of risk. They also aid in the accumulation of human and physical capital and in other ways of upgrading productive opportunities (Gonzalez-Vega, 1993). Financial services are particularly important for the integration into markets of those households and firms that have been excluded from participation, including those individuals engaged in farming and other activities in the rural informal sector of developing countries.

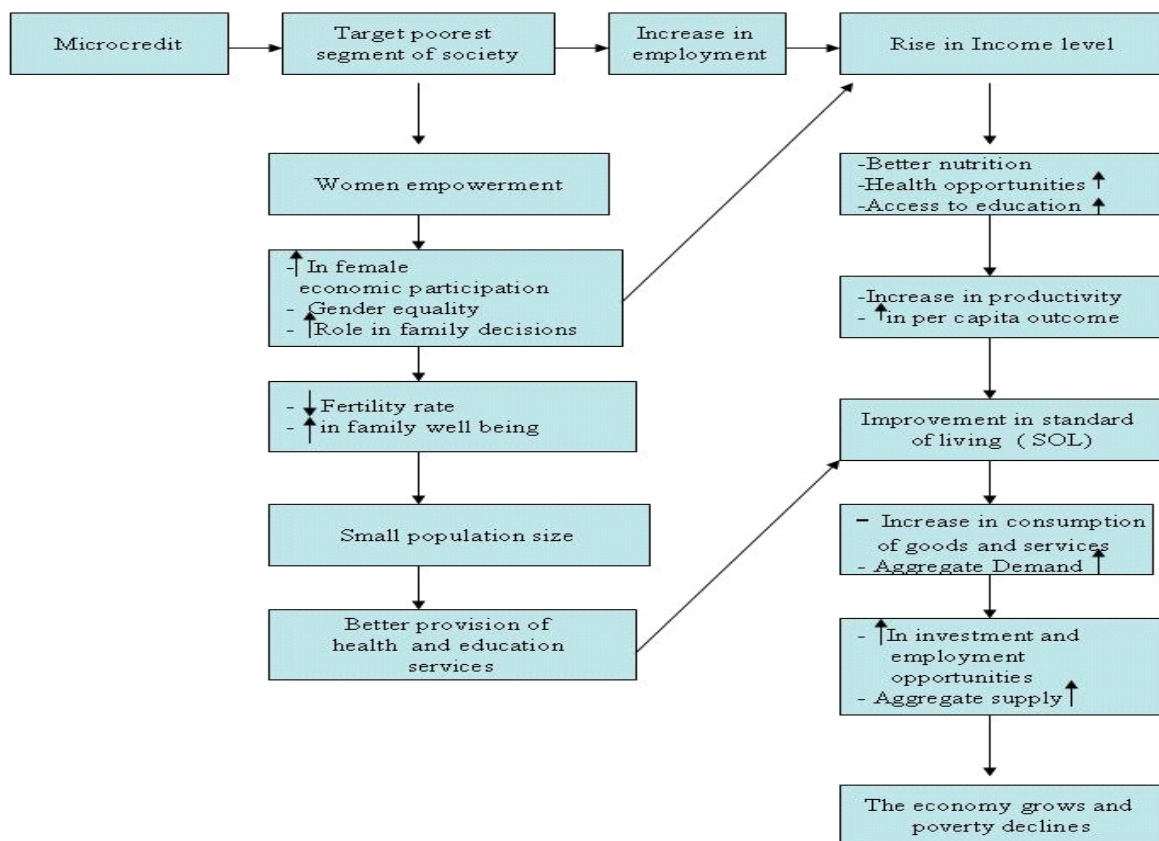
Zeller *et al.* (1997) have identified three pathways through which household welfare outcomes can be affected by access to credit. The first pathway according to them is through the alleviation

of the capital constraints on agricultural households. Generally, expenditures are incurred during the planting and vegetative growth periods of crops on agricultural inputs and on food and essential non-food items, whereas returns are received only after the crops are harvested several months later. Often during the planting season, most households show a negative cash flow. Consequently, the farm household must either dip into its savings or obtain credit to finance the purchase of essential consumption and production inputs. According to Zeller *et al.* (1997), access to credit can thus appreciably boost the capacity of poor households with little or no savings to acquire agricultural inputs. In addition, easing possible capital constraints by making credit available reduces the opportunity costs of capital-intensive assets relative to family labour, thereby encouraging the adoption of labour-saving, high-yielding technologies, which further increases land and labour productivity, a crucial factor in encouraging development, in particular, in many African developing countries.

The second pathway through which household welfare is impacted by access to credit is by increasing its risk-bearing ability and altering its risk-coping strategy. The third pathway, which is enabling access to credit for consumption smoothing, is closely related to the second, because they both affect the resilience of households in bearing production and consumption risks. According to Eswaran and Kotwal (1990), the mere awareness/knowledge that credit will be accessible to cushion consumption against an income shortfall if a potentially profitable, but risky, investment should turn out badly may provoke a household to put up with the additional risk. The household may as a result be willing to adopt new, riskier technologies. A household may also profit from mere access to credit even if it is not borrowing. It can avoid adopting such risk-reducing but expensive strategies such as the production of low risk but less profitable food

crops, such as cassava and local maize, and the build up of assets that primarily serve precautionary savings purposes although may offer very poor yields or even negative returns (for example, keeping cattle or cash).

By providing the poor with a credit facility to start a small business, microcredit helps in reducing poverty. It supports the economic condition of the poor people, as well as having a positive impact on their social life, through better standard of living, greater access to education and health facilities and increased empowerment to participate in decisions of the society. The transmission mechanism of microcredit to poverty is illustrated in figure 3.1.



**Figure 3.1: Transmission Mechanism of Microcredit to Poverty Alleviation**

**Source: Adapted from State of the Pakistan's Economy (2005)**

The role of microcredit for development efforts around the world, particularly for poverty alleviation has been significant. Making financial services accessible to poor people are seen to reduce capital market distortions to exclude the poor, reduce vulnerability by providing the poor with financial resources when needed, and opportunities for income-generating activities. Microcredit enables clients to protect, diversify and increase their income, as well as to accumulate assets, reducing their vulnerability to income and consumption shocks (Robinson, 2002). The solidarity group lending methodologies common in microfinance has helped increase the confidence of the poor (especially women), and empowering them to more effectively confront inequities (Ashe, 2000; Fisher and Sriram, 2002; Simanowitz and Walter, 2002; Snodgrass and Sebstad, 2002). The availability of financial services has proven to be a critical factor in reducing poverty and its effects, revealing positive results on nutrition, education, health, gender equity, and the environment (Littlefield, *et al.* 2003).

Microfinance programmes have been embraced around the world as an important strategy for poverty alleviation. Over the last decade, there has been substantial expansion in terms of both number of institutions and the size of institutions in the field of microfinance. It has been demonstrated in microfinance impact studies (Ashe, 2000; Fisher and Sriram, 2002; Robinson, 2002; Simanowitz and Walter, 2002; Snodgrass and Sebstad, 2002; Khandker, 2005) that:

- Poor households can meet basic needs and protect themselves against risks by using microcredit.
- Improvements in household economic welfare and enterprise stability and growth can be achieved by the use of financial services by low-income households.



- Microcredit empowers women, thereby promoting gender-equity and improving household well-being by supporting women's economic participation.
- Length of time clients have had access to financial services is an indication of the level of impact.

Most policy and research interest regarding rural credit market revolves around the perception that poor rural households lack adequate access to credit. This, according to Diagne and Zeller (2001), is in turn believed to have considerable negative consequences for various collective and household-level outcomes, including the adoption of technology, agricultural productivity, food security, nutrition, health, and overall household welfare. In the next chapter, consideration is given to the features of rural credit markets and their relationship to credit accessibility for poor rural households.

### **3.9 Conclusion**

The South African government has tended to facilitate and regulate, rather than provide financial services directly. Direct provision of financial services by the government relates only to the provision of wholesale finance in housing, agriculture and enterprise finance through Development Finance Institutions, like NHFC and Khula.

As far as financial legislation is concerned, there has been much activity over the past years, and the government has been content to accept and support the private sector's commitment under the Financial Sector Charter to deliver broad-based access. The targets set in the Charter have yet not been achieved. As was revealed in a number of socio-economic profiles of Eastern Cape towns and districts, access to credit and financial assistance remains the principal constraint that

small-scale producers face (Eastern Cape Province, 1995; Provide, 2005). Meanwhile, the new development finance system is so far having little impact on the poor. In order to implement their cost-recovery strategies, development finance institutions are still primarily servicing historic and wealthy clientele. Where credit is available to the poor, it is at extremely high levels of interest. However, while the development finance institutions must be subject to critical scrutiny and made to account for their practices, to lay all the blame at their feet would be to miss the point. The problem lies in South Africa's macro-economic and financial policies, which ultimately set the conditions of cost-recovery that control DFIs, consequently affecting who they lend to and at what rates. There is also a need to critically examine the impact of globalization, and how the 'internationalization of finance' has forced the state to battle inflation above all else.

Long term solutions lie in restructuring the country's macro-economic policy to allow for increased social spending on the poor and to reduce the exorbitant interest rates which make it impossible for the poor to access credit (even if this may mean slightly higher levels of inflation). In the meantime, the onus lies on government to bring pressure to bear on the development finance institutions, to ensure more of their finances are directed towards the poor and incurred on, non-loan expenditures, such as training and capacity building. Since these activities will incur extra costs for the development finance institutions, government will have to consider providing targeted grants and subsidies to institutions for lending to the poor through intermediary agencies at below market rates.

Government also has the onerous task of plugging the gaps in the development finance system. Where development finance institutions are not directing credit towards basic development needs

for the poor, then it is government, which should be undertaking this responsibility. The question is whether it has the capacity and will to fulfil this obligation. The next chapter focuses on rural households' credit accessibility.

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## CHAPTER 4

### RURAL HOUSEHOLD CREDIT ACCESSIBILITY

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*“Money, says the proverb, makes money. When you have a little, it is often easy to get more. The great difficulty is to get that little”. - Adam Smith.*

#### 4.1 Introduction

The provision of financial services at a reasonable cost, especially credit to poor rural households who have limited assets, has not been an easy task. In many developing countries up until the 1980s, state-run agricultural development banks were at the forefront in establishing formal credit markets in the rural areas. However, according to Zeller and Sharma (1998) and Ledgerwood (1999), their performance has been severely handicapped by the shortcomings of the banking principles that they were based on, which include, an organisational setup without any incentive to do business with the poor, collateralised lending, excessive dependence on government funding, and pervasive political patronage.

The Asian Development Bank (2000) has identified the lack of access to a broader set of financial options as an indication of a potential constraint to entrepreneurship and the ability to undertake socially and privately profitable investment ventures. The reasons for any early failure on the part of financial institutions must be well understood if they are going to play any meaningful role in the delivery of micro financial services. The outcomes of which could be useful in determining the modalities for restructuring the rural financial systems in order to

convert them into viable rural financial markets. According to Von Pischke, (1983), a well functioning rural financial market requires institutions that are healthy and expanding and that financial innovation should cause a fall in the costs of financial services.

In this chapter, factors that affect poor household credit accessibility are explored. As had earlier been pointed out, the link between financial services and household economic welfare is determined by the nature and operations of the financial institutions and their operational policies. In section 2, discussions on the main features of rural credit markets in developing countries are presented. This background is necessary as a building block to bring out some of the issues that need to be considered when one attempts to look at rural household accessibility to financial services, especially credit. Section 3 focuses mainly on the determinants of rural household accessibility to credit. Some of the factors highlighted here include risk, credit rationing, transaction costs, delinquency and default rates, interest rates and collateral. Section 4 presents empirical evidence of the determinants of credit accessibility.

## **4.2 The Main Features of Rural Credit Markets**

The most important functions of financial markets are capital transfer from savers to borrowers, capital agglomeration, projects selection, investments monitoring, contract enforcement, risks transfer, pooling and sharing, and transactions recording, while capital markets deal with intertemporal trade, as well as risk and information (Levine, 1997). It has been argued that there exists no likelihood for rural credit markets to be efficient, as they do not operate like the classical competitive markets. According to Llanto (1990), transactions in credit markets are not the same as other market transactions, where a transaction is terminated once payment is

received. The commodity seller does not care who the buyer is or what happens to the commodity after sale, as long as he/she is paid. In contrast however, in the credit markets, information is required both on personal characteristics of the borrowers and on the project for which an application for financing is lodged. It is important for the bank or lender to know the viability of the project, the purpose of the loan, the borrower's credit-worthiness and his/her strategic behaviour. Credit markets are different from an ideal market because they are largely dependent on information. According to Hoff and Stiglitz (1990), rural credit markets have to contend with the problems of screening, incentives, contract enforcement, information asymmetry and monitoring.

Several features have been identified that make credit markets in developing countries different from other credit markets, which include the following:

- i) **Segmented/Fragmented Market** - Rural credit markets in developing countries are often segmented or fragmented. According to McKinnon (1973), different borrowers or clients face different capital prices for land, labour, commodities and capital, in other words, different lenders in the rural financial markets have different interest rate policies.

In credit markets, interest rates may not bring supply and demand to equilibrium; this is largely because interest rates have the dual function of setting prices on one hand, and serving as an instrument for regulating the risk composition of the lender's portfolio on the other hand. However, by allowing the interest rate to reflect the market prices these imperfections may be eliminated. The cost of segmentation is that it hinders the flow of

funds across regions or groups of individuals even though there are potential gains from doing so, as when needs for credit differ across locations (Besley, 1994; Herath, 1996; Black *et al.*, 1997).

- ii) Collateral Security – It has been demonstrated in studies by Plaut (1985) and Herath (1996) that collateral increases the amount of credit offered to a given borrower and/or reduces the rate of interest charged *ceteris paribus*. It increases the expected returns of the lender and creates an incentive for borrowers to avoid intentional default. According to Udry (1990), collateral pledge in exchange for a loan directly reduces the cost to the lender of default on the loan; it can reduce the moral hazard associated with lending by providing an added incentive for the borrower to repay; it can alleviate the problem of adverse selection by screening out those borrowers most likely to default. However, according to Binswanger and Rosenzweig (1986), land can be expected to be the most common and appropriate collateral in developing countries, especially in rural areas, since collateral can be damaged or moved before the creditor confiscates it. However, most rural households in developing countries do not possess title deeds to their land because they are often too poor to buy the land. Furthermore, according to Besley (1994), poorly developed property rights in the rural areas of many developing countries could render appropriation of collateral in the event of default difficult, while Feder *et al.* (1988) identified legal constraints existing on mortgaging of agricultural land as a constraint. Often political cost of foreclosing on debtors with collateral is significant.

iii) Weak/Underdeveloped Complementary Institutions – If rural financial markets are to function properly then the functioning of certain other complementary institutions and markets are essential. In most rural areas of developing countries, these institutions are not in place and are weak wherever they do exist. For example, there are limited and weak equity markets that provide a mechanism for sharing risks in most rural areas of developing countries. Also evident in most rural credit markets is the absence of insurance markets to mitigate the problems of income uncertainty. The absence of or weakness in infrastructure has been identified as a hindrance to the operations of financial institutions in the rural areas. According to Spio *et al.* (1995), more often than not, savings mobilisation is frustrated because social amenities such as water, electricity, communication facilities and roads are not within ready access.

#### **4.3 Factors Determining Household Access to Credit**

In spite of the increasing number of private and public agencies involved in raising the efficiency of financial intermediaries targeting the poorer clientele, their effectiveness in improving the poor's access to financial services, especially credit, is below expectations (Schrieder and Theesfeld, 2000; Zeller, 2000). As a result, the majority of poor rural households are left out of the rural financial system. According to Lariviere and Martin (1999), rural financial intermediation is expensive because participants are geographically scattered, small financial transactions are involved and rural incomes tend to be unstable. Most often, there is no clearly defined collateral and rural people are usually not educated. Furthermore, the cost of gathering information about rural borrowers is high, which naturally impedes financial markets from



making contact with rural people, especially the poor (Lariviere and Martin, 1999; Schrieder and Theesfeld, 2000).

Lipton (1976) was of the opinion that these problems result from urban bias. According to her, urban interests conspire against the rural poor to deny them access to significant amounts of credit, while Gonzalez-Vega (1989) based his argument on the supply allocation problems within financial institutions. He identified widely used concessional interest rate policies coupled with a relatively high transaction costs for servicing small loans and new borrowers as the factors that discourage financial institutions from lending to the rural poor. Another plausible explanation is that because most poor rural households lack profitable investment opportunities, they do not seek formal credit, nor are they aware of the availability of formal credit, or are too timid to request formal loans. Another significant factor playing a role in household credit accessibility is the differences in borrowing costs among various types of lenders. These discrepancies in costs strongly affect the willingness of the rural poor to seek loans from formal lenders. Some of the factors, which influence the accessibility of credit to poor rural households, are discussed in this section.

#### **4.3.1 Risk**

Spio (2006) describes risk as a blessing as well as a curse of rural finance. It is risk that motivates lenders' efforts to remain liquid so that payments are honoured on demand and to remain solvent by using profits to build capital. Risk is the essential element of finance (Von Pischke, 1994). This is illogical because it is risk that unseats systems, institutions and projects that issue excessive credit, risk translates otherwise rational behaviour into forces that depreciate

credit contracts and destroys credit institutions. Debtors are unable to pay, creditors are unable to collect or both (Spio, 2006).

From Herath (1996) and Barry and Lee (1983), six sources of risk for an intermediary can be identified, which include:

- i) credit risk from potential delinquency or default by borrowers,
- ii) investment risk from capital gains or losses on securities sold before maturity,
- iii) liquidity risk from possible losses of funding resources,
- iv) cost of funds risk from unanticipated changes in the cost of funds,
- v) financial risk from intermediaries' high financial leverage, and
- vi) regulatory risk from unanticipated changes in the regulatory environment.

One source of credit risk that is more prominent in rural credit markets is information asymmetry. Imperfect information about the likelihood of default has several fundamental implications for the nature of credit markets (Blinder and Stiglitz, 1983; Herath, 1996). It gives rise to institutions that specialize in acquiring information about default risk, hence influencing the behaviour of the lender towards its clients. It is easy for a lender with superior information to distinguish between good and bad risks. With such superior information, a lender's ability to identify the borrowers with the best investment opportunities improves greatly. Lenders can discriminate between borrowers only in very broad terms, and will indiscriminately adopt rational and/or irrational methods to reduce risk when information is poor.

Lenders may raise interest rates charged on loans to cover risk; this approach may lead to adverse selection. To illustrate how the adverse selection problem arises in financial markets and how interest rate can be used as a direct screening mechanism to differentiate the risky projects from the safe ones. It is assumed that both borrowers and lenders are risk-neutral, and there are two groups of borrowers, safe and risky ones, and the value of output if successful, while the bank is assumed ignorant of the probability of success of the individual borrower projects. Even though it is assumed that the bank is ignorant about the characteristics of each individual project, it does know the value of the common expected gross returns of the two projects.

In the model developed by Stiglitz and Weiss (1981), it is indicated that lender does not use the interest rate as a screening device because changes in interest rate may affect the riskiness of the pool of borrowers. The implicit assumption is that riskier borrowers have access to risky projects with lower probability of success but higher return if they succeed, while safe borrowers have projects with higher probability of success but a lower return. For any class of projects with the same mean gross return but differing risk, the interest rate can be used to determine the riskiness of a project. At a certain low interest rate, even low return low risk projects will survive. As the interest rate increases, low return projects will start to yield negative expected returns. Thus, the higher the interest rate, the higher the expected return must be before a borrower finds it worth borrowing for his project. All remaining projects that give the borrower a higher expected net return entail a lower probability of success. Borrowers with low return, low risk project will drop out of the credit market, because they are unable or unwilling to pay higher interest rates. Therefore, the bank cannot use the interest rate as a signalling mechanism.

However, this analysis of credit market is contrary to the classical teachings of the market mechanism. At a given interest rate, if there were excess demand for loan, the classical economic analysis would suggest that the price (interest rate) would rise to offset excess demand. However, in the presence of asymmetric information, the lender will choose to keep the interest rate low enough to obtain a favourable risk composition of projects and to ration the available loanable funds through other means. Therefore, quantity demanded may exceed quantity supplied, while the interest rate does not rise as a result.

Another form of information asymmetry problem is moral hazard. This occurs in credit markets if an increase in the interest rate induces borrowers, who have a choice of projects, to invest in a project that yields the bank lower return than another project in which the borrowers could have invested. It is assumed that both the lender and borrower are risk-neutral that a borrower has an investment choice between a risky and safe project. The riskier project has a lower probability of success but a higher pay off if it succeeds, while the safe project has a higher probability of success but with lower return. However, the bank does not know which project has been chosen.

In this case, the interest rate acts not as selection mechanism, as in the previous case, but as an incentive mechanism, since it affects the actions taken by the borrower once he obtains the loan. At lower interest rate, it is worthwhile for the borrower to invest in safer project that brings positive returns. However, as the interest rate continues to rise, the borrower is induced to switch from the safer project to the risky one, because with the increase interest rate the safer project starts to yield negative net returns. In other words, the higher the interest rate, the higher the net

expected returns has to be, and only the risky project will fetch higher expected returns, which induces borrowers to opt for it.

This switch affects the expected returns of the lender because of the limited liability characteristics of the loan contract. If the project is successful, the lender will receive at most the loan amount with the accrued interest, while if the project fails, the lender will receive nothing (or any residual value). The expected returns to the bank are lower for the riskier project than for the safe project. Expectedly, due to the moral hazard problem, banks tend to keep the interest rate low and instead ration credit in order to curb excess demand (See: Herath, 1996; Yazdani and Gunjai, 1998).

Different financial markets try to come up with mechanisms to reduce information asymmetry. The formal financial institutions tends to tackle the adverse selection and moral incentive problems by imposing stringent collateral requirements or restrictive agreement, or by requiring borrowers to provide carefully documented evidence, showing their intention and ability to repay (Floro and Yotopoulos, 1991). The MFIs uses mechanisms that make credit arrangement possible without the use of traditional methods employed by the formal institutions. By using mechanisms such as social networks, social ties and social sanctions, MFIs are in a position to reduce the selection, incentive and enforcement problems inherent to credit transaction, which may not be effectively handled in the formal institutions.

Lenders in some cases may also devise contracts that will provide a strong incentive for its clients not to default, such as contracts in which both the rate charged and the availability of

credit at a time in future will depend on the borrower's previous performance, *i.e.* based on the strength of previous relationship. This will thus create a "customer market" – linking particular borrowers to particular lenders.

Barry and Lee (1983) have identified other ways the lenders may choose to counter risks, which are:

- i) diversifying assets and liabilities in order to spread risks over various types of loans, investments, and funding resources;
- ii) diversifying geographically to spread credit risks over a wider area;
- iii) developing loan participation and loss-sharing agreements with other institutions; and
- iv) utilising loan insurance, government guarantees, security requirements, customer counselling, documentation, supervision and avoiding loan risk and other activities.

Some of these approaches have reduced the accessibility of credit to poor rural households. Therefore, to be able to manage risk effectively and efficiently, information is not only a necessary condition but must be sufficient and adequate. Accordingly, the greater the amount of relevant, valid and timely information that can be gathered about the affairs of a loan applicant and the markets in which the client operates, the more refined the rational credit or investment decision. In fact, according to Von Pischke (1994), this is often used to create confidence in the financial markets.

### 4.3.2 Credit Rationing

In economics and banking, the concept of credit rationing is commonly used to describe a situation when bank limits the supply of loans, even though it has enough funds to loan out, and the supply of loans has not yet equalled the demand of prospective borrowers. Jaffee and Modigliani (1969) defined credit rationing as a situation whereby demand for commercial loans exceeds the supply of these loans at rates quoted by the banks. Bester (1985) viewed credit rationing as when some borrowers receive a loan and others do not, although the latter would be willing to pay even higher interest or to offer an increase in collateral. However, according to Jaffee and Russell (1976), credit rationing occurs when lenders quote an interest rate on loans and then proceed to supply a smaller loan size than demanded by the borrowers.

There is a great debate about the rationale, mechanism and effects of credit rationing on both borrowers and lenders, because of the interest of various governments and donor agencies to advancing credit to smallholder farmers, micro-enterprises and the rural poor and the asymmetric information characterising most rural credit markets.

The theory of asymmetric information comes from the discipline that is known as “economics of information”. The basic teaching of this discipline is that many markets such as labour, finance and insurance, information is asymmetrically distributed and is costly to acquire (Akerlof, 1970). Information asymmetry models assume that at least one party to a transaction has more, better or relevant information than others (Brown, *et al.* 2004). This creates an imbalance of power in transactions, which can sometimes cause the transaction to go awry. According to Stiglitz (1989), financial contracts include elements that lead to the basic problems of adverse selection and moral hazard. In adverse selection, the ignorant party lacks information while negotiating an

agreed understanding of or contract to the transaction, whereas in moral hazard the ignorant party lacks information about the performance of the agreed-upon transaction or lacks the ability to retaliate for a breach of agreement (Aboody and Baruch, 2000; Brown, *et al.*, 2004).

In the next section, the rationale for financial institution credit rationing by non-price mechanism and the reasons for favouring larger clients over small clients in this process will be explored.

#### **4.3.2.1 Rationale for Credit rationing by non-price mechanism**

According to Spio (2006), if the basic tenets of economics are to be followed, then credit rationing will not exist because market equilibrium results when demand equates to supply. Stiglitz and Weiss (1981) posited that credit rationing is not necessary if prices perform their job well, but in reality, it does exist. They explained this phenomenon based on the idea of short or long-term disequilibrium. In the short term, credit rationing is viewed as a temporary disequilibrium phenomenon in which the economy is said to have incurred an exogenous shock, resulting in some stickiness in the cost of borrowing (interest rate), creating a transitional period during which rationing of credit occurs. Governmental constraints such as usury laws are used to explain long term credit rationing.

Braverman and Guasch (1986) and Schrieder and Theesfeld (2000) have identified a variety of factors that seems to induce the allocation of credit under competition in the form of rationing, which include:



- i) *Finiteness of Client's Wealth:* Clients' liabilities are postulated to be bound by an amount no greater than their wealth; hence, lenders find it optimal to set credit limits (Spio, 2006). According to Bradford *et al.* (1996), it is normal for the client's equity to offer the lender some protection against loss from default. However, it is the client's overall equity position on an unsecured loan that is relevant, usually measured by the ratio of down payment to value. In general, the supply of credit is a positive function of these ratios, given that the larger the client's own investment or equity relative to his/her borrowed funds, the less the risk to the lender that adverse circumstances will reduce the value of the collateral below the outstanding principal of the loan and thus lead to default. According to Bradford *et al.* (1996), the demand for credit will tend to be a negative function of these ratios because of the existence of "marginal" borrowers for whom equity or down payment requirements represent an effective constraint on borrowing and spending.
- ii) *Adverse Selection and Incentives Effects:* Credit markets are characterised by imperfect information that disables interest rates from playing its classical market-clearing role (Baydas *et al.*, 1994). If there were perfect information and no cost incurred in information gathering about borrowers, lenders would be able to stipulate precisely all the actions that the borrower would undertake which might affect the returns on the loan given to him. However, due to information asymmetries, and the situation obtained in most rural financial markets in developing countries, where the credit histories of borrowers are not documented and pooled, and the lender is not able to control directly all the actions of the borrower. Should lenders increase the

lending rate to compensate for higher cost of information gathering and its reliability; this may result in adverse selection and moral hazard (See Stiglitz and Weiss, 1981; Blinder and Stiglitz, 1983; Bester, 1985; Herath, 1996; Bradford *et al.*, 1996; Chaves and Gonzalez-Vega, 1996). Both forms of behaviour of borrowers could negatively affect the lenders' returns on loans.

Adverse selection occurs where borrowers with safe and low default risk projects choose not to borrow because of high and rising interest rate, while more risky projects with potential higher returns but higher probability of default are attracted into the market. An increase in the interest rate increases the probability of attracting projects with high probability of default, which reduces lenders' returns on loans.

A rise in the lending rate may also create an incentive or moral hazard problem that induces borrowers to undertake riskier projects that promise higher returns but with high probability of default. The lenders often use a variety of screening devices in the formulation of the loan contracts in order to protect its interest, enhanced the likelihood of repayment and attract low risk borrowers. They may therefore find it optimal to charge lower than equilibrium interest rates and use non-price mechanism to ration credit (Hoff and Stiglitz, 1990).

- iii) *Small Clients versus Large Clients:* small farmers and poor households alike are often discriminated against in favour of the large farmers/households in the credit market especially for agricultural loans, mainly because of the high risks and costs associated

with lending to them; and secondly when the lenders rely on farm size as an (imperfect) indicator of individual farm characteristics. According to Spio (2006), because farms are imputed to possess the average characteristics of the group, relatively productive and low risk small farms are offered discriminatory contracts, which discourage credit use and further distorts equilibrium credit allocation away from small farms. This distortion is based on information asymmetry, which would be reduced if lenders faced lower information cost, by efficiently collecting better information about their prospective clients (Carter, 1989).

Lenders would only lend to the small farmers/poor households (at the margin) only if they can charge or transfer the proportionally large transaction costs of the small loans to the small clients, either as a fixed fee or an increased interest rate. However, when they cannot shift costs, the existence of markets from the supplier's side for small clients will cease (Binswanger and Sillers 1983).

Two contractual restrictions, such as, the imposition of a collateral ceiling and high interest rates, are used by lenders to ration the small farmers in the credit market (Carter, 1989). Most small farms have vague legal title, and this gives them only limited net collateral value, which restricts their feasible loan terms. If interest rate restrictions are imposed exogenously, the conventional result applies *a fortiori*. With restricted interest rates and high collateral requirements, offering loans to small farms to yield the requisite expected profit level may not be attractive. With binding interest rate ceilings, lenders would shift their lending to better collateralised and, on the

average, safer and more productive large farms at the expense of the small farms. Lenders would still prefer lending to large farms than to small farms and would ration credit accordingly, even under the same collateral ceiling. Carter (1989) has identified the key factor of credit rationing as the variability in production, which makes small farm loans risky and unprofitable, while the systematic outcome of profit maximizing behaviour of competitive lenders is the reason why credit is made available to large farms.

#### **4.3.3 Transaction Costs**

It has been argued that high transaction costs are the major factor discouraging many of the rural poor in developing countries from using formal loans. According to Gonzalez-Vega (1993) and Olomola (1999), transaction costs have clearly influenced on the structure of rural financial markets and the behaviour of participants. Gonzalez-Vega (1993:32) identified that improved access to financial services is determined by “changes in the environment in which financial institutions operate, changes in the policies that regulate their behaviour, changes in their organisational design and operational procedures, and changes in financial technologies”. Transaction costs constitute one of the major determinants in such policies.

According to Spio (2006), transaction costs are an appropriate measure of the higher degree of “friction” in the functioning of these markets. Transaction cost is inversely proportional to market efficiency. The higher the transaction costs of financial intermediation, the less efficient is the performance of the financial markets, and the more constrained is their contribution to development. Higher transaction costs limit the services that the financial institutions are willing

to provide to the rural poor and their new clients. High transaction costs encountered by clients of financial institutions have been a major obstacle discouraging them from seeking loans and making deposits. According to Adams and Canavesi (1992), if rural financial intermediation is to be sustained and expanded, it will largely be dependent on a decrease in transaction costs for both the institutions and their clients.

Insights into how efficiently and equitably rural financial markets are functioning is provided by information on transaction costs. If the clients of rural credit markets are incurring high transaction costs, there is a likelihood that relatively few people are being served by these markets and that the qualities of services provided to clients are poor. It also an indication that intermediaries are inflicting extensive transaction costs on non-preferred clients, which shows that interest rates are not doing an efficient job of rationing credit. According to Adams and Higurashi (1987), a decline in total transaction costs is a sign that intermediaries are successfully innovating, that more people have access to financial services and that the quality of services is increasing.

The costs of financial intermediation are not shared in fixed proportions between borrowers and lenders. According to Adams (1978), the intermediaries can transfer, absorb, or in some cases, increase transaction costs incurred by various classes of individuals through a rationing device, depending on whether they are preferred or non-preferred clients.

#### **4.3.4 Delinquency and Default**

Delinquency is the inability of borrowers to repay their debts on time, while default is the inability or failure to repay them at all. This is a serious problem and has been a widespread experience for the past few decades. In most developing countries credit repayment, especially smallholder agricultural credit has been a major problem (Chirwa, 1997). Loan delinquency and default has continued to threaten the existence of most formal lenders. According to Sharma and Zeller (2000), delinquency and default not only decapitalise the institutions and increase their reliance on donors and governments, but they also discourage lending to specific target groups. Credit institutions and programmes in many developing countries have become liquidity constrained largely because of poor loan repayment. These massive defaults and delinquencies have destroyed the long-run efforts to create viable rural lending institutions.

However, informal lenders have often innovatively succeeded in reducing the incidence of default and delinquencies. For instance, by lending to groups of borrowers, the joint liability and social collateral that is created ensures the strict screening of members, the incentive to honour commitments and members of the group monitoring each other's actions. According to Mosley and Hulme (1998), intensive loan collection either monthly or more frequently and loan supervision measures have been found not only to be effective in limiting default, but also to pass-cost analyses.

Another set of effective measures used employed by informal lenders to limit loan default is the provision of repayment incentives, such as pardoning part of the final interest payment if all payments are received on time; speeding up subsequent loan approvals; and increasing

borrower's credit limit if repayment are made on time (Mosley and Hulme, 1998; Schmidt and Zeitinger, 1994).

Credit availability, and timeous access to it, is of importance to the poor rural households. Thus, if repayment is not necessary, then there will be no place for credit and therefore, any funds advanced cannot be defined as credit. According to Spio (2006), if credit does not return to the lender, revolving funds will not revolve, and to make things worse, new money will not come out from the original sources, which are the savers. Fry (1988) and Hunte (1993) have identified excessive arrears and default rates as an indication of inefficiency either because the financial institution has financed unproductive investments or it has failed to press for loan repayment.

#### **4.3.5 Interest Rate**

Interest rate is the cost associated with borrowing. In other words, it is the rent or level of compensation a borrower of funds must pay a supplier, or the compensation a lender gives a saver. The interest rate is used as a regulatory device to control the flow of funds between suppliers and demanders, and/or keepers and savers. Thus, the interest rate represents the cost of the money. It is a key variable influencing the actions of financial institutions, borrowers and savers (Mohane *et al.*, 2000).

The common feature of most credit programmes is the subsidization of interest rates. There are numerous arguments for subsidized credit in rural financial markets and deeply held convictions about its desirability. According to Von Pischke, (1991); Ellis (1994); and Lariviere and Martin (1999), the artificial low interest rate policies have been justified on the following grounds:

- i) They serve as an income transfer device to the poor, who cannot afford expensive credit.
- ii) High rates contribute to inflation.
- iii) Low interest rates induce borrowers to adopt new technologies and increase production.
- iv) Such policies have been adopted in advanced economies, so why not in developing countries
- v) The concessions provided by development agencies should be passed on to farmers.
- vi) Religious and ethical values; and
- vii) They are the second best alternative if the government cannot improve the economy.

Low interest rate policies have failed to achieve their primary objectives of promoting agricultural production and assisting the poor. Von Pischke (1983) has argued that subsidized credit is not a cost effective approach for promoting most of the activities mentioned in the preceding section. An unprofitable investment cannot be profitable, just because credit is subsidized. Credit does not create (non-existent) technologies, just as it does not make the required (unavailable) inputs accessible, nor build the (missing) infrastructure (roads, storage facilities). In addition, credit does not create the (absent) markets, does not engender comparative advantages, and does not reduce yield uncertainty. In particular, credit does not modify relative (social and private) profitability, or create investment opportunities that do not exist. Credit simply transfers generalized purchasing power to borrowers who still face the same investment



options. According to Meyer and Nagarajan (1988), subsidized credit is obviously a weak instrument to achieve most of the intended objectives and evidence emanating from most developing countries points to the fact that subsidized credit cannot compensate for high input prices, low product prices, unstable input supplies, poor information and transportation systems, and complicated rules and regulations that favour large enterprises.

According to Vogel (1984) and Gonzalez-Vega (1993), there is an implicit subsidy, when interest rates do not reflect the social opportunity cost of the claims on resources transferred. Subsidized interest rates, contrary to their good intentions had regressive implications for the distribution of wealth in rural areas. According to Gonzalez-Vega (1993), only small farmer loan portfolios showed much concentration, as a few of the borrowers captured the principal fraction of the funds disbursed and the linked subsidies. The effects of low interest are widely documented in literature by Mohane *et al.*, (2000), the Strauss Commission (1996) and Spio *et al.* (1995).

Subsidized interest rates have been shown to restrict rural households' access to formal credit, it follows therefore that low interest rates cannot remove the monopoly of moneylenders in rural areas as it has been recognized that low interest rates cannot create the missing physical inputs, markets, or the technologies that keep the productivity of farmers low in many developing countries. Once the factors are in place (*i.e.* inputs, markets and technologies) subsidized credit will not stimulate the adoption of new technologies unless large loans are granted to many poor households. Subsidized interest rates will also lead to credit rationing and exclusion in the credit markets.

The general subsidization of lending interest rates in the rural economy has no strong economic justification, even for the rural poor. Nonetheless, scarce resources will be required to finance the start-up activities and institutional strengthening of emerging rural finance institutions. Grants are preferable to interest rate subsidies especially when income redistribution is pursued. According to Spio (2006), subsidies create a bias towards accepting investment projects with low returns. It allows borrowers' own funds or the funds of other lenders to be substituted for credit; it encourages excessive indebtedness, distorts incentives in favour of capital-intensive techniques of production, promotes corruption and the rationing of credit, and weakens borrowers' incentives for debt recovery. According to the Strauss Commission (1996), subsidised interest rates, unless the subsidy is fully paid through the fiscus instead of the banks, will result in lower returns to savers and higher costs for non-subsidized borrowers and will increase significantly many countries' inflation and fiscal deficits.

#### **4.3.6 Collateral**

Many lenders have come up with various mechanisms to reduce delinquency and to minimize the losses in the case of default by the client. One of the non-price mechanisms universally designed to increase the lender's expected profitability from a loan transaction, apart from screening potential borrowers according to creditworthiness criteria and credit rationing is the use of collateral and guarantees (Feder *et al.* 1988). Collateral, at a given interest rate, has three effects, namely:

- i) Its ability to increase the expected return of the lender and reduce the expected return for the borrower.

- ii) It can partly or fully shifts the risk of losing the principal from the lender to the borrower (Bradford *et al.* 1996) and;
- iii) It provides those borrowers who have low disutility of default with additional incentives to repay a loan (Binswanger and Sillers, 1983). According to Von Pischke (1983), an additional risk-bearing element, implicit in collateral, is the fact that it reduces the borrower's ability to incur additional debt.

Larr (1994) had defined collateral as an asset that upon liquidation is adequate to cover most or all of the lender's risk exposure, including principal, accrued interest and collection costs. Most of the definitions of collateral in formal finance fail to include collateral substitutes, which are used more often in the informal financial markets. To extend these definitions of collateral to include these substitutes, FAO (1996) defined collateral as an asset that a borrower agrees to forfeit in the event of loan default, or an asset that has the qualities to enforce loan repayment. To fulfil the above requirement, collateral should have certain features, which include:

- Appropriability - the ease of liquidation in the event that a lender defaults.
- Absence of collateral-specific - it should have low risk or be properly insured.
- Accrual of the returns to the borrower during the loan period (Binswanger *et al.*, 1993).
- Value - it should be valuable to both borrower and lender.

More often than not, physical assets such as land and real estate are used as collateral. Land is more commonly used as collateral, and is less risky than other forms of security, except in places

where legal inhibitions exist on mortgaging agricultural land. The use of land as collateral in rural areas depends on the extent to which the legal system as well as the socio-political environment enables actual foreclosure on agricultural land (Feder *et al.* 1988). Foreclosure is an easy accomplishment in countries where property rights are clearly defined.

It is also possible for movable assets and crops to be used as collateral especial in areas where some institutional lenders will not accept land as a collateral. However, using assets and crops as collateral has not been easy to maintain. Crops especially need to be stored in warehouses, grain silos, and a legal framework is needed for transfer of ownership to lenders in the case of default by clients. Where these institutional frameworks are lacking, crops are not reliable as collateral in formal financial markets. Savings funds, guarantee funds, warehouse receipts and insurance policies are other tradable assets that can be used as collateral.

In some cases however, credit market participants have employed a variety of collateral substitutes such as third party guarantees, threat of loss of future borrowing opportunities, tied contracts, loss of reputation and social ostracism especially where the market environment renders most assets less acceptable as collateral or where borrowers possess few collateralized assets.

However, land remains the most suitable collateral to use because of information asymmetry between lenders. Institutional lenders are heavily regulated, backed by usury laws, which stipulate a low interest rate; therefore, they cannot charge higher interest rates to compensate for risk posed by other forms of collateral or collateral substitutes.

The roles of collateral in rural credit accessibility have been defined by various theoretical models (Stiglitz and Weiss, 1981; Plaut, 1985; Bester, 1987) as signalling and enforcement functions.

**a) The Signalling Function:** These models are based on the assumption that borrowers with a low probability of default are likely to accept an increase in collateral requirements for a certain reduction in loan interest rates than those with a high probability of default. Therefore, borrowers' risk type is determined when they reveal their preferences between collateral and interest rates. Increases in collateral requirements always favour low risk borrowers over high-risk borrowers. However, according Devinney (1986), collateral will not perform the signalling function when the following conditions prevail:

- i) If interest rates are sticky;
- ii) If the marginal collateralization costs for high risk borrowers are less than for low risk borrowers so that they prefer to offer more collateral for a reduction in loan terms;
- iii) If low risk borrowers have less wealth that can be offered as collateral than high risk borrowers;
- iv) When lenders are not diligent in loan collection, high risk borrowers will be prepared to offer more collateral for lower interest with the hope that they can escape repayment and foreclosure of collateral; and
- iv) In the presence of re-negotiations on loan extension and collateral foreclosing at the end of a contract.

**b) The Enforcement Functions:** In these models, the basis lies on the assumption of a legal environment that facilitates loan enforcement and marketability of assets offered as collateral. Collateral performs the enforcement function by either reducing the lender's default loss or making it costly for the borrower to default. Therefore, it is recommended that high-risk clients be made to offer more collateral for a given loan size than low risk clients.

Restricted access to formal credit for poor rural households is often linked to inadequate conventional collateral like land. It is imperative therefore for formal lenders to consider the use of other assets rather than land in order to improve rural households' access to formal credit, as has been the case in the informal financial markets. Coetzee *et al.* (1994) have argued that alternative collateral (collateral substitute) which is more appropriate at the local level, should be used, which revolve around character-based collateral, referrals, linked contracts and building a relationship between the clients and lenders. Another channel to reduce the use of collateral in loan transactions is finding a solution to the persistent problem of information asymmetry in the rural financial markets.

#### **4.4 Empirical Evidence of Determinants of Credit Accessibility**

Although an increasing number of governmental and non-governmental organizations (NGOs) are involved in raising the efficiency of financial intermediaries targeting poor rural households, their effectiveness in improving the poor's access to financial services, especially credit, is below expectations (CGAP, 1995; Schrieder and Theesfeld, 2000; Zeller, 2000). As a result, the majority of the poor rural households are left out in the rural financial market. According to

Lariviere and Martin (1999), rural financial intermediation is expensive because participants are geographically scattered, financial transactions are small and rural incomes are often unstable. Clearly defined collateral is often not available and most rural households are less educated than their urban counterparts are. In addition, the cost of information gathering about poor rural households is high. The high costs naturally impede financial markets from making contact with rural people, especially the poor (Lariviere and Martin, 1999; Schrieder and Theesfeld, 2000).

Empirical evidence from literature suggests that household access to financial services both in the formal and informal sectors is influenced by institutional factors, product features and household socio-economic characteristics. From the institutional perspective, the location of the lender and its conditions for credit allocation greatly influence the probability of access. In a study by Porteous (2003), he observed that access to formal financial services in South Africa tends to be limited to salaried workers, therefore, excluding the poor, unemployed, self-employed and informally employed. This is attributed to the fact that most banks demand a pay slip as a pre-condition for account opening. Dallimore and Mgimeti (2003) also showed that long distances and high transportation cost constrained the poor rural household's access to formal financial services mainly located in urban areas.

Other factors include financial product features such as interest rates and collateral requirements. In a study by Kochar (1997), he examined the effect of formal sector interest rates on access to informal credit. The result from the study showed a positive and significant relationship between the formal sector interest rate and the probability of access to informal credit.

Bradford *et al.* (1996) have identified loan size and quantity rationing, and the interest rate charged to be the effects of collateral on credit availability and there is ample support for this assertion. In a study conducted in India by Binswanger *et al.* (1993), the result showed that the probability of obtaining loans from lenders was determined by the amount and the form of the client's assets that have high collateral value, and by his personal characteristics. The likelihood of getting better loan terms and a larger loan size was influenced by increases in the client's wealth. Also, in a study of 34 banks in the Philippines conducted by Llanto and Dingcong (1994), the results indicates that the probability of quantity rationing by these banks is lower when the ratios of the value of the collateral offered to the loan size is large.

Pledging of land collateral has been found to increase the amount of institutional credit offered. In a study in Thailand by Feder *et al.* (1988), the result of the disequilibrium model shows that institutional credit increased by 43 percent while it increases by 55 percent in the equilibrium model as compared to a loan without security. The result further revealed that a ban on land collateral is likely to result in efficiency loss as it will force lenders to spend more resources (at a margin) in assessing clients' creditworthiness, thereby shifting funds to clients who are less risky at the margin, thus reducing lending to farmers.

There exists an inverse relationship between collateral and interest rate. The higher the value of collateral, the lower the interest rate charged. In a survey conducted in some Indian villages, as reported in Spio (2006), the highest rates of interest were charged for loans without collateral, followed by loans secured with movable assets, while lowest interest rates were charged for immovable assets. Binswanger *et al.* (1993) also reported that small loans with high interest rates



were offered to borrowers without collateral while the reverse holds true for those clients with large amount of collateral. Naragajan and Meyer (1995) have identified that, the relationship between the collateral, loan size and interests rates depends on the following factors:

- i) limits on the assets available as collateral,
- ii) limits on loan-able funds by lenders,
- iii) costs of collateralization,
- iv) the institutional environment, and
- v) the availability of markets to liquidate collateral in case of loan default.

At the household level, borrower characteristics such as the strength of previous business relationships, borrowers' reputation in the market, borrowers' acceptance of interlinked credit contracts, borrowers' debt-service capacity and borrowers' wealth status all influences the household access to credit. In a study of informal lenders and their clients in Chambar, Pakistan, Aleem (1990) was of the opinion that informal lenders mainly used their established relationship with clients as a screening mechanism. Lenders will generally not entertain loan applications from households with whom they had not had previous dealings either in form of sale of harvested output or purchase of farm inputs. The longer the period of business relationship, the higher will be the likelihood that the household will have credit access. This is because business relationships provide the lender with important information about the potential borrower, including his marketable surplus and the way he conducts business. Empirical evidence from the study by Kochar (1997) also showed that the likelihood of access to formal credit is influenced positively and significantly by whether personal guarantee are given for informal loans,

especially if personal guarantees can serve as alternative collateral that is valued by informal lenders.

Bell *et al.* (1997) found that interlinked credit contracts and visible household assets have a positive and significant influence on the amount of credit supplied by informal credit agents, while Baydas *et al.* (1994) observed that interest rates, loan period, business profits, and education level had a positive and significant influence on the amount of informal credit supplied.

In a study of rural credit accessibility in Northern Nicaragua, Vaessen (2001) showed that both institutional and household level characteristics influence access to credit. At the institutional level, the target group (either women, men or both), the selection criteria of clients, the geographical area of operation, and the features of financial products to be provided to address sustainability concerns, all which influence credit availability are important factors which lenders based their decision on. At the household level, being part of the target group or living within the targeted geographical area also influences credit access. The results from the logit regression showed that education level, off-farm activities, and access to a network of information and recommendation are all positively and significantly influencing the probability of access to credit. The off-farm activities, captured by a trader dummy was used as a proxy for repayment capacity while the network of information and recommendation acts as a screening mechanism where potential clients are required to be recommended or guaranteed by existing clients, thereby acting as social collateral.

Access to credit from the Gambian Co-operative according to Zeller *et al.* (1994) was influenced positively and significantly by age and household income, while being female had a negative and significant effect. This result implies that an older person who had control of household resources is likely to be rated to be more creditworthy, while women were discriminated against in the credit market. In the view of Daniels (2001), collateral requirements are a major determinant of household access to credit especially in the formal sector. He observed that the low levels of collateral among the poor, largely, explained their limited access to financial instruments in the formal financial market.

#### **4.5 Conclusion**

Credit access can be defined as the supply side phenomenon of credit markets, because the lenders decide whether borrowers can access credit or not. The credit process involves two distinct stages. In the first stage, borrowers who have demand for credit decide how much funds to apply for and from which particular lender (formal or informal sector) at the prevailing market interest rates. This process constitutes the demand side. In the second stage, the lenders decide who accesses credit and what amount, which constitutes the supply side. Market imperfections and information asymmetry problems raise the probability of default risk, thus lenders do not sell loan contracts to every willing buyer (borrower) at the prevailing market price (interest rate). The interest rate as the price for credit therefore fails to play its market-clearing role of equating credit demand and supply, thus giving rise to equilibrium with credit rationing.

As in many countries in Sub-Saharan Africa, the majority of poor households in South Africa are left out financial (credit) market systems. It has been argued the most rural households in South

Africa are too poor and cash-strapped to benefit from any kind of access to credit, they are essentially shut out of credit and savings services because they did not meet the traditional criteria for borrowing. Financial institutions perceived them as bad credit risks. They incur high information costs to assess the creditworthiness of small borrowers, and have low returns due to the small loan amounts involved. This motivates them to adopt strict collateral requirements as a screening mechanism to minimize default risk, hence rationing out the poor from the formal credit market. At the household level, the low levels of income and asset accumulation and highly skewed income and asset distribution render the poor households to have a high-risk profile, which makes them less attractive to formal lenders. The poor with no access to formal sector credit have to revert to the informal financial sector to meet their credit demand for both productive investment and consumption smoothing. Therefore, poor households' limited access to formal financial risk management instruments (savings, credit and insurance) constrains their ability to cope with shocks and further increases vulnerability to poverty.

Given the nature of poverty and the way it is conceptualised in South Africa, it is argued here that, it is the intersection between access to credit, income, services and assets that the issue of overall poverty trends among the poor rural household should be examined. Even when households have access to some credit, they may still have a binding constraint *i.e.* they may not be able to borrow as much as would be optimal under given terms and prices. They may face terms that are inconsistent in timing with the investment, and may be stuck in poverty. In the next chapter, the concept of credit constraint and its measurement is explored.

### 5.1 Introduction

The focus of this chapter is to present a brief literature review on credit constraint. A concise definition of credit rationing/credit constraint and a review of the existing approaches for measuring access to credit and credit constraints are presented. The weaknesses in the simple versions of the life-cycle/permanent income hypothesis (LC/PIH) as an approach for detecting credit constraint are exposed. This chapter suggests a credit constraints framework for the classification of borrowers that is used in this study.

### 5.2 Credit Rationing and Credit Constraint

Despite the frequent use of the term “credit constraint” in economics literature, it is not clear that the term is always employed to refer to the same phenomena. In addition, access to credit and participation in a credit program are two distinct concepts, which are often confused to mean the same thing and are often used interchangeably in many studies. However, in order to satisfactorily analyse the socioeconomic determinants of both access to credit and participation in credit programmes and to assess their respective impacts on household economic outcomes, a clear distinction between access to credit, participation in credit programmes, and being credit constrained must be made.

Credit market literature distinguishes between access to credit and participation in credit markets, according to Diagne and Zeller (2001), a household has access to credit from a particular source if it is able to borrow from that source, although it may choose not to borrow for a variety of reasons. The maximum amount a household can borrow is a measure of the extent of access to credit it has and this is its credit limit. A household is said to have access if this amount is positive, whereas it participates in the credit market if it actually borrows from that source of credit. This implies that access to credit can be a constraint externally imposed on the households, while participation in a credit market is a choice made by a farm household. Thus, a household can have access but may choose not to participate in the credit market for such reasons as expected rate of return of the loan and/or risk consideration. In this connection, Eswaran and Kotwal (1990) argue that a non-participating household that has access to credit will still benefit if the knowledge of access increases its ability to bear risk, as it can be encouraged to experiment with riskier, but potentially high-yielding technology. The ability to borrow will also alleviate the need for accumulation of assets that mainly serve as precautionary savings, yielding poor or negative returns (Deaton, 1991).

When a household lacks access to credit or cannot borrow as much as it wants, it said to be credit constrained. Hayashi (1987) defined consumers as credit constrained if they face either some quantity constraint on the amount of borrowing (*i.e.* quantity rationing) or the loan rate available to them is higher than the rate at which they could borrow. Duca and Rosenthal (1993) argue that a farm household is credit constrained only when it would like to borrow more than lenders allow or if its preferred demand for credit exceeds the amount lenders are willing to supply. Stiglitz and Weiss (1992), on the other hand, describe credit constraints in two terms *viz*

redlining and credit rationing. Redlining refers to excluding certain observationally distinct groups from credit markets, rather than offering them a contract that require higher interest payments and collateral guarantee. Credit rationing refers to a situation in which, among observationally identical borrowers, some get loans and others are denied.

Zeller *et al.*, (1997) distinguish four groups of farm households in relation to credit constraints. The first, referred to as voluntary non-borrowers, are those who decline to borrow at will either because they have strong risk aversion and fear of getting into debt or because they are prudent and only would like to consume up to what they earn. Others who want to borrow less than their combined available credit lines from all lenders referred to as non-rationed borrowers. Rationed borrowers are those who want to borrow more than their available credit limit at a particular point in time. The last type of farm households, referred to as involuntary non-borrowers, are non-borrowers with no access to credit, or those who perceive that they are highly unlikely to get credit, so that the perceived borrowing costs outweigh the expected benefits of the loan.

On the supply side, quantity, transaction costs and risks are identified as relevant factors in the existing credit market literature (e.g., Feder, 1985; Foltz, 2004). First, farm households are credit-constrained if they face a binding supply constraint as limited by lenders' considerations. Second, as lenders may pass on transaction costs associated with screening, monitoring, and enforcing loan contracts to borrowers, as in the case of group lending scheme (Besley and Coate, 1995), farmers with investments profitable when evaluated at the contractual interest rate may not be profitable when transaction costs are factored in. Thus, they may decide not to borrow but remain credit-constrained. Finally, for households with access to credit, risk may reduce loan

demand and hence productivity. For example, Boucher *et al.* (2005) analytically show that in the presence of moral hazard lenders require borrowers to bear some contractual risk, and if this risk is sufficiently large, farmers will prefer not to borrow even though the loan would raise their productivity and expected income. Lenders assess creditworthiness of their clients based on observable characteristics (Bigsten *et al.*, 2003), and extend loans at certain interest rate. This means that borrowers are credit-constrained if, at specific interest rate, they would have liked to borrow larger amount than the lender supplied. In this case, the borrower exhausts this supply and then looks for another lender. However, the fact that this borrower exhausts its supply from one source, at specific interest rate, makes it a risky borrower for another lender.

Credit markets in developing countries are inefficient due to market imperfections such as interest rate ceilings imposed by governments, monopoly power often exercised by informal lenders (Bell *et al.*, 1997), large transaction costs incurred by borrowers in loan acquisition, and moral hazard problems (Carter, 1988; Carter and Weibe, 1990). Stiglitz & Weiss (1981) argue that the problem where the lender bears risk of the transaction and the borrower obtains project benefits can be seen as an information problem. The asymmetries of information in credit market imply that first-best credit allocation is not possible, and this leads to the need for partial or full collateral. Then, inadequate collateral or lack of it implies that some individuals are denied credit, being otherwise identical to those who have the collateral and obtain the credits. In this connection, Banerjee (2001) argues that high-income individuals can borrow large amounts at low costs whereas low-income ones are able to borrow a small amount at high cost. This suggests that income or wealth level of borrowers has a direct relationship with the amount of available credit and an inverse relationship with cost of credit.



Moreover, lenders may not be allowed legally to charge above certain limits on loans, although informal lenders in practice may do so, as noted in Ethiopia by Emana *et al.*, (2005). If the lender is not allowed to charge an interest rate at which the expected return is positive, then there will be credit rationing. Even if allowed to do so, lenders may be affected by adverse selection and/or incentive problems so that the expected return on a loan may not monotonically increase with interest rate. That is, lenders may try to avoid selection and incentive problems by rationing credit.

For rural finance, access to credit, credit rationing, and credit constraints are related but distinct issues. According to Stiglitz and Weiss (1981), lenders are generally unwilling to distribute credit based on price alone because of transactions costs and asymmetric information. Credit markets are subject to credit rationing when lenders provide less than they could at the prevailing interest rates and allot credit based on non-price considerations. A potential borrower may be unable to borrow a desired amount, under credit rationing, even if he/she is willing to pay the prevailing interest rate. When a firm or household lacks the finance from any source to undertake an investment that is profitable at the prevailing input, factor, and output prices, it is said to be credit constrained. It is possible for a credit-constrained agent to have access to some credit, but not be able to borrow as much as would be optimal under the given terms and prices or may face terms that are inconsistent in timing and investment. Consequently, households with access to credit may or may not be credit constrained. For households with no access to credit at all, the same holds true. A household with no access to credit and who also has no investment needing finance is not credit constrained, but one with an investment opportunity and lack access to finance may be constrained.

Two distinct stages are involved in the credit process. In the first stage, which constitutes the demand side of the bargain, the household who wants credit decides on the sum to apply for from a particular source at the prevailing market price. In the second stage, the lender makes a financing decision on the loan application; this constitutes the supply side of the bargain. The lender undertakes the screening of the potential client based on observable characteristics in order to minimize default risk; the results of this screening influences the lender's response to the client's credit demand. Three outcomes are possible, firstly, the loan amount demanded by the client may be fully granted by the lender. Secondly, the loan amount demanded by the client may be partially granted by the lender and thirdly, the loan application may be completely rejected by the lender. The two last scenarios represent credit constraint; the state in which the borrower is constrained in his/her access to credit markets or is credit rationed by the lender (Zeller, 1994).

Access to credit does not imply that the demand for credit will be satisfied. Lenders determine how much credit is allocated based on the probability of loan default, often resulting in credit rationing. The probability of default may be influenced by a number of factors that include the expected returns of the project, the terms of the loan, market imperfections and borrower characteristics.

The expected return on the borrower's proposed investment project plays a key role in influencing the lender's credit rationing behaviour (Kochar, 1997). Here the interest rate plays the role of a screening device. If the expected return, is less than the principal loan amount plus interest (the terms of the loan), then the probability of default will be high. In such a scenario, the

optimal lender's decision will be either to ration the borrower by granting a smaller amount than originally applied for or to reject completely the loan application.

Credit markets are characterized by imperfect information that disables interest rates from playing their classical market-clearing role (Baydas *et al.*, 1994). Information asymmetry in credit markets arises because borrowers have better information about their potential risk of default than the lenders (Aleem, 1990). This asymmetry is compounded in informal credit markets by the fact that the credit histories of borrowers are not documented and pooled. The costs of acquiring this information are very high, in terms of both time and financial resources. The other complication is its reliability. If lenders collect such information from the potential borrowers themselves, borrowers are likely to give an exaggerated view of their creditworthiness. This raises the need to validate such information from other sources. Furthermore, if lenders try to collect such information from other community members, there is a tendency to withhold information if the one soliciting such information is a stranger. Should lenders increase the lending rate to compensate for the higher cost of information gathering or the level of reliability of the information, this may result in adverse selection and moral hazard, both forms of behaviour of borrowers which may negatively affect the lenders' returns on loans.

An increase in the interest rate increases the probability of attracting projects with a higher probability of default, which in turn reduces the profitability of lending operations. For this reason, lenders faced with information asymmetry and lack of control over actions of borrowers tend to design credit contracts that will induce borrowers to take actions that enhance the likelihood of repayment and also attract low risk borrowers. The lenders may therefore find it

optimal to charge lower than equilibrium interest rates and use non-price mechanisms to ration credit (Hoff and Stiglitz, 1990).

The specific borrower characteristics that influence the informal lenders' credit rationing behaviour include strength of previous business relationships, reputation in the market, and acceptance of interlinked credit contracts, debt-service capacity and wealth status. Aleem (1990) argues that informal lenders mainly use the established relationship with borrowers as a screening and credit rationing mechanism. The longer the previous business relationship, the lower will be the probability of the borrower being credit rationed. Bell (1990) further points out that because it takes so long to build a relationship with formal lenders (a minimum of one year), borrowers tend to stick to particular informal lenders so as to avoid the long screening process and high probability of loan applications being rejected by new lenders.

The reputation of the potential borrower is another important yardstick that influences the informal lenders' credit rationing behaviour (Siamwalla *et al.*, 1990). Since loans in the informal financial sector are mainly character loans (*i.e.* not backed by any collateral security), the borrower's reputation is of significant importance to the informal lender. For this reason, informal lenders invest both financial resources and time to gather information about potential borrowers from people known to them both in the market place and the villages where borrowers reside. The reputation of the borrower determines the probability of wilful default, which may be assessed through how he has performed in the repayment of loans borrowed from other people. Borrowers with poor reputations will more likely be credit rationed.

The informal lenders' assessment of the borrowers' debt service capacity (outstanding debt as proportion of total household income) will also influence the probability of their being credit rationed (Zeller, 1994). If the debt-income ratio is higher, the potential borrower is more likely to be credit rationed. However, the composition of the borrowers' outstanding debt is of significance to the informal lenders' credit rationing behaviour. If the outstanding debt is mainly from the formal financial sector, the informal lender may not be threatened, as he may expect to have a better chance of recovering his money as compared to the formal lender. In such a scenario, the potential borrower may be less credit rationed.

The borrowers' acceptance of interlinked credit contracts also determines their likelihood of being credit rationed (Udry, 1990). An interlinked credit contract acts as a disguised form of collateral that reduces the adverse selection and moral hazard problems and consequently reduces the probability of default. It also provides an added incentive for the borrower to repay the loan. Bell (1990) argues that there is an effective enforcement mechanism for interlinked credit contracts through co-operation among informal lenders. For example, if a farmer who has a contract with a trader/lender that links his borrowing to marketing his output then tries to sell his agricultural output through another trader, this trader/lender may deduct the loan plus interest and pass it on to the original trader/lender that the borrower is trying to dodge. The ease of enforcing the interlinked credit contracts explains why borrowers who accept them are less likely to be credit rationed. Non-interest credit rationing may be used by lenders to deal with information asymmetries. Interlinked contract is also prevalent in the formal markets.

In general, rationing can occur through price or quantity mechanisms. Price rationing arises when credit markets are cleared through interest rates or through the non-interest terms and conditions of the loan contract (Baltensperger, 1978). In contrast, quantity rationing, occurs when the borrowers are willing to pay higher interest rates to get larger loan amounts or even just to get a loan and the lender is not willing to accommodate this demand. The heterogeneity of loan contracts, non-simultaneity of transactions and imperfect information in credit markets may lead to equilibrium situations where an excess demand for credit may persist at the equilibrium interest rates.

Jaffee and Russell (1976) show how imperfect information and uncertainty can lead to rationing in credit markets. They introduced a model with honest borrowers (who want to repay) and dishonest borrowers (who are ready to default when the costs of defaulting are low). The lenders only know the distribution of these two types of borrowers but not the exact type of each individual applicant. In equilibrium, lenders offer contracts with loan sizes smaller than those needed to clear the market.

Using a model of credit rationing based on the inability of the lender to discriminate across borrowers despite the different costs and risks of lending to them, Gonzalez-Vega (1976) shows how credit rationing reduces access to credit in a non-uniform fashion across applicants. In particular, when the inability to distinguish comes from interest rate policies; credit rationing leads to the exclusion of the poorer applicants from access to credit markets.

Stiglitz and Weiss (1981) argue that credit rationing is an equilibrium phenomenon that occurs because, at some point, expected lender profits become an inverse function of the interest rate. Given limited liability, only high-risk borrowers would be willing to accept loans at high interest rates, as they perceive a low probability of repayment and insufficient penalties from default. This adversely affects the lender's profits, as it either creates a composition of riskier borrowers (because of adverse selection) or encourages borrowers to invest in riskier projects (because of moral hazard). In these circumstances, the bank reduces the number of loans it would make, leading eventually to a rationing equilibrium. Williamson (1987) relies on monitoring costs to produce credit rationing in equilibrium.

Borrowers can use collateral as a signalling device to show their creditworthiness. Low-risk borrowers may be willing to pledge collateral with higher values in order to get lower rates of interest. Bester (1985) argues that, because lenders do not know the type of borrower, in a credit-rationing equilibrium, there is a pool of high-risk and low-risk borrowers. This happens because, when high-risk borrowers do not get loans at high interest rates, they still apply for loans at lower rates of interest.

Most of the credit rationing models found in the literature, do not consider, however, the existence of the informal financial sector. Jain (1999) observes that enterprises in developing countries are active both in formal and informal financial markets. He emphasizes the informational differences between these two sectors. The informal sector has informational advantages over the formal sector; however, the opportunity cost of funds is lower for the formal sector. In the formal sector, because of the information asymmetry borrowers are rationed, while

the informal sector still lends to them. He argues that banks are more likely to opt for partial financing when the proportion of high-risk borrowers is high. In this case, the volume of transactions increases in informal markets. This also happens when interest rate ceilings are enforced.

Kochar (1997) investigated the extent of credit rationing in India's rural credit markets. She suggests that in order to understand the degree of rationing in the formal sector, information on how many applied and did not receive loans becomes relevant. She argues that the extent of rationing in the formal sector is less than what is generally assumed, as the reservation cost of informal credit for some households may be less than that of formal credit. In Kochar's framework, non-borrowers comprise those households that do not demand credit from the formal or informal sectors as well as those that ask for a loan from the formal sector but are denied and then choose not to apply from the informal sector.

Barham, *et al.*, (1996) analyzed the extent of rationing by categorizing producers into the following three categories, such as the fully constrained i.e. those who applied but did not receive a loan or those who did not apply due to high transaction costs, insufficient collateral or fear of risk, such as the loss of collateral. The partially constrained i.e. those who applied but received less than the amount they requested, given the terms and conditions of the loan contract and the Un-constrained, those who received the full loan amount they desired or those who were not interested in a loan.



Maldonado (2004) argues that households not using credit may not necessarily be quantity rationed and that those using it may be quantity rationed. Therefore, he groups borrowers into the four categories. The first category is the “price rationed without a loan” i.e. these are producers that did not need a loan or that did not apply for a loan because they perceived unattractive costs and benefits from doing so. The terms and conditions of loan contracts seemed too costly from their perspective. The second category is the “fully quantity rationed” i.e. these producers either applied for a loan but were rejected, or they were so risk averse that they did not feel comfortable being in debt, or they did not apply due to their high subjective probability of rejection. The third category is the “partially quantity rationed” i.e. these producers got loan amounts smaller than what they applied for, and the last category is “price rationed with a loan” i.e. these producers received the amount of loan they applied for.

In general, the theoretical literature above shows that credit market failures give rise to heterogeneous resource allocation and different outcomes among farm households with varying characteristics. That is, a farm household that faces a binding credit constraint, *ceteris paribus*, will misallocate its resources and under-invest compared to its unconstrained peer. Availability of finance and its accessibility crucially affect production start-up and subsequent performances of the households. Barriers to access adequate loans will have adverse effect on household welfare. Increased welfare output following improved access to credit is therefore evidence of binding credit constraint.

### 5.3 Empirical Studies on Credit Constraint

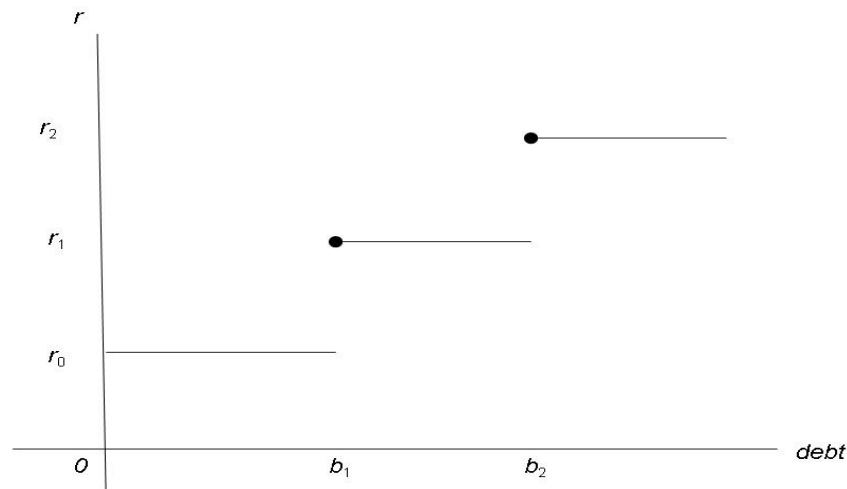
According to Grant (2000), it is believed by economists that at least some agents are credit constrained. Credit constraints are offered as one of the most important explanations for a wide variety of phenomena that are observed in economics, and also implicitly informs the policy debate, not only at the macro-economic level in motivating fiscal and monetary policy, but it also motivates micro-economic policies such as supporting small business investment.

The Euler equation framework has been used to analyse the effect of credit constraints (Hall and Mishkin, 1982; Mariger, 1987; Zeldes, 1989; Jappelli *et al.*, 1998). These studies focussed on explaining the increasing consumption growth rate, and suggested that the rejection of the standard Euler equation, in which predictable changes in income were found to affect consumption growth, may be due to credit constraints. For example using this method, Hall and Mishkin (1982), in a study to investigate the stochastic relation between income and consumption using panel data of about 2 000 households in the United States argued as many as 20 percent of households were constrained. Following the same approach, Zeldes (1989) grouped households based on their level of assets and found that while the Euler equation held for high asset households, this was not true for households with fewer assets. He thus concluded that credit constraints were prevalent among households with low assets. Jappelli *et al.*, (1998) grouped their sample by whether they were denied credit and reported similar conclusions.

Ever since the seminal paper by Hall (1978), consumption economists have questioned simple versions of the life-cycle/permanent income hypothesis (LC/PIH). This paper and many other succeeding papers have rejected the Euler equation formulation for consumption. Another strand

of the literature, for instance, Carroll and Summers (1991) showed how consumption tracked income over the life cycle, which again rejects the simple versions of the PIH. One of the most popular explanations for this is that at least some consumers face binding credit constraints. These consumers would like to borrow more in order to increase their level of consumption, which is compatible with their life-cycle budget constraint, but for some reason they could not borrow as much as they would like at the ‘market clearing’ interest rate (Hall and Mishkin, 1982).

For instance, Hayashi (1987) defined consumers as credit constrained if either firstly, they face some quantity constraint on the amount of borrowing or secondly, the loan rate available to them is higher than the rate at which they could lend. The first is often called credit rationing, and there are number of reasons behind such credit rationing by lenders, because some consumers default on their loans, and there is imperfect information as to which agents will default (Jaffee and Russell 1976; Stiglitz and Weiss, 1981). The decision to default is however not modelled; nevertheless, such models show that it can be optimal to restrict lending to consumers. Such models imply (see figure 5.1) that lending takes place in discrete jumps: there are a number of order points  $(0, b_1, b_2, \dots)$  between which lending takes place at a constant marginal rate of interest. At each of these points  $b_k$ , there is a jump in the marginal rate of interest charged (perhaps to infinity, in which case no lending occurs beyond  $b_k$ ).



**Figure 5.1:** The marginal rate of interest as debt increases

In addition, studies by Kehoe and Levine (1993) and Kocherlakota (1996) have attempted explicitly to model the decision to default by consumers. This literature aimed to explain the limited ability of consumers to pool risk. In these papers, the standard model of an infinitely lived, utility maximising consumer subject to a life-cycle budget constraint is augmented by an additional constraint on the consumer's behaviour. This additional constraint explicitly accounts for the fact that *ex post* the consumer may wish to default on his debt, and suffer any penalty that ensues. The punishment for default could take many forms but these papers concentrate on default resulting from autarky, in which the consumer is permanently excluded from both borrowing and lending. By solving these models for a decentralised market economy these models can endogenously create credit rationing in which the ability to borrow is restricted to some maximum level which depends on the parameters of the model. Above this maximum level, default is assured, and hence it is never rational for lenders to allow borrowing beyond this

limit. Such models differ from earlier literature in that information is perfect, and in that there is one interest rate at which lending occurs (if it occurs at all).

Hajivassiliou and Ioannides (2002) formalised how the Euler equation is affected by credit constraints, motivating their switching regression approach. Mariger (1987) tried to estimate the effective time horizon in the Euler equation and concluded that 19 percent of households were constrained. The rejection of the simple version of the PIH in the Euler equation is one problem with this approach, which could instead be due to misspecification of the Euler equation, a point that is well known in the literature. Hence, some papers have instead tried more directly to estimate or test for credit constraints. The problem is that, denoting  $C_i$  as a binary variable taking the value zero (0) if household  $i$  is unconstrained and one (1) if constrained, this variable  $C_i$  is not directly observed. In much of the literature, some proxy variables have been substituted for unobserved latent variables. For instance, Zeldes (1989) splits households by their level of assets: low assets households (with a gross asset to monthly income ratio of less than 2) are assumed credit constrained. He then documents how low and high assets households' behaviour differs. Japelli (1990) instead uses self-reported responses to a question about credit constraints contained in the survey of consumers' finances. The question asked if the householder had been rejected for a loan, or if he had failed to apply for a loan because he feared rejection.

In either case, having chosen the proxy variable, the observations can be partitioned, and those who are thought to be credit constrained can be compared to those who are not. When a suitable proxy variable exists, there is no need to estimate the incidence of credit constraints, but different groups can still be usefully compared. Japelli (1990) found that about 12 percent of households

are credit constrained; if discouraged borrowers are included, it rises to 19 percent. He also found that credit constraints were more often binding for low income, low assets, young, and black households.

In many cases, it is not clear what variable would be an appropriate proxy for credit constraints (Garcia, Lusardi, and Ng, 1997). They used a switching regression technique in the Euler equation, and noted that agents would react differently to increases and decreases in income if they are at the margin of being constrained. Their technique allowed constraints to be a function of several variables, and they found that around 16 percent of agents were constrained. Gross and Souleles (2002) looked at credit card balances and limits, and noted that consumers increased their borrowing in response to any increase in their limit: they interpreted this as due to credit constraints and argue that the effect of credit constraints on consumer behaviour was substantial.

Early estimates of the extra amount that households wanted to borrow, such as Hayashi (1985) and Mariger (1987) found by using an Euler equation approach, that credit constraints had little effect on debt holdings and consumption. Cox and Jappelli (1993) studied a cross section of households and compared a group who were assumed to be credit constrained (based on responses to a question about having been turned down for credit), with a group who were not. They found that constrained households would like to hold over \$8 000 more credit than they actually do.

Perraudin and Sorensen (2000) considered a two-stage estimation of asset holding, whereby a probit model predicted which asset types were held, while the second stage predicted how much

of each asset was held. They found that age, marital status, education, and sex all have substantial effects on both the type and quantity of assets. In contrast, Duca and Rosenthal (1994) looked at how liquidity constraints affected the ability of households to enter the mortgage market again using Jappelli's "turn-down" measure. Their model allowed for selectivity by using a bivariate probit model for the housing choice and whether a household was credit constrained or not, finding borrowing constraints particularly affect younger households. They asked whether household borrowed, but not how much.

Most often it is not possible to observe directly who is, and who is not, constrained. Moreover, although the focus is frequently on whether or not the individual is constrained it seems that the underlying question of interest is the determination of the supply and demand for credit. Accordingly, it seems valuable to examine whether one can learn anything about demand and supply for credit by examining the observed level of credit without observing whether or not the household is constrained or not.

One problem is that even if it were known which households were credit constrained, estimates of the demand, or other behavioural equations can still be biased. Estimates of the demand equation based only on those observations who are credit constrained (for which  $C_i = 0$ ) are likely to underestimate the true demand for credit among constrained households. Those households with unusually low level of demand, in the same sense that they have low errors draws in the demand equation, are less likely to be observed to be credit constrained. This selection problem must be accounted for when recovering a true estimate of how much more credit-constrained households want to borrow than they are currently allowed. This problem

occurred when Cox and Jappelli (1993) estimated how much more households wish to borrow, but was controlled for by Duca and Rosenthal (1994).

One approach, as in Grant (2000), is to make distributional assumptions about the unobservable factors generating the observed data and then recover the demand and supply equations by imposing the appropriate exclusion restrictions and then estimating the appropriate likelihood function. While this approach is attractive, in that it estimates the demand and supply equations, the estimation procedure is likelihood based and the resulting estimates, and their statistical properties, are thus sensitive to the distributional assumptions, in addition to any other parametric assumptions, of the model.

However, irrespective of the methodology employed most empirical literature reviewed below support that credit constraints could affect resource allocations, risk behaviour and technology choice and adoption in production, which may lead to lower welfare of credit constrained household compared to the unconstrained households. For example, better access to credit resulted in higher income and consumption in Bangladesh (Diagne and Zeller, 2001) and in higher farm profitability in Côte d'Ivoire (Adesina and Djato, 1996), Malawi (Hazarika and Alwang, 2003) and in Tunisia (Foltz, 2004). Examining sources of efficiency differentials among basmati rice producers in the Punjab province of Pakistan, Ali and Flinn (1989) found significant effect of farmers' access to credit and later Parikh *et al.*, (1995) also found that farmers with greater loan uptake were less cost inefficient than those with smaller loan size. Another study in Pakistan by Khandker and Faruquee (2003) reported formal credit's positive impact on household welfare outcomes. It was also found that formal credit increased rural income and productivity



and that overall benefits exceeded costs of the formal credit system by about 13 percent in India (Binswanger and Khandker, 1995). Significant difference in productivities of credit-constrained and unconstrained households was observed in China (Feder *et al.*, 1990; Feder *et al.*, 1989). In Bangladesh, Pitt and Khandker (1996) examined the impact of credit from the Grameen Bank and other two targeted credit programs and found significant effects on household welfare, including education, labour supply and asset holding. Freeman *et al.*, (1998) found that the marginal contribution of credit to milk productivity was different among credit-constrained and non-constrained farmers in east Africa.

More recently, studying the effect of credit constraints in Peruvian agriculture, Guirkinger and Boucher (2005) found that productivity of credit-constrained households depended on their endowments of productive assets and the credit they obtained from informal lenders. In Ethiopia, for example, Alene and Hassan (2006), studying the efficiency of traditional and hybrid maize production in eastern Ethiopia, found significant difference in farmers' technical efficiency due to differences in technology choice. The hybrid maize technology required adoption of a package of improved seed, chemical fertilizers, and cultural practices that farmers did not equally adopt, resulting in low technical efficiency differential. Part of the reason for the farmers' differential adoption of modern technology could be the credit constraints they face. Similarly, Holden and Bekele (2004) observed that households with access to credit compensated for increasing risk of drought by reallocating their production in such a way that crop sales were lower in good years to reduce the need to buy the crops in bad years. They argued that the households would be less able to do so without access to credit. Other efficiency studies in Ethiopia referred to earlier also identify access to credit as an important factor affecting efficiency of farmers.

It can also be seen that credit constraint is not only a problem of developing countries, where credit market imperfection is the norm rather than exception. The problem is present also in the developed world, where credit market imperfection is considered significantly lower (Blancard *et al.*, 2006; Jappelli, 1990; Färe *et al.*, 1990; Tauer and Kaiser, 1988; Lee and Chambers, 1986). For example, Blancard *et al.*, (2006), studying short- and long-run credit constraints in French agriculture (where 67 percent of 178 sample farms were financially constrained in the short-run and nearly all farms face investment constraints in the long run) found that financially unconstrained farms are larger in size and better in economic performance than financially constrained small farmers, resulting in a difference of about 8,34 percent in profit. However, the nature and extent of credit constraints in developed countries are significantly different from those in developing countries, where the imperfection is also prevalent in other factor markets.

In general, although credit is mostly identified as one of the socioeconomic factors affecting different outcomes such as farm productivity and profitability, and so on, only few studies have directly focused on the effects of credit constraints on household welfare. The generally limited studies explicitly addressing the effect of credit constraints on household welfare, suggest that more studies are still desirable.

#### **5.4. Measuring Access to Credit and Credit Constraints: A Review of Existing Approaches**

There are two methodologies for measuring household access to credit and credit constraints. The first and indirect method detects the presence of credit constraints from violations of the assumptions of the life cycle or permanent income hypothesis, while the second involves the

collection of information directly from household surveys on whether households perceive themselves to be credit constrained.

#### **5.4.1 Detection of Credit Constraints through Violation of Life-Cycle Hypothesis**

One of the testable implications of the simple version of the life-cycle/permanent income hypothesis (LC/PIH) in Hall (1978) and Deaton (1992) is that in the absence of liquidity and borrowing constraints, transitory income shocks should not affect consumption. Empirical models use household consumption and income data to look for a significant dependence (or “excess sensitivity”) of consumption on transitory income to test for the presence of credit constraints based on the life-cycle/permanent income or “consumption-smoothing” hypotheses. Empirical evidence of a significant dependence is taken as an indication of a borrowing or liquidity constraint. The LC/PIH literature is extensive and has been reviewed among others by Gersovitz (1988), Deaton (1989; 1992), Alderman and Paxson (1992), and Browning and Lursardi (1996).

The empirical evidence based on the LC/PIH approach, in general, has been inconclusive. The first reason that often comes to mind is to think that this is because empirical testing of the implications of the LC/PIH requires repeated observations on the same household, whereas most of the studies are based on relatively short panels. Nevertheless, there are more fundamental reasons why the evidence from the LC/PIH approach for detecting credit constraint has been inconclusive.

First and possibly the most important violation of the implications of the LC/PIH can result from prudent or precautionary behaviour, under condition of uncertainty, even if the household is not credit constrained (Kimball 1990; Carroll 1991). Many authors have extended the standard life-cycle model to clearly incorporate both liquidity constraints and precautionary behaviour, and assess through either simulation or empirical testing the importance of each effect (Zeldes 1989; Murdoch 1990; Deaton 1991; Paxson 1992). However, due to identification problems to separate the effects of credit constraints and precautionary behaviour from the type of income, consumption, and asset data typically available for these studies would be practically impossible (Browning and Lusardi 1996).

Secondly, according to Carroll (1991), if conditions of uncertainty are correlated with wealth, then even in the absence of borrowing constraints, current income will be negatively correlated with consumption growth. In addition, as Deaton (1991) clearly points out, the initial asset position of households is a major determinant of the effects of negative income shocks on consumption. Browning and Lusardi (1996) has outlined several other reasons why even without a credit constraint the implications of the LC/PIH may be violated. Furthermore, from the simulation results of Deaton (1991), there is an important insight that a credit-constrained household may still be able to smooth consumption with precautionary saving and therefore not violate any implication of the LC/PIH. For this reason, it is possible to conclude that the violation of an implication of the LC/PIH is neither a sufficient nor a necessary condition for being credit constrained.

#### **5.4.2 Detection of Credit Constraints by directly asking households**

The second method mostly used in empirical studies for detecting the presence of credit constraint uses information obtained directly from household members on their participation and experiences in the credit market to determine whether they are credit constrained or not. In practice, several qualitative questions regarding household loans applications (or lack of) and rejections during a given recall period are asked and households based on their responses are classified as credit constrained or not. This classification is then used to analyse the determinants of the likelihood of a household being credit constrained and the effects of this likelihood on various household outcomes in reduced form regression equations. Examples of this approach known as the direct elicitation methodology (DEM) include Petrick (2004) who evaluates the impact of credit constraints on farm output in Poland; Foltz (2004) who evaluates the impact of credit constraints on farm profit in Tunisia; and Carter and Olinto (2003) who examines the impact of credit constraints on investment level in Paraguay.

This method was first used by Jappelli (1990) with data from the United States 1983 Survey of Consumer Finances. Feder *et al.* (1990) using data from a household survey in China also employed this method. It was subsequently adopted by Zeller (1994), Schrieder and Heidhues (1995), and Barham *et al.* (1996) with data from Guatemala and Zeller, *et al.* (1996) with household survey data from Madagascar, Cameroon and Pakistan. The theoretical justification for the direct elicitation method, (*i.e.* by directly asking the households if they are credit constrained or not), can be found in the extended version of the life-cycle/permanent income model that explicitly allows for the possibility of a credit constraint. For instance, Jappelli (1990), in analysing the determinants of the likelihood of a household being constrained used

credit constraint inequality in the extended model to derive reduced-form equations. According to Browning and Lusardi (1996), an important contribution toward empirically identifying the respective effects of liquidity constraint and precautionary behaviour in life-cycle models is the information on household credit market experiences collected in the direct method.

## **5.5 Conclusion**

Stiglitz and Weiss (1981) have shown that asymmetric information and adverse selection typically prevail in credit markets, giving rise to credit rationing as an optimal behaviour. Furthermore, government interventions in form of interest rate ceilings or subsidized interest rates used to be common in many developing countries' agricultural sector has also necessitated rationing. Whenever credit supply is rationed, some borrowers cannot obtain the amount of credit they desire at the prevailing interest rate, nor can they secure more credit by offering to pay a higher interest rate. In such a circumstance, liquidity becomes a binding constraint on many farmers' operations.

Feder, *et al.*, (1990) have revealed that whenever liquidity is constraining, the amount and combinations of inputs used by a household will be lower than their notion optimal levels (the level that would have been utilized if liquidity was not a binding constraint). Access to credit can facilitate levels of inputs closer to their potential levels when capital is not a constraint. Provision of production credit can, therefore, lead to higher levels of output per farm and yield given fixed resources such as land. Policy makers and financial institutions however need to assess accurately the magnitude of the expected gain in welfare resulting from the allocation of credit for production purposes. If the marginal contribution of credit is zero or relatively small, then

reallocation of credit to other activities or sectors with higher marginal productivity may actually lead to an improvement in the welfare of the rural poor. The assessment of expected productivity gain is not trivial as the effect of credit is likely to differ between liquidity constrained and unconstrained households.

In this study, the impact of credit constraint on household welfare is evaluated in a developing country context where insurance mechanisms are weak and access credit requires that agents post collateral, so financing production with credit imply significant risk. The existing literature focused on the impact of supply side manifestations of credit market imperfections, namely, on the impact of quantity rationing (liquidity constraints) on agricultural productivity (Feder, 1985; Foltz, 2004).

This study builds on the existing literature in two ways. First, by defining credit constraint in a broader and more theoretical term. In the existing literature, households are classified as constrained if they demonstrate an excess demand for credit so that they face a binding supply constraint (they are quantity rationed). The second is empirical; the study explores the relationship between household welfare and their endowment for constrained and unconstrained households using a cross sectional data set collected in the Eastern Cape, South Africa. Specifically, the study estimates a switching regression model using the semi-parametric technique introduced by Maddala (1986). This technique allows the control both for selection into the observed constraint regime and endogeneity of explanatory variables. A detailed econometric specification of the switching regression model and other econometric models employed in this study is presented in Chapter 6.

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## CHAPTER 6

### RESEARCH METHODS AND ANALYTICAL TECHNIQUES

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#### **6.1 The Study Area: Socio-Economic and Demographic Profile of Amathole District Municipality**

The study was conducted in the Amathole District Municipality of the Eastern Cape Province. The Amathole District Municipality is a Category C municipality, which came into being after the local government elections in December 2000, when the Demarcation Act came into effect. Its area of jurisdiction is made up of eight local municipalities as follows: Buffalo City Municipality, Amahlathi Municipality, Nxuba Municipality, Nkonkobe Municipality, Ngqushwa Municipality, Great Kei Municipality, Mnquma Municipality, and Mbhashe Municipality (Amathole District Profile, 2007).

The Amathole District Municipality stretches along the coastline of the south-eastern part of the Eastern Cape Province taking the former areas of Ciskei and Transkei as well as former Cape Provincial Administration Areas. The district is mountainous in the northern and north-western parts sloping towards the coast in the east and south-west. It municipality incorporates the former magisterial districts of Willowvale, Idutywa and Elliotdale (Mbashe); Butterworth, Nqamakwe and Centane (Mnquma); Komga (Great Kei); Keiskammahoek, Cathcart and Stutterheim (Amahlathi); East London, King William's Town, Zwelitsha and Mdantsane (Buffalo City); Peddie (Ngqushwa); Fort Beaufort, Alice, Middledrift and Seymour (Nkonkobe) and Bedford and Adelaide (Nxuba) (Eastern Cape Province, 1995).



Amathole has the second largest population in the Eastern Cape after O.R. Tambo and has the third largest population density, which is, 70 people in one square kilometre. This varies widely across the municipalities, from 172 people per square kilometre in the urban centre of Buffalo City, to 6 people per square kilometre in Nxuba (Amathole District Profile, 2007).

The Amathole district is comparatively poor district in terms of poverty measures such as Human Development Index (HDI), which is estimated at (0,53), poverty gap (R1 682 million) and number of people living in poverty (66, 7 percent). The average income level in the area is US\$ 160 per household per month. Incomes are predominantly derived from social grants such as pensions and child support grants, remittances from migrant labour and natural resource use (Eastern Cape Province, 1995).

The population is predominantly African (92,49 percent). The white population makes the second largest (4,08 percent). Approximately 33, 4 percent of the populations are below 15 years of age. Almost 46 percent of the population is below 20 years. This is an indication of economic underdevelopment of this district, due to high child dependency. Women outnumber men in the Amathole district municipality, 46 percent of the populations are males and 54 are females. In a recent survey, 33 percent of all households sampled indicated that the household head was a woman while 43 percent of the sample households had no resident male members over the age of 18 (CSS, 1997).

A number of small state-sponsored irrigation schemes exist across the municipality but these are operating well below their potential, with production reduced by lack of supporting infrastructure and services, poor maintenance of equipment, lack of management and marketing skills, and

political conflicts. The area has a high density of semi-subsistence farmers. Between 50 – 60 percent of the rural households, enjoy some access to arable land. Somewhere between a quarter and a half of households, own cattle, although the great majority of herds are less than ten head. Small stock - sheep and goats - are owned by slightly more households than cattle, but average herd sizes are not substantially greater (Provide, 2005).

Many rural households are effectively self-sufficient in their staple foods. Small-scale livestock farmers sell limited numbers of livestock through private livestock traders for cash needs. Estimates of agricultural income, in terms of cash sales and produce consumed within the producing household, show great variability, but most studies put it at between 10 percent and 25 percent of average household income, of which the greater part is accounted for by direct consumption (Provide, 2005).

Levels of infrastructure development are well behind national averages. Ten percent or less of households have piped water with some 64 percent of the population relying on natural sources of water, such as untreated springs, streams, rivers and dams. Sanitation service levels are extremely low with more than 51 percent of households having no sanitation. School attendance in the area is good, but education levels remain low. There is a shortage of health services, which is exacerbated by a high incidence of HIV (Human Immunodeficiency Virus) and AIDS (Acquired Immune Deficiency Syndrome) (Amathole District Profile, 2007).

Access to the area is limited mostly to gravel roads, leading from the N2 towards the coast and this seriously hampers development opportunities and provision of services. The economy of the Eastern Cape is characterized by uneven development. This is evident in a number of dualisms:

between the two urban industrial manufacturing centres and the rural areas of the former homelands of Ciskei and Transkei; between a developed commercial farming sector and a subsistence agricultural sector; and between concentrations of fairly well developed and efficient social and economic infrastructure in the western parts of the province and its virtual absence in the East (Provide, 2005).

Figure 6.1 shows the map of Amathole District Municipality.



**Figure 6.1: Map of Amathole District Municipality in the Eastern Cape Province South Africa.**

## **6.2 Sampling Procedure**

A multistage sampling technique was used to select representative households for the study. The first stage involved the selection of three local municipalities from the Amathole District Municipality. There are eight local municipalities in the Amathole district municipality namely, Mbashe, Mquma, Great Kei, Amahlathi, Buffalo City, Ngqushwa, Nkonkobe and Nxuba. Among these, three municipalities were randomly selected for the study in the first stage, namely, Ngqushwa, Amahlathi and Nkokonbe. The second stage involved random sampling of six villages within these local municipalities. These areas are Peddie and Hamburg for Ngqushwa, Stutterheim and Keiskammahoek for Amahlathi, and Alice and Seymour for Nkonkobe. A reconnaissance survey was conducted to identify households that have applied for micro-credit, in the study period in these rural communities. In the third stage, twenty-five respondents were randomly selected to make them representative of the three municipalities. Respondents were restricted to those that had applied for credit in the year of the survey. One hundred and fifty households were interviewed in the survey exercise. To complement this, lists of borrowers was also obtained from Eastern Cape Rural Finance Corporation, (ECRFC) otherwise known as the UVIMBA FINANCE.

The factors that were considered in deciding on the size of the sample for the study include the following:

- The degree of precision required between the sample population and the general population.
- The variability of the population.
- The sampling method.

### **6.3 Collection of Data**

Two major types of data were used for the study; these are the primary and secondary data. The primary data were collected by structured questionnaires from a cross section of rural household heads who had applied for credit either from the formal or informal sector.

Information collected in the survey include data on household socio-economic and demographic characteristics of the household heads, land tenure, livestock ownership, asset ownership, credit and savings, income and expenditure variables and household levels indicators. Control questions were included in the questionnaire to verify the consistency of the answers. In addition, the enumerators were trained to use other control questions not included in the questionnaire whenever there seemed to be inconsistencies in a respondent's answers.

A pilot survey was conducted in order to check the efficacy of the questionnaire. This exercise was particularly useful in checking the understanding of the questions by respondents. Information collected through these interviews was very helpful also in the development of the final questionnaire used for data collection.

A good deal of time was further spent in the field and in the office checking the consistency of answers to the questions. Secondary data were also collected from the Eastern Cape Rural Finance Corporation, (ECRFC), as a supplement to the data collected on the field.

## **6.4 Analytical Techniques:**

The following analytical tools were used to achieve the stated objectives of the study.

### **6.4.1 Descriptive Statistics**

Descriptive statistics such as mean, median, percentages and frequency distribution were used in describing the socio-economic and demographic characteristics of the households.

### **6.4.2 Poverty Gap Index/Ratio**

In order to achieve objective one of the study, the mathematical model developed by Foster, Greer and Thorbecke (1984), known as the FGT model of poverty decomposition was adopted to determine the incidence, depth and severity of poverty in the study area. The use of the FGT measures required the definition of a poverty line, which was calculated based on aggregated data on household expenditure.

#### **Determination of Poverty Lines**

The poverty line is the level of welfare that distinguishes poor households from non-poor households. This is a pre-determined and well-defined standard of income or value of consumption (expenditure). Poverty lines are often drawn in either relative or absolute terms. In the former, a proportion of the mean expenditure is taken as the poverty line, usually the one-third (which defines the core poverty line) and two-third (which defines the moderate poverty line) of mean expenditure have been commonly used. The absolute poverty line is a predetermined one based on some minimum food and non-food expenditure below which a household is defined as poor if its consumption level is below this minimum. In other words, the poverty line is fixed in terms of the standard of living it commands over the domain of poverty

measurement. The choice of consumption-based rather than an income-based measure of household welfare is motivated by the fact that income can be viewed as a measure of welfare opportunity or a measure of potential welfare. Consumption, on the other hand, can be interpreted as a realized welfare or a measure of welfare achievement (Hentschel and Lanjouw, 1996; Atkinson, 1989). Since realised rather than potential welfare is the concerned, consumption is arguably a more appropriate indicator.

This study was based on relative poverty line approach. Relative poverty lines were constructed based on total household per capita consumption (expenditure) as the basic unit of household welfare; and the household's expenditure were corrected for household size and its demographic characteristics following Deaton and Muellbauer (1980) as follows;

$$(1) \quad E = (A + \alpha K)^{\theta}$$

Where,

$E$  = Number of adult equivalents

$A$  = Number of adults

$K$  = Number of children

$\alpha$  = Fractional representation of children in adult equivalence *i.e.* child cost ratio

$\theta$  = Scale parameter

The adult equivalent conversion formulae of  $E = (A + 0.5K)^{0.9}$  was adopted for the analysis, most poverty studies in South Africa have adopted the values of  $\alpha = 0.5$  and  $\theta = 0.9$  (May *et al.*,

1995). The sensitivity of the poverty profile to changes in values of  $\alpha$  (from  $\alpha = 0.5$  to  $\alpha = 0.8$ ) and  $\theta$  (from  $\theta = 0.5$  to  $\theta = 0.9$ ), was tested. It was found that the poverty lines were robust at  $\alpha = 0.5$  and  $\theta = 0.9$ .

The mean monthly per adult equivalent household expenditure (MPAEHE) of the sample respondents was determined by dividing the total real per adult equivalent expenditure for all households by the total number of households sampled. Hence, extremely (core) poor, moderately poor and non-poor household were identified. Those households who spend less than one-third (1/3) of MPAEHE were classified as extremely poor, less than two-third (2/3) of the MPAEHE as moderately poor, while non-poor are those who spend two-third or more of MPAEHE. Total per capita expenditure was used as a proxy for the standard of living of the household in the study area. From the poverty lines, the poverty profile of different groups in the study area was analysed and measured through the FGT model.

The share of the population below poverty line provides a quick indication of the scope of the problem within a given setting. In this study, total monthly expenditure was expressed in per adult equivalent terms by adjusting for household size as each household size divides its total monthly expenditure.

### **The Poverty Gap Index/Ratio**

The FGT measure, which is an approach to absolute poverty, is expressed as:

$$(2) \quad P_{\alpha} = \frac{1}{n} \sum_{i=1}^m \left( \frac{z - y_i}{z} \right)^{\alpha}, \quad \alpha \geq 0$$



Where;

$z$  = Poverty line

$m$  = Number of households below poverty line

$n$  = Number of households in the reference population/total sampled population

$y_i$  = Per adult equivalent expenditure of  $i^{th}$  household

$\alpha$  = Poverty aversion parameter

$z - y_i$  = Poverty gap of the  $i^{th}$  household

$\frac{z - y_i}{z}$  = Poverty gap ratio

The headcount index is obtained by setting the  $\alpha = 0$ ,  $\alpha = 1$ , the yield poverty gap index, and  $\alpha = 2$ , yield the squared poverty gap index. If  $\alpha = 0$  in equation (2), the expression decomposes to

$$(3) \quad P_0 = \frac{1}{n}(q) = \frac{q}{n}$$

This gives a measure of the incidence of poverty also known as the headcount ratio or headcount index (H) - the percentage of the population living in households with consumption per capita that is less than the poverty line, *i.e.* the proportion of the poor in the total population.

When  $\alpha = 1$  in equation (2) the expression becomes:

$$(4) \quad P_1 = \frac{1}{n} \sum_{i=1}^m \left( \frac{z - y_i}{z} \right)^1$$

Here the head count ratio is multiplied by the expenditure gap between the average poor person and the poverty line. This gives a measure of the depth of poverty or poverty gap index defined by the mean distance below the poverty line as a proportion of that line (where the mean is formed over the entire population, counting the non-poor as having zero poverty gap).

When  $\alpha = 2$  in equation (2) the expression is as below:

$$(5) \quad P_2 = \frac{1}{n} \sum_{i=1}^m \left( \frac{z - y_i}{z} \right)^2$$

This gives a measure of the severity of poverty and an indication, when multiplied by 100, of the percentage by which a poor household's income should increase to move them out of poverty. It is the mean of the squared proportionate poverty gaps, this allows for concern about the poorest of the poor by attaching greater weight to the poverty of the poorest than of those just below the line, which provides an intensity of poverty for different households. The poverty square index also satisfies the Sen-Transfer axiom, which requires that if expenditure is transferred from a poor to a poorer household, measured poverty decrease.

### 6.4.3 The Tobit Regression Model

This analysis also employed the Tobit regression model, a hybrid of the discrete and continuous models, to determine the correlates of poverty. The Tobit model is an econometric model in

which the dependent variable is censored; censoring occurs because the values below zero are not observed. The Latent variable  $W_i^*$  cannot always be observed while the independent variable  $X_i$  is observable. The model is expressed below, following McDonald and Mofitt (1980):

$$(6) \quad q_i = W = \beta' X_i + \varepsilon_i \quad \text{If } W_i^* > 0$$

$$q_i = 0 = \beta' X_i + \varepsilon_i \quad \text{If } W_i^* \leq 0 \quad i = 1, 2, 3, \dots, 150 \text{ households.}$$

$q_i$  is the dependent variable, it is discrete when the household is not poor and continuous when poor. The welfare indicator  $W_i^*$  is given as:

$$(7) \quad W_i^* = \frac{Z - Y_i}{Z}$$

Where  $Z$  is the poverty line and  $Y_i$  is the consumption expenditure per adult equivalent.  $W_i^* > 0$  implies that  $W$  is observed, while the reverse is the case when  $W_i^* < 0$ . The vectors of independent variables are denoted by  $X_i$ ,  $\beta'$  is the vector of unknown coefficients and  $\varepsilon_i$  is an independently distributed error term.

### **Selection of explanatory variables**

The set of independent variables that are hypothesized to determine consumption and hence poverty includes demographic and household level characteristics. The key criterion for selecting potential determinants of consumption was exogeneity. Explanatory variables that are arguably exogenous to current consumption are selected, as the goal of the model is to infer

causality. The values of endogenous variables are assumed to be influenced by exogenous variables, but in return are not influence by those variables as no feedback relation between the endogenous and exogenous variables is assumed (Judge *et. al.*, 1985). As a result, explanatory variables whose values are determined outside of the current economic system of household, but also determine the current level of household welfare were selected (Mukherjee and Benson, 2003). The selection of these potential determinants is guided by results of the poverty profile of the South Africa Poverty and Inequality Report (May, 1998), as well as by those variables known to be of considerable interest to South Africa's policy makers. The set of explanatory variables selected as possible determinants of poverty in the study area are presented in Table 6.1.

#### **6.4.4 The Logistic Regression Model**

To estimate the determinants of household access to credit, the probability of household access to credit is assumed to be determined by an underlying response variable that captures the true households' socio-economic status. In the case of credit access status (*i.e.* with access or without access), the underlying response variable  $A^*$  is defined by the regression equation:

$$(8) \quad A_i^* = \Sigma X_i' \beta + u_i$$

In the equation (8),  $A^*$  is not observable, as it is a latent variable. What is observable is an event represented by a dummy variable  $A$  defined by:

$$(9) \quad A = 1 \text{ if } A^* > 0 \quad \text{and} \quad A = 0 \text{ otherwise}$$

**Table 6.1 Explanatory variable for the determinants of household poverty**

| Variable                                     | Measurement                                                                                                                                     | A priori Expectation                                                                                                 |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>Age</b>                                   | Completed years                                                                                                                                 | Indeterminate                                                                                                        |
| <b>Gender</b>                                | 1 if male; 0 otherwise                                                                                                                          | Male-headed households are expected to generate better welfare outcomes than female.                                 |
| <b>Education</b>                             | Number of years of schooling                                                                                                                    | Education is expected to lead to increase earning potential and consequently increase welfare                        |
| <b>Dependency ratio</b>                      | This is measured as the number of dependants (aged 0-14 and over the age of 65) to the total household size, expressed as a percentage.         | Dependency ratio is positively related to welfare. High dependency ratio exerts consumption stress on the household. |
| <b>Primary occupation</b>                    | 1 if farming; 0 otherwise                                                                                                                       | Indeterminate                                                                                                        |
| <b>Land ownership</b>                        | 1 if yes; 0 otherwise                                                                                                                           | Land ownership is expected to increase household welfare                                                             |
| <b>Credit availability</b>                   | 1 if yes; 0 otherwise                                                                                                                           | Credit availability is expected to increase household welfare                                                        |
| <b>Remittance, pension, social grants</b>    | Measured as the amount received in Rands.                                                                                                       | It is expected to boost household welfare                                                                            |
| <b>Per Capita Income (PCI)</b>               | Amount in Rands.                                                                                                                                | This is expected to negatively influence poverty                                                                     |
| <b>Assets ownership (oxen, poultry, etc)</b> | 1 if not less than the 75 <sup>th</sup> percentile among households who owned at least one of that type of livestock <sup>8</sup> ; 0 otherwise | This is expected to increase household welfare                                                                       |

From equation (8) and (9), the following expression can be derived:

$$\begin{aligned}
 (10) \quad \Pr ob(A_i = 1) &= \Pr ob(u_i > -\sum X_i' \beta) \\
 &= 1 - F(-\sum X_i' \beta) \text{ and,} \\
 \Pr ob(A_i = 0 | \beta, X_i) &= F(-\sum X_i' \beta)
 \end{aligned}$$

<sup>8</sup> In practice, the 75<sup>th</sup> percentile was approximately equal to the mean for all types of livestock.

Where  $F$  is the cumulative distribution function for  $u_i$ .

The observed values of  $A$  are the realisation of the binomial with probabilities given by equation (10), which varies with  $X_i$ . Thus, the likelihood function can be written as:

$$(11a) \quad L = \prod_{A_i=0} [F(-\sum X_i' \beta)] \prod_{A_i=1} [1 - F(-\sum X_i' \beta)]$$

This can be written as:

$$(11b) \quad L = \prod_{A_i=1} [F(-\sum X_i' \beta)]^{1-A_i} [1 - F(-\sum X_i' \beta)]^{A_i}$$

The log likelihood function for the two equations above (11a and 11b) can be written as:

$$(12) \quad l = (\beta) = \log L(\beta) = \sum_{i=0}^n A_i \log(1 - F(-\sum X_i' \beta)) + (1 - A_i) \log F(-\sum X_i' \beta)$$

The functional form imposed on  $F$  in equation (12) depends on the assumption made about the error term  $u_i$  in equation (8). The cumulative normal distribution and logistic distribution are very similar, yielding the same result (Maddala, 1983). In addition, from Amemiya (1981), once the parameter of estimates is obtained from the logit model, it is possible to derive the would-be estimates of a probit model. Hence, in this study the logit model is used. In this study, the logit model is specified by assuming a logistic cumulative distribution of  $u_i$  in  $F$  (in equations (11a) and (11b)). The relevant logistic expressions are:

$$(13) \quad 1 - F(-\sum X_i' \beta) = \frac{e^{\sum X_i' \beta}}{1 + e^{\sum X_i' \beta}}$$

$$(14) \quad F(-\sum X_i' \beta) = \frac{e^{-\sum X_i' \beta}}{1 + e^{-\sum X_i' \beta}} = \frac{1}{1 + e^{\sum X_i' \beta}}$$

Where  $\beta$  refers to the vectors of parameters that reflect the impact of changes in  $X$  on the probability of having access to credit source. The choice of a particular form for the right hand side of the equation (13) leads to an empirical model. Adopting the logit analysis, the probability that a household would have access to a formal credit source is given by the regression model:

$$(14) \quad Prob(A = 1) = \frac{e^{(\beta' X)}}{1 + e^{(\beta' X)}}$$

Equation (8) is a logistic cumulative distributions function where:

$$(15) \quad \beta' X = \beta_0 + \sum \beta_i X_i + u_i$$

And;

$e$  = base of natural logarithm

$\beta_0$  = the constant term

$\beta_i$  = the vector of coefficients

$X_i$  = the vectors of explanatory variables, and

$u_i$  = the error term

The estimation of equation (15) using the maximum likelihood methods helps to identify statistically significant explanatory variables. In the preceding discussions, a list of factors were identified that influenced accessibility of credit for rural poor households. Some of these factors would be used in the analysis. It is hypothesized that household access to credit could depend upon the gender, age, educational status, monthly income, land ownership, value of assets, savings, remittances and pension, dependency ratio, awareness of credit institution, repayment capacity and social capital.

These characteristic are important in two ways:

- a) They can influence household demand for credit; and
- b) Potential lenders are likely to base their assessment of borrowers' creditworthiness on these characteristics.

The set of explanatory variables selected as possible determinants of household access to credit in the study area are presented in Table 6.2. It is difficult to separate completely the variables affecting demand or access because decision-making at both stages is based almost more on households' demand for rather than access to formal credit. These include; age, household income, sex of household head, savings and assets.



**Table 6.2 Data Specifications for the Logistic Regression Model**

| VARIABLE                                                                   | SYMBOL   | TYPE       | A PRIORI EXPECTATION                                                                                                                                                                                             |
|----------------------------------------------------------------------------|----------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Dependent Variable</b>                                                  |          |            |                                                                                                                                                                                                                  |
| <b>Credit Status: 1= Access to credit, 0= otherwise</b>                    |          | Binary     | -                                                                                                                                                                                                                |
| <b>Independent Variables</b>                                               |          |            |                                                                                                                                                                                                                  |
| <b>Age</b><br>(Age of household head in years)                             | AGE      | Continuous | Age is hypothesised to negatively affect the probability of having access to credit, in so far that older clients may not be as active as younger ones in their enterprises.                                     |
| <b>Gender</b><br>(Male=1,0 otherwise)                                      | GENDER   | Binary     | Male are expected to have greater access to credit than female, hence its expected sign is positive.                                                                                                             |
| <b>Education</b><br>(No of years spent in school)                          | SCHATTEN | Continuous | The coefficient is expected to be positive. Higher levels of education imply better technical knowledge and skills, more information on markets and facilities provided by financial institutions.               |
| <b>Monthly income</b><br>(in Rands)                                        | MINCOM   | Continuous | Monthly income is posited to affect negatively access to credit. Its sign is expected to be negative.                                                                                                            |
| <b>Land ownership</b>                                                      | LANDOWN  | Binary     | Land ownership, as opposed to rental and other form of access to land is expected to increase the long run investment incentives and the collateral value of the land to lenders. Its expected sign is positive. |
| <b>Assets</b><br>(Estimated value in Rands)                                | ASSET    | Continuous | The coefficient is expected to be positive, especially if the value is high, it could serve as collateral for credit obtained.                                                                                   |
| <b>Savings</b><br>(in Rands)                                               | SAVING   | Continuous | The sign is indeterminate. It may influence the lender to grant credit or may inhibit access.                                                                                                                    |
| <b>Remittance and pension</b><br>(in Rands)                                | REMPEN   | Continuous | This is posited to affect negatively the probability of access to credit. Its coefficient is expected to be negative.                                                                                            |
| <b>Dependency ratio</b>                                                    | DEPRATIO | Continuous | High dependency ratio is posited to affect negatively the probability of access to credit. Its coefficient is expected to be negative.                                                                           |
| <b>Repayment record</b><br>(Good repayment record = 1, 0 otherwise)        | REPYTRCD | Binary     | It is posited that clients who repaid their previous loans are perceived as creditworthy and are provided with more in the subsequent season or year.                                                            |
| <b>Social Capital</b><br>(A value equal to the Numbers of groups belonged) | SOCICAP  | Continuous | Belonging to a social network may be representative of client social relationships and may signal his ability to fulfil obligations. Its expected sign is positive.                                              |
| <b>Awareness</b><br>(Aware of a credit source = 1, 0 otherwise)            | AWAREN   | Binary     | Awareness may have a strong bearing on accessibility of credit hence its sign is expected to be positive.                                                                                                        |

### 6.4.5 The Switching Regression Model

The most natural way to assess the effects of credit constraints on the economic welfare of the household would be to run regression of the form:

$$y_i = \gamma' C_i + \beta X_i + \varepsilon_i$$

Where  $y_i$  denotes alternative measures of interest on the welfare of household  $i$ ;  $C_i$  denotes whether a household is credit constrained or not and  $X_i$  observable characteristics of the household.  $\varepsilon_i$  is the unobserved random heterogeneity. While intuitively, this approach will give consistent estimates of  $\gamma$ , the effect of credit constraints on the welfare of the household. One must recognise at the very least that it is not possible to observe a pure random sample of  $y_i, C_i$  and  $X_i$ . To illustrate this, imagine a group of households with the same characteristics  $X_i$  and randomly we allow some households to be credit constrained ( $y_i = 1$ ) and other to be unconstrained ( $y_i = 0$ ). Under these circumstances, one could consistently estimate the effects of credit constrained by the difference in the estimated means of the household welfares.

Now, for households with different characteristics  $X_i$ , in as much as the sampling is random, Ordinary Least Square (OLS) will yield consistent estimates of the effects of credit constraints. The problem at hand now, is that credit constraints condition is indeed determined by the lender, and as such, it is quite possible that a set of factors affect both, household welfare and credit-constrained conditions. Using the previous equation, the problem is that whether a household is credit constrained may depend on  $X_i$  and  $\varepsilon_i$ . Clearly, the major problem is that the counterfactual welfare that households that are credit constrained would have had without being

constrained are not observed. In addition, we do not observed the welfare that households that are not credit constrained would have had if they were constrained. If we could estimate such counterfactuals, this problem could be solved.

This is known as the sample selectivity problem and is well known in economics literature. In this study, a strategy developed by labour economists is adopted, mostly by Heckman (1979). A switching regression model was used to correct for possible sample selection bias, which may arise from other interventions that provide multiple services to the households in addition to credit (Lee, 1978; Maddala, 1983). Empirical applications of this model are found in studies by Feder *et al.*, (1990); Goetz (1992); Fuglie and Bosch (1995) and Freeman, *et al.*, (1998).

The two-stage switching regression model applied in this study uses a probit model in the first stage to determine the relationship between households' credit constraint condition and a number of socio-economic and credit variables. In the second stage, different regression equations are used to model the households' welfare conditional on a specified criterion function. The credit constraint condition of the  $i^{th}$  household is described by an unobservable excess demand for credit  $C_i^*$ , which is postulated to be a function of a vector of exogenous household socio-economic and credit variables.

The endogenous switching regression model (Maddala, 1986) was to estimate the effect of credit constraints on households' welfare. The switching regression model is because in each period, the probability of a household being credit constrained is non-zero. This probability varies according to household characteristics, and only one realisation of these probabilities is possible

in one period (Gilligan *et al.*, 2005). Households are categorized into credit constrained and unconstrained regimes by directly asking the household whether they needed more credit for their investment activities. Whether a household had an excess demand for credit, is established through a series of questions. Excess demand for credit is therefore treated as a latent variable for each household. However, this procedure does not assess the magnitude of the constraint, but it provides an indicator of whether or not a household is credit constrained (Gilligan *et al.*, 2005).

The endogenous switching model allows for a joint estimation of the determinants of households' credit constraint conditions and the household welfare in the two regimes, in this case, depending on whether a household is credit constrained or unconstrained. Distinct regressions are estimated for credit constrained households and unconstrained households, with mean monthly per adult equivalent household expenditure as an explanatory variable. To correct for possible self-selection biases, a probit credit constrained criterion function was estimated by including the inverse Mills ratio and use to correct the error term in each equation. These equations are estimated jointly using the Maximum Likelihood.

### **The Model Specifications**

The first step is to estimate the household credit constrained condition by a Probit function with the specification:

$$(16) \quad C_i^* = \alpha Z_i + \mu_i > 0 \quad \mu_i \sim (0,1)$$

$$C_i = \begin{cases} 1 \\ 0 \end{cases}$$

Where  $C_i = 1$  if  $C_i^* > 0$  and  $C_i = 0$  if otherwise

The household credit constraint criterion equation is a reduced-form equation, *i.e.* the condition of whether a household is credit constrained or unconstrained, and is given by an index model,  $C_i^*$  which is a latent variable that cannot be observed but being estimated.  $Z_i$  represents a vector of explanatory variables,  $\alpha$  is a vector of estimated parameters, and  $\mu_i$  is a random error term, distributed as a normal function with null mean and the variance normalized to one in order to allow for the estimation of coefficients. Finally, a household welfare equation is estimated by the following regression equations with regime 1 representing credit constrained households and regime 0 representing unconstrained households.

$$(17a) \quad y_{1i} = \beta_1' X_1 + \varepsilon_{1i}, \quad \text{if } C_i = 1$$

$$(17b) \quad y_{0i} = \beta_0' X_0 + \varepsilon_{0i}, \quad \text{if } C_i = 0$$

With:

$$\Sigma = \begin{pmatrix} \sigma_1^2 & \rho_{10} & \rho_{1\mu} \\ \rho_{10} & \sigma_0^2 & \rho_{0\mu} \\ \rho_{1\mu} & \rho_{0\mu} & 1 \end{pmatrix}$$

As demonstrated Maddala (1983), the expected values of the error terms  $\varepsilon_{1i}$  and  $\varepsilon_{0i}$  are not zero. This makes direct OLS estimation of equations (17) inappropriate. This problem is addressed by calculating the inverse Mills ratio from equation (16).

The expected household's welfare, conditional to credit constrained regime can be computed as;

$$\begin{aligned}
 E[y_{1i}|X_i, C_i = 1] &= E[y_{1i}|X_i, \alpha Z_i + \mu_i > 0] \\
 &= \beta_1 X_1 + E[\varepsilon_{1i} | \mu_i > -\alpha Z_i] \\
 (18a) \qquad &= \beta_1 X_1 + (\sigma_1 \sigma_\mu \rho_1) [\phi(\alpha Z_i) / \Phi(\alpha Z_i)]
 \end{aligned}$$

In the same way, the expected household welfare, conditional to the unconstrained regime, is given by:

$$\begin{aligned}
 E[y_{0i}|X_i, C_i = 0] &= E[y_{0i}|X_i, \alpha Z_i + \mu_i < 0] \\
 &= \beta_0 X_0 + E[\varepsilon_{0i} | \mu_i < -\alpha Z_i] \\
 (18b) \qquad &= \beta_0 X_0 + (\sigma_0 \sigma_\mu \rho_0) [-\phi(\alpha Z_i) / 1 - \Phi(\alpha Z_i)]
 \end{aligned}$$

Where  $y$  is household welfare,  $X_1$  and  $X_0$  are vectors of the explanatory variables for credit constrained and unconstrained households respectively, while  $\beta$  is a vector of the corresponding estimated parameters. The terms  $\varepsilon_{1i}$  and  $\varepsilon_{0i}$  are random error terms, distributed as normal function with zero means. The terms  $\phi$  and  $\Phi$  are the probability density function and cumulative distribution function of the standard normal distribution respectively. According to Greene (2003), the ratio  $\phi$  and  $\Phi$  evaluated at  $\alpha'Z$  is the inverse Mills ratio ( $\lambda$ ). This reflects the truncation of a normal distribution at  $\alpha'Z$ .

Therefore, the variables  $\lambda_1 = [\phi(\alpha Z_i)/\Phi(\alpha Z_i)]$  and  $\lambda_0 = [-\phi(\alpha Z_i)/(1 - \Phi(\alpha Z_i))]$  could be added to the  $X_1$  and  $X_0$  vectors respectively in equations (18a) and (18b) to yield;

$$(19a) \quad E[y_{1i}|X_i, C_i = 1] = \beta_1 X_1 + (\sigma_1 \sigma_\mu \rho_1) \lambda_1 + \varepsilon_{1i}$$

$$(19b) \quad E[y_{0i}|X_i, C_i = 0] = \beta_0 X_0 + (\sigma_0 \sigma_\mu \rho_0) \lambda_0 + \varepsilon_{0i}$$

The covariance of the credit constrained criterion equation (16) and the credit constrained household welfare equation (19a), and the credit constrained criterion equation (16) and the unconstrained household welfare equation (19b), are represented by the multiplicative terms  $\sigma_1 \sigma_\mu \rho_1$  and  $\sigma_0 \sigma_\mu \rho_0$  respectively. These covariances can be split into the standard deviations of the appropriate equations  $\sigma_\mu, \sigma_1, \sigma_0$  and the correlations  $\rho_1$  and  $\rho_0$ . However,  $\sigma_\mu$  cannot be estimated and is normalised to 1.0, because of the structure of the model and the nature of the derived data (Greene, 2003).

To measure the endogeneity of the credit constrained condition, a test of whether  $\rho_1$  and  $\rho_0$  are statistically different from zero is required, since estimates of  $\rho_1$  and  $\rho_0$  shows the correlation of the “unobservables” of the credit constrained criterion equation with the “unobservables” of the credit constrained and unconstrained household welfare equations respectively. If  $\rho_1$  and  $\rho_0$  are zero, then the credit constraint is exogenous, and it would not be necessary to model and include the credit constrained criterion equation in estimating the effect of credit constraints on household welfare.

The software LIMDEP (1998) was used in estimating equations (16), (19a), and (19b). The probit function (16) was first estimated by maximum likelihood using OLS estimated starting values. The predicted values from the probit function are then used to calculate the inverse Mills ratio, which is subsequently included as an explanatory variable when estimating equations (19a) and (19b) by OLS. A single parameter is estimated for  $\sigma_1\rho_1$  and  $\sigma_0\rho_0$  because of the linear structure of these equations. Finally, using previous estimates of  $\beta_1, \beta_0$ , and  $\alpha$  for starting values, equations (16), (19a), and (19b) are then estimated jointly by maximum likelihood. With the maximum likelihood estimation (MLE) equation, separate estimates for  $\rho_1$  and  $\sigma_1$ , and then  $\rho_0$  and  $\sigma_0$ , are possible. The log likelihood function for the model is made up of two components and can be written as:

$$(20) \quad \log L = \sum_{i=1}^n \text{prob}(C_i = 1)f(\log(y_{1i})|C_i = 1) \\ + \text{prob}(C_i = 0)f(\log(y_{0i})|C_i = 0)$$

With:

$$\text{prob}(C_i = 1) = \Phi(\alpha Z_i)$$

$$\text{prob}(C_i = 0) = 1 - \Phi(\alpha Z_i)$$

$$(21a) \quad f(\log(y_{1i})|C_i = 1) = [\Phi(\alpha Z_i)]^{-1} \sigma_1^{-1} \phi(\sigma_1^{-1}(\log(y_{1i}) - \beta_1' X_{1i})) \times \\ \Phi\left\{\left(1 - \frac{\rho_1^2}{\sigma_1^2}\right)^{-1/2} \left[\alpha Z_i - \frac{\rho_1}{\sigma_1^2}(\log(y_{1i}) - \beta_1' X_{1i})\right]\right\}$$

$$(21b) \quad f(\log(y_{0i})|C_i = 0) = [1 - \Phi(\alpha Z_i)]^{-1} \sigma_0^{-1} \phi(\sigma_0^{-1}(\log(y_{0i}) - \beta_0' X_{0i})) \times$$



$$\Phi \left\{ \left( 1 - \frac{\rho_0^2}{\sigma_0^2} \right)^{-1/2} \left[ \alpha Z_i - \frac{\rho_0}{\sigma_0^2} (\log(y_{0i}) - \beta_0' X_{0i}) \right] \right\}$$

The maximization of this coefficient allows for the estimation the following parameters:

- $\alpha$ : Coefficients of the factors explaining household credit constraint conditions
- $\beta_1$ : Coefficients of the factors explaining household welfare conditionally of credit constrained
- $\beta_0$ : Coefficients of the factors explaining household welfare conditionally of non-credit constrained
- $\rho_1$  and  $\rho_0$ : Correlation terms between the household credit constraint criterion equation and welfare equations
- $\sigma_1^2$  and  $\sigma_0^2$ : Households welfare variances in the two states

The data specification for the endogenous switching regression is presented in Table 6.3

## 6.5. Conclusion

A detailed description of the study area as well as sampling procedure and methods of data collection has been presented in this chapter.

The analytical techniques and the econometric specifications of the various models (which includes FGT model of poverty decomposition, the tobit, logit probit and switching regression models) employed to achieved the stated objectives of the study were also presented in this chapter. This next chapter presents the discussions of the result of the empirical models.

**Table 6.3 Data Specifications for the Switching Regression Model**

| VARIABLE                                                       | SYMBOL   | TYPE       | A PRIORI EXPECTATION                                                                                                                                            |
|----------------------------------------------------------------|----------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dependent Variable                                             |          |            |                                                                                                                                                                 |
| <b>Welfare Status</b> (Per Adult Equiv. Household Expenditure) | MPAEHE   | Continuous | -                                                                                                                                                               |
| Independent Variables                                          |          |            |                                                                                                                                                                 |
| <b>Age</b><br>(Age of household head in years)                 | AGE      | Continuous | Age is hypothesised to affect negatively the welfare, in so far that old household head may not be as active as younger ones in their enterprises.              |
| <b>Gender</b><br>(Male=1,0 otherwise)                          | GENDER   | Binary     | Male are expected to earn greater income, hence have better welfare than female. Its expected sign is positive.                                                 |
| <b>Education</b><br>(No of years spent in school)              | SCHATTEN | Continuous | The number of years of formal schooling is an indicator of human capital, which positively affects welfare status.                                              |
| <b>Monthly income</b><br>(in Rands)                            | MINCOM   | Continuous | Monthly income is posited to affect positively welfare.                                                                                                         |
| <b>Land ownership</b>                                          | LANDOWN  | Binary     | Land ownership – possession of a legal title increases ownership security, and thereby the increases the incentive to invest, which affects welfare positively. |
| <b>Assets</b><br>(Estimated value in Rands)                    | ASSET    | Continuous | The coefficient is expected to be positive. Assets are expected to increase the welfare of households.                                                          |
| <b>Savings</b><br>(in Rands)                                   | SAVING   | Continuous | The sign is posited to be positive. Household saving are expected to boost its welfare.                                                                         |
| <b>Remittance and pension</b><br>(in Rands)                    | REMPEN   | Continuous | Remittance and pension is expected to affect welfare positively.                                                                                                |
| <b>Dependency ratio</b>                                        | DEPRATIO | Continuous | High dependency ratio is posited to affect negatively household welfare.                                                                                        |
| <b>Debt</b>                                                    | DEBT     | Continuous | It is posited that indebtedness will affect household welfare negatively.                                                                                       |

|                                                                                                                                  |         |            |                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------|---------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Social Capital</b><br>(A value equal to the<br>Numbers of groups<br>belonged)                                                 | SOCICAP | Continuous | Belonging to a social network may be<br>representative of household social<br>relationships and may signal his ability<br>to fulfil obligations. Its expected sign is<br>positive. |
| <b>Awareness</b><br>(Aware of a credit source =<br>1, 0 otherwise)                                                               | AWARE   | Binary     | Awareness may have a strong bearing<br>on accessibility of credit hence its sign<br>is expected to be positive.                                                                    |
| <b>Probability density<br/>function or <math>\phi(\alpha Z_i)</math> in the<br/>model</b>                                        | -       | Continuous | -                                                                                                                                                                                  |
| <b>Interaction terms of<br/>variables and cumulative<br/>density function or<br/><math>\Phi(\alpha Z_i)</math> in the model.</b> | -       | Continuous | -                                                                                                                                                                                  |

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# CHAPTER 7

## ANALYSIS AND RESULTS OF THE STUDY

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### 7.1 Introduction

In this chapter, the empirical results of the study are presented. The chapter is divided into four main sections. In the first section, the data description and analyses are presented. The second section deals with the estimates of the incidence of poverty. The third section focuses on the accessibility of credit to poor rural households. Indicators and factors influencing accessibility are discussed. The last section deals with the estimates of the impact of credit constraints on household welfare.

### 7.2 Data Description and Analyses

Four main items are considered in this sub-section, namely household access to financial services (credit), the household socio-economic and demographic characteristics in the two subgroups (*i.e.* based on credit accessibility and credit constraint conditions), household source of credit and household income and welfare status measured by mean monthly per adult equivalent household expenditure (MPAEHE).

#### 7.2.1 Rural Households' Credit Accessibility

Credit can be part of a strategy for increasing current income, investing in the future, or coping with crises. Table 7.1 presents empirical results from the survey on how poor rural households' are able access the credit markets.

**Table 7.1 Rural Households' Credit Accessibility**

| <b>Household With Access to Credit</b> |                    | <b>Household With No Access to Credit</b> |
|----------------------------------------|--------------------|-------------------------------------------|
| <b>(n=106)</b>                         |                    | <b>(n=44)</b>                             |
| <b>71 percent</b>                      |                    | <b>29 percent</b>                         |
| <b>Unconstrained</b>                   | <b>Constrained</b> | <b>Constrained</b>                        |
| <b>(n=28)</b>                          | <b>(n=78)</b>      | <b>(n=44)</b>                             |
| <b>19 percent</b>                      | <b>52 percent</b>  | <b>29 percent</b>                         |

*Source: Calculated from field survey, 2007*

The result of the analysis reveals that during the survey period, 71 percent of the sampled households had borrowed from a credit source while 29 percent of the sampled households applied to a credit source but were denied access, in other words, they were not able to borrow. No households that have no access to credit could proffer reasons why they were not granted credit. In all, majority of the households sampled, 81 percent were credit constrained, *i.e.* they were not able to borrow the amount they required from a credit source while only 19 percent of the sampled households were not constrained, and accordingly, could borrow the amount they wanted at the prevailing market and interest rate.

### **7.2.2 Socio-Economic and Demographic Characteristics of Households**

Participation in the credit market would depend on household socio-economic and demographic characteristics such as gender of the household head, marital status, educational attainment, dependency ratio and title deed to land. These characteristics are important as they influence household's demand for credit and potential lenders are most likely to base their assessment of borrower's creditworthiness on such characteristics. The analyses were based on the pooled data,

accessibility to credit and credit constraint condition of the household. The socio-economic and demographic characteristics of the sample households are presented in Table 7.2.

Education is measured in terms of the years of schooling completed by the household head. Education represents both the scope of the productive opportunities open to the household and its ability to deal with the formality of loan evaluation procedures. About 26 percent of the household heads have either no education or have attended formal school up to Grade 8. Overall, households having access to credit tends to have higher education than those without access to credit and financial services. Moreover, those that are not credit constrained tend also to have higher education than those who are constrained in the credit market.

Land in most cases, is one of the primary asset of rural households, and as such, the analysis of the determinants of access to credit cannot be done independent of the possession of land. The majority of the sampled household, about 93 percent, claimed they have title deeds to their land. All households having access to credit own their land; 23 percent of those without access do not own a parcel of land. Of the constrained households, 92 percent owns their parcel of land and all the unconstrained households have title deeds to their land.

**Table 7.2 Average Socio-Economic and Demography Characteristics of all Sampled Households in the two Sub-groups**

| Variables                         | All Households (n=150) | Households with Access (n=106) | Households without Access (n=44) | t-test              | Credit Constrained Households (n=122) | Credit Unconstrained households (n=28) | t-test             |
|-----------------------------------|------------------------|--------------------------------|----------------------------------|---------------------|---------------------------------------|----------------------------------------|--------------------|
| <b>Gender of household head.</b>  | 0.64<br>(0.034)        | 0.65<br>(0.046)                | 0.62<br>(0.074)                  | 0.17 <sup>NS</sup>  | 0.65<br>(0.043)                       | 0.57<br>(0.095)                        | 0.21 <sup>NS</sup> |
| <b>Age of household head.</b>     | 44<br>(0.775)          | 38<br>(0.459)                  | 56<br>(0.939)                    | 2.1 <sup>**</sup>   | 45<br>(0.888)                         | 38<br>(0.865)                          | 2.47 <sup>**</sup> |
| <b>Years of school attendance</b> | 8<br>(0.284)           | 10<br>(0.150)                  | 4<br>(0.438)                     | 0.93 <sup>**</sup>  | 8<br>(0.330)                          | 10<br>(0.298)                          | 0.88 <sup>**</sup> |
| <b>Land ownership</b>             | 0.07<br>(0.0204)       | 0.09<br>(0.000)                | 0.00<br>(0.000)                  | 0.057 <sup>**</sup> | 0.92<br>(0.025)                       | 1.00<br>(0.000)                        | 0.05 <sup>**</sup> |
| <b>Dependency ratio</b>           | 50<br>(3.709)          | 25<br>(1.571)                  | 111<br>(5.104)                   | 10.6 <sup>**</sup>  | 56<br>(4.321)                         | 24<br>(3.283)                          | 10.8 <sup>**</sup> |

*Standard Error of the means are in parentheses  
Source: Calculated from field survey, 2007*

*\*\*Significant at 95 percent level of confidence*

*<sup>NS</sup>=Not significant*

The average dependency ratio for the sample households is about 50 percent. Dependency ratio tends to be lower (25 percent) on average, for households with access than for those without access (111 percent). In addition, for constrained households, the dependency ratio is 56 percent as against 23 percent for unconstrained households. The majority of the households sampled (54 percent) are non-migrant and 85 percent of the households have been living in the study area for over 20 years.

Significance t-test was conducted to test for the difference between the means of the various variables to ascertain if there is a significant difference between the socio-economic characteristics of household having access to credit and those without access, and for those that are constrained in the credit market and those who are not.

The result reveals that there is no significant difference between the gender of household head at 95 percent confidence level for households with access to credit and those without access and for those constrained and unconstrained. However, the results shows a significant difference in the age of household head at 95 percent level of probability for households with access to credit and those without access as well as for those who are constrained and unconstrained.

The result further revealed a significant difference at 95 percent level of probability in household heads level of education, land ownership and dependency ratio, for household with access to credit and those without access as well as for those household that are constrained in their access to credit and those that have unconstrained access to credit.



### 7.2.3 Rural Households' Source of Credit

The major source of credit for the sample households are presented in Table 7.3.

**Table 7.3 Rural Households' Source of Credit**

| Source of Credit                     | Constrained Households<br>(n=122) | Unconstrained Households<br>(n=28) |
|--------------------------------------|-----------------------------------|------------------------------------|
| Formal (ECRFC)                       | 82 percent                        | 100 percent                        |
| Informal (friends, relatives<br>etc) | 18 percent                        | None                               |

*Source: Calculated from field survey, 2007*

The result from the empirical survey suggests that the major source of credit is from the formal sector, mainly from the ECRFC. The results show that about 82 percent of the constrained households applied for credit from a formal source (i.e. the ECRFC), while all the unconstrained households also got their credit from the same source. Only 18 percent of the constrained households indicated they seek for credit from an informal source while none of the unconstrained households applied for credit from this source. In all, about 85 percent of borrowers obtained loans from the formal sources. This may be because the ECRFC was established by the Eastern Cape provincial government to meet the financial need of the rural populace. No respondent indicated receiving loans from non-governmental organisation (NGOs), probably due to logistics and level of funding. Other sources of credit are from the informal sector; about 15 percent of the households obtained their loans from friends or relatives. The findings of this study are not consistent with the findings from credit studies in most developing countries where the informal sector provides the vast majority of credit as compared to formal

institutions credit allotment both in volume (i.e. amount advanced) and in the number of credit transactions (Deaton, 1991). A possible explanation for this is that the ECRFC is a government establishment created as an intervention to assist rural dwellers have easy access to credit for investment and production purposes.

About 41 percent of the sampled households said they had difficulties in paying back their loans in the previous years. Only about 23 percent of those having access had difficulties in servicing their loans in the past while about 84 percent of those without access indicated they had difficulties. Of the constrained household, only 46 percent said they had difficulties in paying back their loan, while 21 percent of the unconstrained households said they had problems.

Only 19 percent of the households sampled said they were not aware of any credit source while overwhelming majority (81 percent) indicated they were aware of credit sources around them, and most of them are clients of the Eastern Cape Rural Finance Corporation (ECRFC). The ECRFC constitutes the single largest credit provider in the study areas. None of the household heads indicated they were asked to provide collateral before getting the loan. The major require seems to be the loan contract, which clients have to sign. The long processing period before loans can be disbursed was ranked highest among the difficulties in applying for a loan. Thus, it could be said that the collateral requirement does not seem to be a major determinant of household access to credit in the study areas.

#### **7.2.4 Rural Households' Source of Income**

The source of income for most rural household could be from wages, remittances received or pension, savings and from sales of household assets. Empirical results from the survey are presented in Table 7.4.

The average monthly income for the sampled households in the study area is R5 245. For households with access to credit this average is R6 318, this is higher than for those without access, which is R2 659. For the constrained households, the average monthly income was found to be R5 110 while the unconstrained household have average monthly income of R5 829. However, there is no statistically significant difference between these amounts.

The average income received monthly as remittances or pension for the sampled households is R462. For households with access to credit this average is about R547, this is higher than for those without access, which is R258. For the constrained households, they receive R497 while the unconstrained household receive about R311 monthly as remission or pension.

The average savings for the households sampled was found to be R3 089 at the time of data collection. For households with access to credit the average savings is about R4 268, this is higher than for those without access, which is R250. For the constrained households, the average monthly income was found to be about R2 877 while the unconstrained household have average monthly income of about R4 015.

**Table 7.4 Household's Average Income in the two Sub-groups**

| Variables                        | All Households (n=150)   | Households with Access (n=106) | Households without Access (n=44) | t-test  | Credit Constrained Households (n=122) | Credit Unconstrained households (n=28) | t-test              |
|----------------------------------|--------------------------|--------------------------------|----------------------------------|---------|---------------------------------------|----------------------------------------|---------------------|
| <b>Monthly Income.</b>           | 5 245.00<br>(180.86)     | 6 317.72<br>(159.08)           | 2 659.09<br>(132.43)             | 413.9** | 5 110.32<br>(209.73)                  | 5 829.25<br>(304.14)                   | 738.9 <sup>NS</sup> |
| <b>Remittances and Pensions.</b> | 462.00<br>(110.19)       | 566.80<br>(154.12)             | 257.72<br>(48.27)                | 323**   | 496.64<br>(134.39)                    | 311.07<br>(72.602)                     | 305.5 <sup>NS</sup> |
| <b>Savings</b>                   | 3 089.40<br>(166.66)     | 4 268.01<br>(102.11)           | 250.00<br>(38.37)                | 218**   | 2 876.88<br>(193.14)                  | 4 015.35<br>(321.74)                   | 750.5**             |
| <b>Value of Assets</b>           | 24 104.24<br>(1, 569.45) | 31 518.36<br>(1, 771.56)       | 6 242.95<br>(368.53)             | 3,619** | 17 029.81<br>(1, 003.41)              | 54 928.57<br>(3, 145.33)               | 6 603**             |

*Standard Error of the means are in parentheses*

*\*\*Significant at 95 percent level of confidence*

*<sup>NS</sup>=Not significant*

*Source: Calculated from field survey, 2007*

The value of the productive asset holdings (mainly oxen, poultry, and livestock) of the entire households sampled on the average was estimated to be R24 104. For households with access to credit the average value of their assets was estimated at R31 518, this is higher than for those without access, which is R6 243. For the constrained households, the average value of their assets was estimated at R17 029 while the unconstrained household the average value is R54 929.

Significance t-test was conducted to test for the difference between the means of the various variables to ascertain if there is a significant difference between the average monthly income, the amount received as remittances and pension, their savings and the value of their asset for household in the two sub groups.

The result reveals that there is significant difference at 95 percent probability level between household average monthly income, remittances/pension, savings and the value of assets for household with access to credit and those without. In addition, the result reveals a significant difference at 95 percent probability level in the savings and the value of assets for constrained and unconstrained households. However, there is no significant difference between their average monthly income and the amount received as remittances/pension.

#### **7.2.5 Household Welfare Measured as Mean Monthly per Adult Equivalent Household Expenditure (MPAEHE)**

Household welfare was measured by its per capita expenditure. The mean monthly per adult equivalent household expenditure from the household survey is presented in Table 7.5.

**Table 7.5 Mean Monthly Per Adult Equivalent Expenditure of all sampled households in the two sub-groups**

| Variables                                                               | All Households (n=150) | Households with Access (n=106) | Households without Access (n=44) | t-test | Credit Constrained Households (n=122) | Credit Unconstrained households (n=28) | t-test |
|-------------------------------------------------------------------------|------------------------|--------------------------------|----------------------------------|--------|---------------------------------------|----------------------------------------|--------|
|                                                                         |                        |                                |                                  |        |                                       |                                        |        |
| <b>Mean Monthly per Adult Equivalent Household Expenditure (MPAEHE)</b> | 334.20<br>(6.81)       | 369.20<br>(5.19)               | 250.00<br>(12.50)                | 27.1** | 230.75<br>(7.69)                      | 379.64<br>(11.13)                      | 27.1** |

*Standard Error of the means are in parentheses*

*\*\*Significant at 95 percent level of confidence*

*Source: Calculated from field survey, 2007*

The average MPAEHE for all the households sampled for the study was estimated to be R334 per adult equivalent. For households with access to credit the average MPAEHE was estimated at R369 per adult equivalent, this is higher than for those without access, which is R250 per adult equivalent. For the constrained households, the average MPAEHE was estimated at R321 per adult equivalent, while for the unconstrained household the average value is about R380 per adult equivalent.

### 7.3 Incidence of Poverty among the Sampled Households

This section examines the relative poverty status of the respondents in the study area by employing the three most commonly used indices of poverty measure, namely the incidence of poverty, the depth of poverty and the severity of poverty. Table 7.6 shows the distribution of the households falling into each mutually exclusive welfare grouping.

**Table 7.6 Household Poverty Classification**

| Group                       | Amount (R)               | Frequency | Percent |
|-----------------------------|--------------------------|-----------|---------|
| <b>Extreme (ultra) poor</b> | < 110.28                 | 15        | 10      |
| <b>Moderate poor</b>        | $110.28 \leq Z < 220.56$ | 51        | 34      |
| <b>Non-poor</b>             | $\geq 220.56$            | 84        | 56      |
| <b>Total</b>                |                          | 150       | 100     |

*Source: Calculated from field survey, 2007*

The analysis of poverty begins by defining the indicator of well-being. Using consumption expenditure as a welfare measure, a poverty line was established. A relative approach in which a household was defined as poor relative to others in the same society or economy, as specified in the methodology was used to define the poverty status and in classifying the households into

poor and non-poor groups. The poverty line defined for the study area was R220,56 per adult equivalents per month. This is closer to the Household Subsistence Level (HSL) of R236,95 per adult equivalent defined for a rural household of 2 adults and 4 children by May *et al.* (1995) for South Africa, and a poverty line of R259,11 for the Northern Province (Gyekye and Akinboade, 2001). The core/extreme poverty threshold for the study area was estimated at R110,28. Sixty-six (44 percent) of the households fall below the poverty line, while eighty-four (56 percent) of the households are classified as non-poor. Of the poor households, fifteen (10 percent) are ultra poor, while fifty-one (34 percent) are moderately poor.

#### 7.4 Decomposition of Poverty by Local Municipality

The incidence of poverty using the monthly household per capita expenditure is presented in Table 7.7.

**Table 7.7 Decomposition of Poverty by Local Municipality**

| Local Municipality    | Head Count Index<br>( $P_0$ ) | Poverty Gap Index<br>( $P_1$ ) | Severity Index<br>( $P_2$ ) |
|-----------------------|-------------------------------|--------------------------------|-----------------------------|
| <b>Nkokonbe</b>       | 0.24                          | 0.13                           | 0.07                        |
| <b>Amahlathi</b>      | 0.46                          | 0.21                           | 0.11                        |
| <b>Ngqushwa</b>       | 0.62                          | 0.27                           | 0.16                        |
| <b>All households</b> | 0.44                          | 0.47                           | 0.039                       |

*Source: Calculated from field survey, 2007*

Using the headcount index, the results showed that 44 percent of the rural households are living below the poverty line. By decomposing across local municipalities, the incidence of poverty indicates that the share of households living in poverty is distinctly the highest in Ngqushwa, where 62 percent of households have a monthly expenditure that is less than R220, 56. This



municipality is followed Amahlathi and Nkokonbe municipalities with 46 percent and 24 percent of their respective households, living below the poverty line.

The poverty gap reflects the total expenditure shortfall of the entire poor household in relation to the poverty line (Ravallion and Bidani, 1994). It provides information regarding how far off households are from the poverty line. This measure captures the average sum of the differences between the poverty line and actual consumption levels of all people living below that line. It also reflects the per capital cost of eradicating poverty, in other words, it gives the total resources that would be required to bring every poor person up to the poverty line. The survey results show that, the depth of poverty is higher in Ngqushwa followed by Amahlathi and Nkokonbe, indicating that more resources is required to bring the poor households exactly up to the poverty line in Ngqushwa than Amahlathi and Nkokonbe. An overall poverty depth ( $P_1$ ) value of 0,47, it will require R103,66 (*i.e.* 0,47 multiplied by R220,56) per individual per month to close the “poverty gap” in the province. In other words, if the province could mobilise resources equal to about 10 percent of poverty line for every individual and were appropriately distributed to the poor in the amount needed so as to bring each individual up to the poverty line, then poverty could be eradicated, at least in theory.

With the population of the poor in the province estimated at 4.6 million people (HSRC, 2004), about R476,84 million per month or about R5,72 billion per annum would be the total minimum amount required to eliminate poverty at the poverty line. This estimated minimum resource requirement implies that redistribution on its own requires capital that is unlikely to be available in the provincial economy in the short term.

The severity of poverty ( $P_2$ ), is a measure of a distributionally sensitive index that can detect the expenditure distribution among the poor. Its decomposability property allows for the investigation of the severity of poverty in more detail. This measure also satisfies most welfare axioms, namely, the monotonicity axiom<sup>9</sup> and the transfer axiom<sup>10</sup>. The result in Table 7.7 shows that the severity of poverty ( $P_2$ ) among households surveyed is 0.039. Poverty is more severe in Ngqusha municipality with a severity index ( $P_2$ ) value of 0.16, while Amahlathi and Nkokonbe municipalities have a severity index of 0.11 and 0.07 respectively.

**Table 7.8      Geographical Concentration and Average Expenditure Shortfall of the Poor**

| Local Municipality    | Expenditure shortfall<br>(%) | Contribution to poverty<br>(%) | Concentration of the<br>poor (%) |
|-----------------------|------------------------------|--------------------------------|----------------------------------|
| <b>Nkokonbe</b>       | 13                           | 19.96                          | 18.18                            |
| <b>Amahlathi</b>      | 21                           | 31.36                          | 34.84                            |
| <b>Ngqushwa</b>       | 27                           | 46.96                          | 46.96                            |
| <b>All households</b> | 47                           | -                              | -                                |

*Source: Calculated from field survey, 2007*

In Table 7.8, the poverty gap ( $P_1$ ), which is the expenditure shortfall are presented in percentages. The poverty gap for the study area was calculated to be 0.47. This means that on the average the poor households have an expenditure shortage of 47 percent of their specific poverty lines. It can be inferred also from Table 7.8 that if suitable measures are taken to alleviate and eventually eliminate poverty in Ngqushwa, Amahlathi and Nkokonbe local municipalities, then the severity of poverty would be reduced by about 45, 31 and 20 percent respectively i.e. their

<sup>9</sup> Given other things, a drop in the income of a poor household must increase the poverty measure.

<sup>10</sup> Given other things, a pure transfer of income from a poor to a less poor household must increase the poverty measure.

percentage contribution to poverty in the study area. The result also revealed that poverty is not only most severe in Ngqushwa, but there is also a high geographical concentration of the poor in the municipality as about 47 percent of the poor households sample reside in this municipality.

### **7.5 Decomposition of Poverty by Socio-economic Characteristics**

The incidence of poverty was also decomposed by different socio-economic characteristics of the households, focusing on nine key factors, namely, the gender of the household head, marital status, age, education, dependency ratio, occupation, credit constraint status, land ownership and social capital. The results are presented in Table 7.9.

The incidence of poverty is higher among household headed by females than for those headed by males. In addition, among single parents than for married couples.

Decomposition of poverty by age reveals a higher incidence of poverty among the youth and the elderly. This could be a result that most youth in South Africa lack the necessary skills to be gainfully employed, while the elderly are too old and fragile to engage in any productive work and therefore relies solely on social grants and remittances/pension.

The result of the empirical survey further reveals a higher incidence of poverty among the uneducated farming households with high dependency ratios. The incidence of poverty is also higher among household who are constrained in their access to production resources such as credit and land. There is higher incidence of poverty among households who own no land for subsistence production and have no access to credit. Similarly, all household heads that do

belong to any social group or organization are all poor, while the incidence of poverty for those that belongs to two or more groups is lower.

**Table 7.9      Decomposition of Poverty by Socio-Economic Characteristics**

| Socio-economic Characteristics              | (n) | Head Count Index ( $P_0$ ) | Poverty Gap Index ( $P_1$ ) | Severity Index ( $P_2$ ) |
|---------------------------------------------|-----|----------------------------|-----------------------------|--------------------------|
| Gender of household head                    |     |                            |                             |                          |
| <b>Male</b>                                 | 54  | 0.41                       | 0.11                        | 0.047                    |
| <b>Female</b>                               | 96  | 0.56                       | 0.10                        | 0.034                    |
| Marital status                              |     |                            |                             |                          |
| <b>Single</b>                               | 56  | 0.42                       | 0.09                        | 0.034                    |
| <b>Married</b>                              | 94  | 0.36                       | 0.13                        | 0.087                    |
| Age                                         |     |                            |                             |                          |
| <b>28-39</b>                                | 61  | 0.62                       | 0.31                        | 0.19                     |
| <b>40-59</b>                                | 75  | 0.24                       | 0.15                        | 0.08                     |
| <b>60-69</b>                                | 14  | 0.71                       | 0.39                        | 0.15                     |
| Education                                   |     |                            |                             |                          |
| <b>(Illiterate) 0</b>                       | 29  | 1.0                        | 0.07                        | 0.03                     |
| <b>Primary (1-5 yrs schooling)</b>          | 34  | 0.73                       | 0.17                        | 0.09                     |
| <b>Middle (6-9 yrs schooling)</b>           | 57  | 0.21                       | 0.06                        | 0.023                    |
| <b>Matric and above (10+ yrs schooling)</b> | 30  | 0                          | 0                           | 0                        |
| Occupation                                  |     |                            |                             |                          |
| <b>Farming households</b>                   | 134 | 0.48                       | 0.24                        | 0.13                     |
| <b>Others</b>                               | 16  | 0.12                       | 0.29                        | 0.11                     |
| Dependency ratio                            |     |                            |                             |                          |
| <b>0-100%</b>                               | 125 | 0.33                       | 0.12                        | 0.08                     |
| <b>Above 100%</b>                           | 25  | 1.0                        | 0.45                        | 0.32                     |
| Credit constraint status                    |     |                            |                             |                          |
| <b>Yes</b>                                  | 122 | 0.54                       | 0.29                        | 0.16                     |
| <b>No</b>                                   | 28  | 0.00                       | 0.00                        | 0.00                     |
| Land Ownership                              |     |                            |                             |                          |
| <b>No</b>                                   | 140 | 0.60                       | 0.23                        | 0.10                     |
| <b>Yes</b>                                  | 10  | 1.0                        | 0.08                        | 0.03                     |
| Social Capital                              |     |                            |                             |                          |
| <b>0</b>                                    | 27  | 1.0                        | 0.09                        | 0.04                     |
| <b>1-2</b>                                  | 95  | 0.38                       | 0.19                        | 0.06                     |
| <b>Above 2</b>                              | 28  | 0.11                       | 0.08                        | 0.04                     |

*Source: Calculated from field survey, 2007*

## 7.6 The Determinants of Household Poverty

The determinants of household poverty are presented in Table 7.10.

**Table 7.10 Tobit Regression Estimates of the Determinants of Household Poverty**

| Variables                               | Coefficient            | Standard Error | t-statistics | $P > [t]$ |
|-----------------------------------------|------------------------|----------------|--------------|-----------|
| <b>Gender</b>                           | -0.1986 <sup>*</sup>   | 0.1101         | -1.8041      | 0.0786    |
| <b>Age</b>                              | 0.1357 <sup>*</sup>    | 0.0761         | 1.7832       | 0.0694    |
| <b>Education</b>                        | -0.0196 <sup>**</sup>  | 0.0084         | -2.3333      | 0.0341    |
| <b>Land ownership</b>                   | 0.4390 <sup>***</sup>  | 0.1390         | 3.1582       | 0.0018    |
| <b>Credit availability</b>              | -0.5643 <sup>**</sup>  | 0.2301         | -2.4524      | 0.0315    |
| <b>Occupation</b>                       | 0.2473 <sup>**</sup>   | 0.1063         | 2.3264       | 0.0261    |
| <b>Remittance &amp; pension</b>         | -0.0296                | 0.0285         | -10385       | 0.7545    |
| <b>Dependency ratio</b>                 | 0.0468 <sup>**</sup>   | 0.0178         | 2.6292       | 0.0401    |
| <b>Assets value</b>                     | 0.4518 <sup>***</sup>  | 0.1261         | 3.5828       | 0.0027    |
| <b>Social capital</b>                   | -0.3421 <sup>*</sup>   | 0.1823         | -1.876       | 0.0654    |
| <b>Constant</b>                         | -1.9621 <sup>***</sup> | 0.4517         | -4.3438      | 0.0012    |
| <b>Sigma (<math>\delta</math>)</b>      | 0.2632 <sup>***</sup>  | 0.1472         | 17.875       | 0.0074    |
| <b>No of Observation = 150</b>          |                        |                |              |           |
| <b>LR Chi 2 (1)= 64.01</b>              |                        |                |              |           |
| <b>Probability &gt; Chi 2 = 0.0000</b>  |                        |                |              |           |
| <b>Pseudo (<math>R^2</math>) = 0.78</b> |                        |                |              |           |
| <b>Log likelihood = -175.263</b>        |                        |                |              |           |

\*\*\*, \*\*, and \* denote significance of estimated coefficient at 1, 5, 10 percent levels of probability respectively.

Source: Tobit regression estimation using the software LIMDEP (1997).

The maximum likelihood estimates of the Tobit regression result show that  $\text{Sigma}(\delta)$  is 0.2632 with a t-value of 17.875 and is statistically significant at 1 percent level. This implies that the model has a good fit to the data. According to the estimation results, rural poverty is strongly linked to household head's gender, age, education, land ownership, credit availability, occupation, dependency ratio and value of assets.

The age of the household head is significant at 10 percent and is positive. This implies that the likelihood of a household to remain poor tends to increase with an increase in the age of the household head. This could be due to the fact many elder people have to fend for themselves and in most cases do not have others on whom to rely for support. Although many receive old-age grant, as demonstrated by Roberts (2001), these grants are in no way sufficient to keep a household out of poverty. Thus, the degree to which a poor elderly person manages to escape poverty, would generally depend on changes in his household circumstances, for instance if a child secured a good job, a decline dependency ratios accompanied by some relief of financial burdens or if his assets tend to increase with age.

According to the estimation, the gender of the household head is significant at 10 percent level and has a negative sign, which implies that female-headed households are more likely to be poor than household that are male-headed. This could be because men are more in control of production resources than women are. Again, most female-headed households in South Africa are the so-called "granny households", *i.e.* the female household head is the grandmother rather than the mother of the children in her care.

The coefficient of the years of formal education of household head is negative and statistically significant at 5 percent level. Thus implying that, the more educated a household head is, the less likely he is to remain poor. Education is expected to lead to increased earning potential and improve occupational and geographical mobility of labour. Higher levels of educational attainment will provide higher levels of welfare for the household. A study in Malawi, by Mukherjee and Benson (2003), demonstrated that raising the maximum level of educational attainment by one step, *i.e.* from Standard 4 to 8, from Standard 8 to JCE, or JCE to MSCE, will raise household per capita consumption on the average by 22, 19, 11.5 and 17 percent in Southern rural, Central rural, Northern rural and urban centres respectively.

Dependency ratio is statistically significant at 5 percent level and has a positive sign. This implies that the larger the dependency ratio, the higher the intensity of poverty in that household. This could be because of much pressure exerted on the limited resources at the household level. Fewer earners and a large number of dependants provide lesser opportunities to consume and gradually reduce the chances of getting out of the lower per capita consumption (poverty). Generally, poor households are found with higher dependency ratios.

Household head primary occupation is statistically significant at 5 percent level and has a positive sign, implying that household heads engaging in other sectors of the economy are less likely to be poor as compared to those in the agricultural sector. The vast majority of the households are stuck in rural areas and are engaged in agriculture but do not own land and other resources to progress as farmers. These would lead one to expect that agriculture in these rural areas is unlikely to provide any notable welfare benefits (Aliber, 2003).

Land ownership is positively related to household poverty and is statistically significant at 1 percent level. This could be attributed to the anomalous situation in South Africa presently, whereby many rural households do not own land; some who do own land have very small or very poor land, or both; and many who own land derives little or no economic benefits from it, in terms of subsistence production (Aliber, 2003).

Asset holdings (mainly oxen, poultry, livestock) of households is statistically significant at 5 percent level and has negative sign, thus implying that, the more the assets of a household is, in form of oxen, poultry, and livestock, the less likely the household is to remain poor. A possible explanation for this could be because asset holdings are both an economic resource and a source of social prestige especially among poor rural dwellers. In different ways, households draw from their assets to carry on with their lives, to make profits in good times and to sustain themselves in bad times. More so, assets can help establish whether future generations will continue to be trapped in poverty or manage to escape from its hold.

The social capital coefficient has a negative sign and is statistically significant at 10 percent level, thus implying that the more social groups/network a household belongs to the less likely for it to be poor. A possible explanation could be those suggested by the Productivity Commission (2003) that social capital can generate benefits by facilitating the spread of knowledge and innovations. The higher the degree of connectedness of a community the more easily its people would be able to transfer information around and the more people the information is likely to reach. Also through individual benefits – people with good access to social capital tend to be “hired, housed, healthy, happy” than those without.



Households with access to credit have lower levels of poverty. Credit availability coefficient is statistically significant at 1 percent level and negative. It has been documented that access to credit market enhances household welfare through the provision of investment credit to boost household income (Adugna and Heidhues, 2000) as well as consumption-smoothing (Zeller *et al.* 1994). This could significantly influence a household's income by helping its members to tap economic opportunities, thereby assisting them to get out of poverty (Binswinger and Khandker, 1995; Adugna and Heidhues, 2000).

## **7.7 The Determinants of Household Access to Credit**

The task in this section is to determine which specific variables influence households' access to credit. Which economic, demographic and physical factors enhance or inhibits households access to credit. Access to credit is explained by using a logistic regression analysis, as the information is available only on whether a credit transaction was observed or not, rather than on the amounts of credit received. In logistic analysis one can directly estimate the probability of an event occurring and identifies the variables that are useful in making such predictions. The results from the estimation of the logistic regression are presented in Table 7.11. The coefficients of discrete choice regressions are only useful for their sign and significance but not for their magnitude. In order to understand the impact of the explanatory variables on the dependent variable, the relevant marginal effects are also presented.

**Table 7.11 Logistic Regression Estimates of Determinants of Household Access to Credit**

| Variables                                   | Coefficient | Standard Error | t-statistics                                      | Marginal Effects |
|---------------------------------------------|-------------|----------------|---------------------------------------------------|------------------|
| <b>Gender</b>                               | 0.4130**    | 0.1640         | 2.517                                             | 0.021            |
| <b>Age</b>                                  | -2.4470     | 0.4733         | -0.517                                            | -0.034           |
| <b>Education</b>                            | 0.0741      | 0.0859         | 0.862                                             | 0.004            |
| <b>Monthly Income</b>                       | 0.4320*     | 0.2666         | 1.620                                             | 0.026            |
| <b>Land Ownership</b>                       | 0.2149      | 3.9072         | 0.055                                             | 0.056            |
| <b>Value of Assets</b>                      | 0.2537*     | 0.1366         | 1.856                                             | 0.058            |
| <b>Savings</b>                              | 0.4565*     | 0.2705         | 1.687                                             | 0.034            |
| <b>Remittance &amp; Pension</b>             | -0.0058     | 0.0162         | -0.358                                            | -0.006           |
| <b>Dependency ratio</b>                     | -0.2883***  | 0.0677         | -4.256                                            | -0.038           |
| <b>Debt-Income ratio</b>                    | -1.7921***  | 0.5841         | 3.068                                             | 0.241            |
| <b>Social Capital</b>                       | 0.4632**    | 0.1925         | 2.405                                             | 0.027            |
| <b>Awareness</b>                            | 0.0096      | 0.4480         | 0.214                                             | 0.006            |
| <b>Municipality:</b>                        |             |                |                                                   |                  |
| <b>Nkokonbe</b>                             | 1.6047      | 47.197         | 0.034                                             | 0.027            |
| <b>Amahlathi</b>                            | 0.5178      | 6.997          | 0.074                                             | 0.054            |
| <b>Ngqushwa</b>                             | 0.5078      | 7.359          | 0.069                                             | 0.045            |
| <b>Constant</b>                             | 1.1034***   | 0.1344         | 8.209                                             |                  |
| <b><math>R^2 = 0.69</math></b>              |             |                |                                                   |                  |
| <b>Adjusted <math>R^2 = 0.64</math></b>     |             |                | <b>Chi-square (<math>\chi^2</math>) = 114.502</b> |                  |
| <b>Log likelihood function = -90.510</b>    |             |                | <b>Degrees of freedom = 14</b>                    |                  |
| <b>Restricted log likelihood = -117.766</b> |             |                | <b>Significance level = .00000</b>                |                  |

*Marginal effects in percentage points, calculated at sample means.*

*\*\*\*, \*\*, and \* denote significance of estimated coefficient at 1, 5, 10 percent levels of probability respectively.*

*Source: Logistic regression estimation using the software LIMDEP (1997).*

Gender has a positive sign and is significantly different from zero at the 5 percent confidence level. Being male increases the probability of access to credit. This result may suggest that females are being discriminated against in the credit markets in the study area. This result confirms Zeller *et al.* (1994), whose results indicated discrimination against women in the informal credit markets in Gambia. A possible explanation is that household resources are

mainly controlled by men, thus lenders perceived men as more creditworthy. On the other hand, in the Xhosa culture men are seen as the head of the households, it could therefore be argued that, there is no discrimination against women as they are being effectively represented by men.

Households' monthly income is positively related to the probability of access to credit and is statistically significant at the 10 percent confidence level. Thus implying that the higher the households' monthly income, the more likely that a credit agent will lend to it. A probable explanation for this could be that monthly income may serve as a measure of creditworthiness, household head with more income are more likely to have their credit demand met and could be a measure of repayment capability as they may be seen by the lenders as capable of repaying his loan as at when due.

The value of households' assets, however, has a positive sign and is statistically significant at the 10 percent confidence level. The greater the assets value, the higher the probability of having access to credit. The rationale for this is that since lenders require repayment plus interest in cash, they could see the client's assets as the last resort to liquidate to recover the credit in case of loan default. Households saving also had a positive and statistically significant influence on access to credit at the 10 percent confidence level. This could be as a result that savings could be substituted for collateral, especially if savings are deposited with the financial institution providing the credit.

Dependency ratio is negatively related to credit accessibility and is statistically significant at the 1 percent confidence level. This implies that the probability of having access to credit declines with increase in households' dependency ratio. High dependency ratio exerts consumption stress

on the household, and lenders might be averse to lending to these households because of fungibility of credit, *i.e.* the loans might be channelled towards other uses rather than its intended productive purposes. Dependency ratio as a proxy for risk-bearing capacity indicator confirms that the higher the number of dependant household members, the more likely that the households are to suffer risk. By implication household with high dependency ratio would be judged by lenders to be less creditworthy.

Loan repayment capacity, measured as debt-income ratio (Zeller, 1994), had a negative sign is statistically related to households' accessibility to credit at the 1 percent confidence level. The possible explanation for this result is that the higher the debt-income ratio the higher the exposure to loan default risks which reduces the probability of credit access.

Social capital as a social collateral is used to include membership of association where personal guarantees or recommendations of potential clients are given, and social networking, where the degree of connectedness of a community makes it the more easily for its people to transfer information around. The coefficient of this variable has a positive sign, and is statistically related to households' accessibility to credit at 1 percent significance level. A possible explanation is that because the guarantors sign an undertaking with the financial institutions, they monitor and exert pressure on the borrowers to ensure the full repayment of the loan as at when due. Borrowers who have access to this type of social capital are more likely to have credit access.

A more appealing interpretation of parameter estimates in a logit model is explaining the marginal effect of each exogenous variable. The marginal effects were an indication of the effect

of one unit change in an exogenous variable on the probability that a household would have access to credit. A possible interpretation of the results presented in Table 7.11 is that for instance, it is expected that an additional year older for the head of the household, with all other variables held at their mean values decrease the probability of a household having access to credit by about 0.034 percent. Similarly, increasing the household monthly income by one rand will increase the probability of the household access to credit by 0.026 percent. An increase in household repayment capacity (that is a decrease in debt-income ratio) by one unit will increase the probability of access to credit by 0.24 percent.

The estimated coefficients for the municipality dummies are not significant statistically. This reflects that household probability to access credit in the credit market in the study area is not affected by these location variables. The constant term has been shown to be significantly different from zero in the analysis indicating that there might be other factors that influence access to credit in the study area, which have not been modelled in this analysis. This is further reflected in the  $R^2$  value of 0.69, which shows that the estimated equation is explaining only 69 percent of the variation in the household access to credit. Nevertheless, this value shows a reasonably high degree of adequacy of the model in analyzing the determinants of household access to credit.

The joint hypothesis that all the coefficients of the logistic equation are zero is rejected at the 1 percent confidence level. The computed value of  $-2(\log \text{likelihood ratio})$  is 90.510 and this is larger than the  $P=0.01$  value of  $\chi^2$  (14 degrees of freedom) which is 29.414. This confirms that

the slopes of the coefficients are statistically significant from zero. The alternative hypothesis is thus accepted at this level of significance.

## **7.8 Credit Constraint and Household Welfare**

The analytical technique used is the switching regression model. This model allows for a joint estimation of the determinants of households' credit constraint condition and the household welfare in the two regimes, in this case, depending on whether a household is credit constrained or not. Distinct regressions are estimated for credit constrained households and unconstrained households, with mean monthly per adult equivalent household expenditure as an explanatory variable. To correct for potential self-selection bias, a probit credit constrained function was estimated by including the inverse Mills ratio and used to correct the error term in each equation. These equations are estimated jointly using the Maximum Likelihood. A discussion of this modelling approach has been presented in section 6.5.

### **7.8.1 The Determinants of Household Credit Constraint Condition**

A probit model was an appropriate choice for this analysis, as information was available only on whether a household was credit constrained or unconstrained in the credit market. The set of explanatory variables used here included gender, age, years of school attendance, land ownership, value of assets, savings, remittance and pension, dependency ratio, repayment capacity (debt-income ratio) and social capital.

The maximum likelihood estimates of the probit model showing the determinants of the household credit constrained conditions are presented in Table 7.12

**Table 7.12 Probit Regression Estimates of the Determinants of Household Credit Constraints Condition – Switching Regression (Part 1).**

| Variables                                    | Coefficient | Standard Error | t-statistics                                      | $P[ Z  > z]$ |
|----------------------------------------------|-------------|----------------|---------------------------------------------------|--------------|
| <b>Gender</b>                                | -0.6785***  | 0.2699         | -2.513                                            | 0.0047       |
| <b>Age</b>                                   | -0.0982***  | 0.3591         | -2.734                                            | 0.0001       |
| <b>Education</b>                             | -0.0103     | 0.2873         | -0.036                                            | 0.1556       |
| <b>Monthly Income</b>                        | 0.0011      | 0.0024         | 0.450                                             | 0.1922       |
| <b>Land Ownership</b>                        | -0.0675**   | 0.0343         | -1.964                                            | 0.0375       |
| <b>Value of Assets</b>                       | -0.0014***  | 0.0007         | -1.890                                            | 0.0021       |
| <b>Savings</b>                               | -0.0001     | 0.0000         | -1.526                                            | 0.9644       |
| <b>Remittance &amp; Pension</b>              | -0.0002     | 0.0001         | -1.395                                            | 0.1725       |
| <b>Dependency ratio</b>                      | 0.0042**    | 0.0026         | 1.615                                             | 0.0424       |
| <b>Debt-Income ratio</b>                     | 0.1345**    | 0.0544         | 2.469                                             | 0.0478       |
| <b>Social Capital</b>                        | -0.3904***  | 0.1617         | -2.414                                            | 0.0104       |
| <b>Constant</b>                              | -5.3653***  | 0.5066         | -10.590                                           |              |
| <b><math>R^2 = 0.65</math></b>               |             |                |                                                   |              |
| <b>Adjusted <math>R^2 = 0.61</math></b>      |             |                | <b>Chi-square (<math>\chi^2</math>) = 23.2636</b> |              |
| <b>Log likelihood function = -160.5712</b>   |             |                | <b>Degrees of freedom = 10</b>                    |              |
| <b>Restricted log likelihood = -172.2030</b> |             |                | <b>Significance level = .00000</b>                |              |

\*\*\*, \*\*, and \* denote significance of estimated coefficient at 1, 5, 10 percent levels of probability respectively.

Source: Logistic regression estimation using the software LIMDEP (1997)

The age, gender of the household head, debt-income ratio, dependency ratio, asset ownership and social capital are significant determining factors influencing the credit constraints of households.

The age of the household head, being male and the social capital variable are negatively related to the credit constraint condition. In other words, older, male-headed households and those that are members of associations and have guarantors who sign an undertaking with the lenders are less likely to be credit constrained in the credit market. The estimated coefficients for these

variables are significantly different from zero at the 1 percent confidence level. Indeed, older people may have had more opportunities to build social links, may have larger networks and are therefore less likely to be credit constrained.

The coefficient of the household dependency ratio is positively related to credit constrained condition and is statistically significant at the 5 percent confidence level, which implies that the probability of a household being credit constrained increases as its dependency ratio increases. A possible explanation is that high dependency ratio exerts consumption stress on the household and by implication; household with high dependency ratio would be judged by lenders to be less creditworthy and are more likely to suffer risk.

The value of households' assets and land ownership are also negatively related to the credit constrained condition and are statistically significant from zero at the 1 percent and the 5 percent confidence level respectively, implying that probability of being credit constrained decreases for households with more assets and for those having title deeds to land. This result could be explained by the fact that the value of visible assets could be used by lenders as a measure of a client's repayment capacity; and may view assets as last resort to liquidate to recover the credit in the event of default by borrowers. Previous studies suggest that clients with fewer assets are more likely to have repayment problems (Aguilera and Gonzalez-Vega, 1993; Hunte, 1993; Sharma and Zeller, 1997).

The debt-income ratio was used as a proxy for repayment capacity. The empirical result showed repayment capacity is positively related to credit constrained condition and is statistically significant from zero at the 5 percent confidence level, implying a higher probability of being



credit constrained for households with high debt-income ratio. The possible explanation for this result is that the higher the debt-income ratio, the higher the exposure to default risk. This raises the likelihood of the household being credit constrained. Ability of the borrower in terms of trustworthiness and ability in serving debts is crucial to the lender.

The  $R^2$  value for the determinants of household credit constraint condition is 0.65. This indicates that 65 percent of the factors explaining household credit constrained conditions are included in the probit model.

### **7.8.2 The Effects of Credit Constraints on Households' Welfare**

The mean monthly per adult equivalent household expenditure (MPAEHE) is used as a proxy for household welfare. The same explanatory variables used in the credit constrained criterion equation were used in the credit constrained and unconstrained equations. This is because these variables were transformed in the probit credit constrained criterion equation; therefore, singularity was not a problem. The effect of credit constraints on household welfare is presented in Table 7.13.

Households' savings, social capital, remittance and pension all have a positive and statistically significant effect on household welfare for credit-constrained households. However, dependency ratio has a negative and statistically significant effect on household welfare for credit-constrained households.

**Table 7.13 Effects of Credit Constraint on Household Welfare, Estimated by Maximum Likelihood Switching Regression - Switching Regression (part 2).**

| Variables                                  | Coefficients | Standard Errors                     | t- statistics |
|--------------------------------------------|--------------|-------------------------------------|---------------|
| <b>Credit constrained equation:</b>        |              |                                     |               |
| Gender                                     | -0.1747      | 0.2877                              | -0.607        |
| Age                                        | 0.0123       | 0.1518                              | 0.812         |
| School attendance                          | 0.0049       | 0.0317                              | 0.155         |
| Monthly income                             | 0.0069       | 0.0076                              | 0.906         |
| Land ownership                             | 0.1323       | 0.7782                              | 0.170         |
| Value of assets                            | -0.0012      | 0.0009                              | -1.212        |
| Saving                                     | 0.0406*      | 0.0229                              | 1.767         |
| Remit & pension                            | 0.0017**     | 0.0007                              | 2.464         |
| Dependency ratio                           | -0.0048**    | 0.0024                              | -1.960        |
| Repayment record                           | 0.3245       | 0.3663                              | 0.886         |
| Social capital                             | 0.3604**     | 0.0001                              | 2.414         |
| Constant                                   | 4.234***     | 0.2243                              | 18.874        |
| <b>Credit unconstrained equation:</b>      |              |                                     |               |
| Gender                                     | 0.3172***    | 0.1206                              | 2.630         |
| Age                                        | 0.0115***    | 0.0037                              | 3.066         |
| School attendance                          | 0.0196**     | 0.0096                              | 2.024         |
| Monthly income                             | 0.3242**     | 0.6438                              | 1.986         |
| Land ownership                             | 0.3724**     | 0.1576                              | 2.363         |
| Value of asset                             | 0.0059*      | 0.0033                              | 1.737         |
| Saving                                     | 0.0032       | 0.0025                              | 1.280         |
| Remit & pension                            | 0.0056       | 0.0075                              | 0.746         |
| Dependency ratio                           | -0.0079**    | 0.0036                              | -2.194        |
| Repayment record                           | 0.1346       | 0.1178                              | 1.143         |
| Social capital                             | -0.0059      | 0.6189                              | -0.095        |
| Constant                                   | 3.896***     | 0.1134                              | 34.342        |
| <b>Variance estimates:</b>                 |              |                                     |               |
| $\sigma_1^2$                               | 0.601*       | 0.3288                              | 1.828         |
| $\sigma_0^2$                               | 0.300***     | 0.2980                              | 10.097        |
| $\rho_1$                                   | 0.097*       | 0.0488                              | 1.987         |
| $\rho_0$                                   | -0.675***    | 0.1063                              | -6.345        |
| <b>Log likelihood function = -260.3271</b> |              | <b>Number of observations = 150</b> |               |

\*\*\*, \*\*, and \* denote significance of estimated coefficient at 1, 5, 10 percent levels of probability respectively.

Source: Switching regression estimation from field survey data using the software LIMDEP (1997).

For the unconstrained households, gender, specifically being male, age, school attendance, monthly income, land ownership and value of assets, all have a positive and statistically significant effect on the household welfare. While dependency ratio, has a negative and statistically significant effect on the welfare of the unconstrained households.

The correlation between the credit status equation error and welfare equation for the credit constrained regression error is 0.097 and is statistically different from zero. The corresponding correlation between the credit status equation error and welfare equation for the credit unconstrained regression error is -0.675 and is statistically different from zero. These signs and statistical significances agree with the expectation that unconstrained households in the credit market have a higher welfare outcome than the constrained households. This result indicates that credit constraint is endogenous and shows that it is necessary to model and include the credit constraint criterion equation in estimating the effects of credit constraints on household welfare. A Wald test of whether the estimated coefficients as a group are different between credit constrained and unconstrained equations produced a  $\chi^2$  value of 32.56 ( $\alpha = 0.05$ ). This value is greater than  $Z_\alpha = 1.645$ . The null hypothesis is therefore rejected, concluding that the coefficients are statistically significantly different for credit constrained and unconstrained households.

The switching regression is therefore more robust than simple OLS welfare regressions imposing automatically the exogeneity of credit constraint condition. According to the equations of expected household welfare conditionally to credit constraint conditions (equation 4a and 4b) and the sign of correlation terms ( $\rho_{1\mu}$  and  $\rho_{0\mu}$ ), neglecting selection would then overestimate welfare for both credit constrained and unconstrained households, but this overestimation would

be larger for unconstrained households. The switching regression also highlights that the predictors of household welfare differs strongly for credit constrained and unconstrained households.

### **8.1 Introduction**

Since the advent of democracy governance in 1994, the South African government has put in place some policy measures meant to restructure the economy. The democratic government has worked hard to reduce poverty by promoting the deepening of the financial market and the provision of wide range of financial services, especially credit to the poor.

Thus in this study, the broad objective is to examine the determinants of household access to credit and the effect of credit constraints on household welfare in the Eastern Cape Province, South Africa. The study specifically estimate the relative poverty status of the rural households, it indentified the determinants of household poverty, the factors influencing household access to credit as well as the factors influencing that they are credit constrained in the credit market. The effect of credit constraints on the household welfare was also assessed.

The summary and conclusions from the study and policy recommendations follows in the next two sections. The last section of the chapter provides an outline of possible areas for future research.

## **8.2 Summary and Conclusions of the Findings of the Study**

Strategies aimed at poverty alleviation need to identify factors that are strongly associated with poverty and are amenable to modification by policy. In this study, an attempt has been made to explore the determinants of poverty among rural households in the Eastern Cape Province. It sought to identify the poor and evaluate the factors that determine their poverty status. The study employs a household welfare function, approximated by household expenditure per adult equivalent to explain the incidence of poverty and its correlates.

A poverty profile was constructed by dividing the population into subgroups according to local municipality areas and then the proportion of poverty concentrated in each municipality was determined using the Foster, Greer, and Thorbecke (FGT) poverty index. The results revealed that nearly 44 percent of the sampled households live below poverty line with average poverty gap of 0.097. Within these rural households, poverty incidence was more concentrated particularly among the agricultural households as compared to non-farm households. This results show how severe the poverty is in the rural areas of South Africa. Even though the headcount ratio, depth and severity of poverty have shown variation based on the criteria used, all confirm that poverty is a problem of major concern. Tobit regression estimates shed light on the determinants of poverty. The result shows that rural poverty is strongly linked to household head's gender, age, education, dependency ratio, occupation, land ownership, credit availability and assets ownership.

Credit has being identified as an important instrument for improving the welfare of the poor directly and for enhancing productive capacity through financing investment by the poor in their

human and physical capital. This study further investigates the individual and household characteristics that influence credit market access in South Africa. The aim is to provide a better understanding of the household level characteristics, not only because they influence household's demand for credit but also because potential lenders are most likely to base their assessment of borrowers' creditworthiness on such characteristics. Sufficient information was not obtained from the household level datasets. Even though little is known about the institutions that provided the credit and the conditions, under which the credit was granted or refused. The study has successfully modelled the determinants of household access to credit using household demographic and socioeconomic characteristics. The results of the study had shown that credit supplied by lenders is determined largely by crucial factor such as gender, monthly income, assets value, savings, dependency ratio, repayment capacity, and social capital. It can be concluded therefore that security and guarantee are the main criterion lenders consider in granting credit. In other words, credit risk assessment by lenders plays a larger role in determining whether an applicant for credit had access.

The current policy emphasis on credit both as a development tool and as an effective strategy for poverty alleviation coupled with the limited availability of funds for credit to those that really need it has become a crucial issue. Rural households in developing countries may become trapped in poverty by lack of finance needed to undertake profitable investments. Improved access to credit could generate pro-poor economic growth if the credit constraints that poor households faced are relaxed. This study goes a step further to examine the effect of credit constraints on household welfare. Identifying credit-constrained households based on direct elicitation of credit constrained status from survey questions about restrictions on credit, the

study employed an endogenous switching regression model to analyse the effect of credit constraints on households' welfare. Empirical results indicate that increased credit access to constrained households could generate improved welfare.

### **8.3 Policy Implications**

Although a number of specific policy implications could be drawn from the estimation results. The following policy implications of the study stand out, and are suggested in order to improve rural households' access to the credit market and welfare in the Eastern Cape Province of South Africa.

The rural poor generally face interlocking barriers to economic, social and political opportunities. They lack a political voice because they are located remotely from the seats of power. These factors limit their access to infrastructure, and their ability to obtain or utilize social services (such as health and education) and, in some cases, reduce their rights to own or access land-based resources. Therefore, empowering rural populations of the Eastern Cape Province to take charge of their development agenda is essential for poverty reduction.

The empirical evidence suggests that rural poverty is multidimensional and requires a multi-strategy solution. The decentralized type of planning is required to alleviate rural poverty in South Africa in general and the Eastern Cape in particular. There is an ardent need of the economic infrastructure with a particular focus on health and education facilities. The result of the Tobit regression of the determinants of poverty is in line with the generally accepted theory. Having higher dependency ratio is generally correlated to poverty status, as greater member of



the households are dependent on the fewer income earners. This therefore increases household's poverty risk. Measures to reduce the dependency load within households will reduce poverty. Population and reproductive health programmes and policies that reduce the unmet need for family planning will promote welfare directly will help promote the achievement of reducing poverty by half in developing countries as called for by the Millennium Development Goals (MDGs). Reproductive health is not only a good in itself but also a factor than can contribute to the reduction of poverty. The benefit from the potential effects in terms of poverty reductions in fertility should be accompanied by appropriate policies that promote employment creation and savings, and that channel savings into productive investment in the rural areas.

Educational attainment is also an important factor associated with the incidence of poverty. It should be closely considered in implementing poverty alleviation strategies and programmes. Education can be a powerful tool for empowerment and building capacity and capability to challenge inequalities. This can often be addressed by policy and practices through informal and informal routes and through development organizations and initiatives for which 'education' is not their core business. Good examples are often multisectoral programmes. They may focus on a particular form of poverty reduction (e.g. income, participatory, capability or consequential), but usually result in addressing the other aspects through evidence of positive spin-offs. Success stories are context specific, though their common feature is usually the adoption of pro-poor, participatory strategies. It is this feature, which potentially creates social capacity for sustainability.

Participatory poverty often requires participatory education strategies to raise awareness of rights, responsibilities and potential for change. Models of addressing participatory and identity poverty should involve inclusive education practices and reflection-action processes, usually in context specific, informal settings. The shared educational approach could be a mixture of informal, collectively supportive environments where awareness is raised about the structures around the poor that contribute to their disempowerment. Then poor are then supported in finding a voice to challenge the systems that created their impoverishment.

Strategies for addressing capability poverty should not focus on narrowly defined skills agenda alone, but adopt a context specific and culturally sensitive curriculum, which draws on indigenous knowledge and practices as a starting point for enhancing literacy and numeracy skills. Education that addresses income poverty amongst adults should be non-formal. For example, vocational skill training centres may target rural or otherwise disadvantaged people. This should takes a livelihoods approach, by combining vocational skills and literacy training for disaffected young females, with participatory methodologies in a multisectoral approach to capacity building and awareness raising.

Microcredit forums for women, through targeted informal education, can address both capability and participatory poverty by raising awareness of women's rights and the role of the state in limiting the wider benefits of a credit system that controls women's savings and potential for growth. The educational component creates the difference between empowerment and poverty reduction or simply a hegemonic reinforcement of the status quo for women. Of special importance is female education as the result of the study indicates that female-headed households are more likely to be poor than male headed households. Training programmes could be devised

in consultation with many stakeholders; that are linked to credit resources that support small enterprise start-ups and economic sustainability of small-scale farming through increased practical knowledge reinforced by experience and example. An increase in the educational attainment of one individual in a household may not only affect that individual's productivity and earnings but consequently on those of others with whom he interacts.

The results also suggest that landlessness in rural areas is associated with poverty. Land remains an important component of rural households' livelihood strategies for those who have it. Secure land ownership in addition to inducing investment is likely to increase the supply of credit from the formal credit system to undertake such investment. The reason is that, because of its mobility and virtual indestructibility, land with secure, clearly defined, and easily transferable ownership rights is ideal collateral. The provision of collateral – facilitated by possession of formal land title – is generally a necessary condition for participation in formal credit markets for medium and long-term credit. Existence of well-documented and transferable property rights and of institutional arrangements to facilitate the low-cost transfer of and are likely to make an important contribution to the development of financial markets.

However, while use of titled land as collateral can, under the condition that foreclosure is socially feasible, reduce a bank's default risk and thereby enhance credit supply, it will have little impact on the transaction costs associated with administering credit to small producers in rural areas. In environments where these costs are high, the improved credit-worthiness brought about by possession of land title may therefore not be enough to facilitate access to formal credit by small farmers. Unless complementary measures to reduce transaction costs and ensure access

to credit by this group are undertaken alongside with individualized property rights through titling, the benefits from titling programs may accrue only to medium and large landowners.

In an environment such as South Africa where credit markets entail distortions, which put smaller and poorer households/farmers at a disadvantage, individual property rights on equity and - in the medium to longer term - on the direction and nature of land transfers between different size classes of producers, could imply greater inequity. Whether, in the presence of heterogeneity in endowments, small producers will benefit from such policies depends critically on the ability to reduce, together with titling, transaction costs and policy induced distortions that limit access to credit markets.

Financial institutions play an important role in serving the poor. They do this by adjusting their traditional mode of operation to curtail the high costs and risk. In managing risk to lenders that poor rural household represent, lenders will have to assess risk appropriately, by gathering information about the risk status of the individuals concerned, this implies additional costs. There is need for government and policy makers to acknowledge that financial institutions will only serve the poor if it is profitable to do so. Emphasizing the important role of credit in a developing country where most of the rural population are poor. Government has to provide incentives for financial institutions in form of subsidies, tax breaks or grants to at least cover the initial costs of the financial institutions to enter into the rural finance market, if only they are to develop as institutions that can provide credit to substantial proportions of the rural population who are presently denied access to credit.

Credit policies still have an important role to play in rural development, and additional rural finance can enhance productivity and household welfare, thus contributing to pro-poor growth. Given the high demand for credit and the limited access of the rural households to both informal and formal credit in the Eastern Cape, the degree of effective credit rationing is very high. The result of the switching regression implies that there would be substantial impact from providing incremental credit to constrained households and from removing the constraints through access to sufficient credit.

In addition, there is a need to develop and promote micro and small-scale enterprises relating to agriculture and particularly livestock sector in order to create more employment opportunities in the Eastern Cape Province. Hence, efforts should be made to raise both farm and non-farm rural real incomes through job creation by the setup of micro and small-scale entrepreneurship, with the increased provision of education and health, better livelihood conditions, and a variety of related social and welfare services for poverty reduction.

An improved welfare outcome is only achieved if credit reaches those households whose investment activities are actually constrained. Since many households lacking access to credit are also credit constrained, expanded access to credit in the Eastern Cape Province must target those households with both investment opportunity and insufficient credit, if it is to generate economic welfare. Thus, expanded and incremental access to credit targeted to credit constrained households or complete relaxation of the constraint would contribute to improved welfare and poverty alleviation. To achieve high economic efficiency in credit allocation, targeting the credit-

constrained households is essential, by so doing; South Africa's financial institutions can alleviate poverty and enhance economic growth.

In short, the key message of this study is that policy-influenced variables such as education, employment creation and land redistribution are crucial factors that can lead to a significant reduction in the present poverty levels in South Africa.

#### **8.4 Recommendation for Future Study**

Although the implications of the findings of this study indicate that credit policies still have an important role to play in rural poverty alleviation; implying that additional rural credit can enhance productivity and household welfare, thus contributing to pro-poor growth. In South Africa, research that is more elaborate is recommended to quantify accurately the contribution of credit to households' poverty alleviation over a period. In fact, one area worth further research is the households' vulnerability to poverty. A households' observed poverty status is an *ex-post* measure of its well-being (or lack thereof). However, in thinking about forward-looking anti-poverty interventions that aim to prevent poverty, what really matters is the vulnerability of households to poverty, *i.e.* the *ex-ante* risk that a household will, if currently non-poor, fall below poverty line, or if currently poor will remain in poverty.

A further line of research not covered here, but necessary for better understanding of rural household credit accessibility *vis-a-vis* poverty alleviation is the consideration of the impact of social capital in household welfare and rural poverty alleviation. Social capital can affect economic welfare through many channels including the functioning of credit markets, the

performance of education institutions, maintenance of irrigation projects and diffusion of technical knowledge, innovation or information (Grootaert *et al.* 1999). Expectedly, the potential role that social capital plays in the facilitation and promotion of well-being and economic development, not only at the household level but also at the level of communities and nations at large is generating increasing interest and discussions among academic and policy makers worldwide.

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## References

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- Abiad, V. and D. H. Graham (1988). Borrower Transaction Costs and Credit Rationing. *Economics and Sociology Occasional Paper* No. 2062, Columbus, Ohio: The Ohio State University.
- Aboody, D. and L. Baruch. (2000). Information Asymmetry, R&D, and Insider Gains. *Journal of Finance*, 55(6): 2747 – 2766.
- Adams, D. W. (1978). Mobilising Household Savings through Rural Financial Markets. *Economic Development and Cultural Change*, 26(3): 547 – 560.
- Adams, D. W and K. Higurashi. (1987). Transaction Costs and Innovation in Rural Financial Markets. Seminar on Farm Credit. Resource Paper 0691. Department of Agricultural Economics and Rural Sociology, Ohio State University.
- Adams, D. W. and M. L. Canavesi. (1992). Rotating Savings and Credit Associations in Bolivia. In: Adams, D. W. and D. A. Fitchett (eds). *Informal Finance in low Income Countries*. Boulder, Colorado, U.S.A.: Westview Press.
- Adelzadeh, A. (2006). Overcoming Unemployment: Strategies for giving the effect to the Right to Work. District Six Museum. Alternate Information Development Center. 12 – 15 June.
- Adesina, A. A. and K. K. Djato. (1996). Farm size, Relative Efficiency and Agrarian Policy in Cote d'Ivoire: Profit Function Analysis of Rice Farms. *Agricultural Economics*, 14: 93 – 102.



- Adeyeye, V. A. (1987). Rural Crisis in Nigeria: Increase in Food Deficits, Decline in Real Income and widespread Rural Poverty. A paper Presented at the second 1987 NISER Seminar Series, Jan 28.
- Adugna, T., and F. Heidhues. (2000). Determinants of Farm Households Access to Informal Credit in Lume District, Central Ethiopia. *Savings and Development*, 24(4): 27 – 46.
- Aguilera, A. N. and C. Gonzalez-Vega. (1993). A Multinomial Logit Analysis of Loan Targeting and Repayment in Agricultural Development Bank of Dominican Republic. *Agricultural Finance Review*, 53: 55 – 64.
- Ajakaiye, D. O. and V. A. Adeyeye. (2002). Concepts, Measurement and Causes of Poverty. *CBN Economic and Financial Review*, 29(4). [www.cenbank.org/out/publication/EFR/RD/2002/EFRvol39-4-5.pdf](http://www.cenbank.org/out/publication/EFR/RD/2002/EFRvol39-4-5.pdf) (accessed on 14/05/2006)
- Akerlof, G. A. (1970). The Market for “Lemons”: Quality Uncertainty and the Market Mechanism. *Quarterly Journal of Economics*, 84(3): 488 – 500.
- Akpan, I. (2005). Risk-Mitigation Measures in South African Microcredit Sector: Implication for Broad Based Access. [www.essa.org.za/download/2005Conference/Akpan.pdf](http://www.essa.org.za/download/2005Conference/Akpan.pdf) (accessed on 13/05/2007)
- Alderman, H. and C. H. Paxson. (1992). Do the Poor insure? A Synthesis of the Literature on Risk and Consumption in Developing Countries. *Policy Research Working Paper 1008*. Washington DC: World Bank.
- Aleem, I. (1990). Imperfect Information, Screening, and the Costs of Informal Lending: A Study of a Rural Credit Market in Pakistan. *The World Bank Economic Review*, 4(3): 329 – 349.

- Alene, A. D. and R. M. Hassan. (2006). The Efficiency of Traditional and Hybrid Maize Production in Eastern Ethiopia: An Extended Efficiency Decomposition Approach. *Journal of African Economies*, 15(1): 91 – 116.
- Ali, M. and J. C. Flinn. (1989). Profit Efficiency Among Basmati Rice Producers in Pakistan Punjab. *American Journal of Agricultural Economics*, 71: 303 – 310.
- Aliber, M. (2003). Chronic Poverty in South Africa: Incidence, Causes and Policies. *World Development*, 31(3): 473-490.
- Amathole District Municipality Profile. (2007). Available online. [www.ndmc.gov.za/profiles](http://www.ndmc.gov.za/profiles). (accessed on 23/07/2007).
- Amemiya, T. (1981). Qualitative Response Model: A Survey. *Journal of Economic Literature*, 19(4): 1483 – 1536.
- Anand, S and C. Harris (1990). Food and Standard of Living: Analysis Based on Sri Lankan Data In Dreze, J and A. Sen (eds). *The Political Economy of Hunger, Vol. 1 Entitlement of Well-being*. Oxford University Press.
- Ardington, E. (1988). Nkandla Revisited: A Longitudinal Study of Strategies Adopted to Alleviate Poverty in Rural Community. Rural Urban Study Unit, *Working Paper*, No. 16. Durban: University of Natal.
- Ardington, C., D. Lam, and J. Levisohn. (2003). Savings, Insurance and Debt Over the Post Apartheid Period. Report for the Office of the President, Union Building, Pretoria, SA.
- Ashe, J. (2000). Microfinance in the United States: The Working Capital Experience – Ten years of Lending and Learning. *Journal of Microfinance*, 2(2): 22 – 60.

- Asian Development Bank (ADB). (2000). Finance for the Poor: Microfinance Development Strategy, Manila: Asian Development Bank.
- Atkinson, A. B. (1989). "Poverty" In: Eatwell, J., M. Millgate and P. Newman (eds.), *Social Economics: The New Palgrave*. Norton, New York.
- Baltensperger, E. (1978). Credit Rationing Issues and Question. *Journal of Money, Credit and Banking*, 10: 170 – 183.
- Banerjee, A. (2001). Contracting Constraints, Credit Markets and Economic Development. MIT, Department of Economics, Working Paper Series 02-07.
- Banking Council Update. (2005). *Winter Edition*. The Banking Council of South Africa. Johannesburg.
- Barham, B., Boucher, S. and M. R. Carter. (1996). Credit Constraints, Credit Unions and Small-Scale Producer in Guatemala. *World Development*, 24(5): 793 – 806.
- Barry, P. J. and W. F. Lee. (1983). Financial Stress in Agriculture: Implication for Agricultural Lenders. *America Journal of Agricultural Economics*, 65: 945 – 952.
- Baumann, T. (2001). Microfinance and Poverty Alleviation in South Africa. Unpublished Report, Bay Research and Consultancy Services, Cape Town.
- Baumann, T. (2002). Providing Financial Services to the Excluded: Where Should We Start? Community Finance Network. [www.cmfnet.org.za](http://www.cmfnet.org.za)
- Baumann, T. (2004). Pro-poor Microfinance in South Africa: Cost-efficiency and Productivity of South African Pro-poor Microfinance Institutions. *Development Southern Africa*, 21(5): 786 – 798.

- Baydas, M. M., Meyer, R. L and N. Aguilera-Alfred. (1994). Credit Rationing in Small Scale Enterprises: Special Micro-enterprise Program in Ecuador. *Journal of Development Studies*, 31(2): 279 – 309.
- Bekker, S., Cross, C. and N. Bromberger. (1992). Rural Poverty in South Africa. Unpublished manuscript.
- Bell, C. (1990). Interaction Between Institutional and Informal Credit Agencies in Rural India. *World Bank Economic Review*, 4(3): 297 – 327.
- Bell, C., Srinivasan, T.N. and C. Udry. (1997). Rationing, Spill over and Interlinking in Credit Markets: The Case of Rural Punjab. *Oxford Economic Papers*, 49: 557 – 585.
- Besley, T. (1994). How do Market Failure Justify Interventions in Rural Credit Markets. *The World Bank Research Observer*, 9(1): 27 – 47.
- Besley, T. (1995). Savings, Credit and Insurance. In: J. Behrman and T. N. Srinivasan (eds). *Handbook of Development Economics*, Vol. III. Amsterdam and New York: Elsevier.
- Besley, T. and S. Coate. (1995). Group Lending, Repayment Incentives and Social Collateral. *Journal of Development Economics*, 46: 1 – 18.
- Bester, H. (1985). Screening Vs Rationing in Credit Markets with Imperfection Information. *America Economic Review*, 75(5): 850 – 855.
- Bester, H. (1987). The Role of Collateral in Credit Markets with Imperfection Information. *European Economic Review*, 72: 850 – 855.
- Bhorat, H., Naidoo, P., and C. Van der Westhuizen. (2006). Shifts in Non-Income Welfare in South Africa: 1993-2004. Development Policy Research Unit Working Paper, No. 06/108. Cape Town: University of Cape Town.

- Bhorat H., and C. Van der Westhuizen. (2008). Economic Growth, Poverty and Inequality in South Africa: The First Decade of Democracy. Unpublished Research Report.
- Bhorat, H., Leibbrandt, M., Maziya, M., Van der Berg, S., and I. Woolard. (eds). (2001). Fighting Poverty: Labour markets and Inequality in South Africa. Cape Town: UCT Press.
- Bigsten, A., Collier, P., Dercon, S., Fafchamps, M., Gauthier, B., Gunning, J. W., Oduro, A., Oostendorp, R., Patillo, C., Söderbom, M., Teal, F. and A. Zeufack. (2003). Credit Constraints in Manufacturing Enterprises in Africa. *Journal of African Economies*, 12(1): 104 – 125.
- Binswanger, H. P and D. A. Sillers. (1983). Risk Aversion and Credit Constraints in Farmer Decision Making. A Reinterpretation. *Journal of Development Studies*, 20(1): 5 – 21.
- Binswanger, H. P. and M. R. Rosenzweig. (1986). Behaviour and Material Determinants of Production Relations in Agriculture. *Journal of Development Studies*, 22(1): 503 – 539.
- Binswanger, H. P., Khandker, S. R. and M. R. Rosenzweig. (1993). How Infrastructure and Financial Institutions Affect Agricultural Output and Investment in India. *Journal of Development Economics*, 41: 337 – 366.
- Binswanger, H. P and S. R. Khandker. (1995). The Impact of Formal Finance on the Rural Economy of India. *Journal of Development Studies*, 32(2): 234 – 262.
- Black, P., Hartzenberg, T. and B. Standish. (1997). Economic Principles and Practice: A South African Perspective. Second Edition, London, Pitman Publishing.
- Blackwood and Lynch. (1994). The Measurement of Inequality and Poverty: A policy Maker's Guide to the Literature. *World Development*, 22(4): 567 – 578.

- Blancard, S., Boussemart, J., Briec, W. and K. Kerstens. (2006). Short- and Long-run Credit Constraints in French Agriculture: A Directional Distance Function Framework using Expenditure-constrained Profit Functions. *American Journal of Agricultural Economics*, 88(2): 351 – 364.
- Blinder, A. S and J. E. Stiglitz. (1983). Money, Credit Constraints and Economic Activity. *American Economic Review*, 73(2): 297 – 302.
- Bradford, L. B., Boucher, S. and M. R. Carter. (1996). Credit Constraints, Credit Unions, and Small Scale Producers in Guatemala. *World Development*, 24(25): 793 – 806.
- Bradshaw, J. (2000). The Measurement of Absolute Poverty. A Paper for the FiSS Conference. Sigtuna, Sweden, 17-20 June 2000.
- Braverman, A. and J. L. Guasch. (1986). Rural Credit Markets and Institutions in Developing Countries: Lessons for Policy Analysis from Practice and Modern Theory. *World Development*, 14(10/11): 1253 – 1267.
- Budlender, D. (1999). Patterns of Poverty in South Africa. *Development Southern Africa*, 16(2): 197 – 219.
- Boucher, S., Guirking, C. and C. Trivelli. (2005). Direct Elicitation of Credit Constraints: Conceptual and Practical Issues with an Empirical Application to Peruvian Agriculture. *American Agricultural Economics Association Annual Meeting, July 24-27*. Providence, Rhode Island.
- Brown, S., Hillegeist, S. and L. Kin. (2004). Conference Calls and Information Asymmetry. *Journal of Accounting and Economics*, 37(3): 343 – 366.
- Browning, M. and A. Lusardi. (1996). Household Saving: Micro Theory and Micro facts. *Journal of Economic Literature*, 4: 1797 – 1855.

- Carroll, C. D. (1991). Buffer Stock Saving and Permanent Income Hypothesis. Washington, D. C.: Board of Governors of the Federal Reserve System.
- Carroll, C. D. and L. H. Summers. (1991). Consumption Growth Parallels Income Growth: Some New Evidence. In: B. D. Bernheim and J. D. Shoven (eds). *National Saving and Economic Performance*, 305 – 343. University of Chicago Press.
- Carter, M. R. (1988). Equilibrium credit rationing of small farm agriculture. *Journal of Developing Economies*, 28: 83 – 103.
- Carter, M. R. (1989). The Impact of Credit on Peasant Productivity and Differentiation in Nicaragua. *Journal of Development Economics*, 31: 13 – 36.
- Carter, M. R. and K.D. Weibe. (1990). Access to Capital and its Impact on Agrarian Structure and Productivity in Kenya. *American Journal of Agricultural Economics*, 72: 1146 – 1150.
- CASE, (Community Agency for Social Enquiry) (1998). “Voting with their Feet”: A Study of Cross-Border Migration into South Africa. Research Report Commissioned by the HSRC. Pretoria.
- Central Statistical Service. (CSS). (1997). Provincial Statistics (Part 2) – Eastern Cape. Pretoria: CSS.
- Chambers, R. (1988). Poverty in India: Concepts, Research and Reality. Discussion Paper 241, Institute of Development Studies, University of Sussex.
- Chaves, P. J. and C. Gonzalez-Vega. (1996). The Design of Successful Rural Financial Intermediaries: Evidence from Indonesia. *World Development*, 24(1): 65 – 78.

- Chirwa, E. W. (1997). An Econometric Analysis of the Determinants of Agricultural credit Repayment in Malawi. *African Review of Money, Finance and Banking*, 1(2): 107 – 121.
- Christen R. P, Rhyne, E., Vogel, R. C. and C. McKean. (1995). Maximising the Outreach of Microenterprise Finance. An Analysis of Successful Microfinance Programs. *Programs and Operation Assessment Report*, No. 10. Washington, D. C: USAID.
- Christen, R. P. and D. Drake. (2001). The New Reality of Microfinance. In: D. Drake and E. Rhyne (eds). *The Commercialisation of Microfinance: Balancing Business and Development*. West Hartford. Connecticut: Kumarian Press.
- CIA. (2008). The CIA World Fact Book. The Central Intelligence Agency. New York, NY: Skyhorse Publishing.
- Coetzee, G. (1997). Institutional Change in Rural Financial Markets in South Africa. Unpublished PhD Thesis. University of Pretoria, Pretoria.
- Coetzee, G. K., Kristen, M. A. and N. T. Christodoulou. (1994). Financing Entrepreneurs in South Africa Rural Areas: A New Approach. Development Bank of Southern Africa.
- Coetzee, J. (2005). Banking the Unbanked in South Africa: The Practical Implications on Branch Banking. A paper presented at the “Development Perspectives – Is Africa Different?” Biennial Conference of the Economic Society of South Africa (ESSA), Durban, South Africa.
- Consultative Group to Assist the Poor. (CGAP). (1995). Policy Document: A Policy Framework for the Consultative Group to Assist the Poorest: A Micro-finance Program. CGAP, Washington, D. C.: The World Bank.
- Coudouel, A., Jesko S. H. and Q. T. Wodon. (2002). Poverty Measurement and Analysis. Chapter 1 in the PRSP Sourcebook. Washington, D. C.: The World Bank.



- Cox, D. and T. Jappelli. (1993). The Effects of Borrowing Constraints on Consumer Liabilities. *Journal of Money, Credit and Banking*, 25: 197 – 213.
- Dallimore, A. (2003). Savings Vs Credit: Comparing Coping Strategies of Poor Households in Rural Kwa-Zulu Natal. Available online at [www.cmfnet.org.za](http://www.cmfnet.org.za)
- Dallimore, A. and M. Mgimeti. (2003). Democratic Banking in the New South Africa: challenging Contemporary Banking Practices at Grass Roots. *Unpublished Report*, Durban: Development Research Africa.
- Daniels, R.C. (2001). Consumer Indebtedness among Urban South African households: A Descriptive Overview. *Working Paper No 01/55*. Development Policy Research Unit, University of Cape Town.
- Deaton, A. (1989). Savings in Developing Countries: Theory and Review. In Fischer S. and D. de Tray (eds), *Proceedings of the World Bank Annual Conference on Development Economics*, 61 – 69. Washington, D. C.: The World Bank.
- Deaton, A. (1991). Saving and Liquidity Constraints. *Econometrica*, 59(1): 1221 – 1248.
- Deaton, A. (1992). Understanding Consumption. Oxford, Oxford University Press.
- Deaton, A. and J. Muellbauer. (1980). Economics and Consumer Behaviour. New York: Cambridge University Press.
- Deaton, A. and A. Case. (1988). Analysis of Household Expenditures. *Living Standards Measurement Study Working Paper 28*. Washington, D.C.: The World Bank.
- DFID (2005). Banking the Underserved. New Opportunities for Commercial Banks; Exploring the Business Case. Unpublished Working Paper. London: Policy Division of the Department for International Development.

- Department of Agriculture. (2000). Abstract of Agricultural Statistics. Pretoria. Government Printers.
- Department of Social Development. (2001). Mothers and Fathers of the Nation: The Forgotten People? Report of the Ministerial Committee on Abuse, Neglect and Ill-treatment of Older Persons. Pretoria. Government Printers.
- Development Bank of Southern Africa. (DBSA). (2005). Development Report. Overcoming Underdevelopment in South Africa's Second Economy. July 2005. Available online [www.dbsa.org](http://www.dbsa.org). Accessed on 23/09/2007.
- Devinney, T. M. (1986). Rationing a Theory of the Banking Firm. Studies in Contemporary Economics, New York: Springer-Verlag.
- Diagne, A. (1999). The Determinants of Household Access to and Participation in Formal and Informal Credit Markets in Malawi. *Food Consumption and Nutrition Division Discussion Paper 67*, Washington D. C.: International Food Policy Research Institute.
- 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.
- Duca, J. V. and H. H. Rosenthal. (1993). Borrowing constraints, household debt, and racial discrimination in loan markets. *Journal of Financial Intermediation* 3: 77 – 103.
- Duca, J. V. and S. Rosenthal. (1994). Borrowing Constraints and Access to Owner-occupied Housing. *Regional Science and Urban Economics*, 24(3): 301 – 322.
- Duggleby, T. J., Aryeetey, E and W. F. Steel. (1992). Formal and Informal Finance for Small Enterprises in Ghana. *Industry and Energy Department Working Paper, Industry Series Paper No. 61*. Washington, D.C.: The World Bank.

- Eastern Cape Province. (1995). Provincial Development Perspective. Unpublished Draft Document. Bisho.
- Ellis, F. (1994). *Agricultural Policies in Developing Countries*. Cambridge University Press.
- Emana, B., Gemtessa, K., Lemessa, D. and G. Ayele. (2005). *Informal Finance in Ethiopia. Occasional Paper No. 13*. Addis Ababa, Association of Ethiopian Microfinance Institutions.
- Esguerra, E. (1993). *Credit Tying as a Collateral Substitute in Informal Loan Contracts*. Unpublished PhD dissertation, Columbus, Ohio: The Ohio State University.
- Eswaran, M. and A. Kotwal (1990). Implications of Credit Constraints for Risk Behaviours in Less Developed Economies. *Oxford Economic Papers*, N-S., 42(2): 473-482
- European Economic Community (EEC). (1985). On Specific Community Action to Combat Poverty (Council Decision of 19 December 1984). *Official Journal of the EEC*, 85(8): 2 – 24.
- Everatt, D. (2003). The Politics of Poverty. In: Everatt, D and Maphai, V. (eds.) 2003. *The real State of the Nation: South Africa after 1990. Development Update Special Edition*, 4: 75 – 100.
- Färe, R., Grosskopf, S. and H. Lee. (1990). A Nonparametric Approach to Expenditure-Constrained Profit Maximization. *American Journal of Agricultural Economics*, 72: 574 – 81.
- FAO. (1996). *Collateral in Rural Loans*. Food and Agricultural Organization of the United Nations. Rome.

- Feder, G. (1985). The Relation between Farm Size and Farm Productivity. The Role of Family Labour, Supervision, and Credit Constraints. *Journal of Development Economics*, 18: 297 – 313.
- Feder, G., Onchan, T. and T. Raparla. (1988). Collateral Guaranties and Rural Credit in Developing Countries: Evidence from Asia. *Agricultural Economics*, 2: 231 – 245.
- Feder, G., Lau, L. J., Lin, J. Y. and X. Luo. (1989). Agricultural Credit and Farm Performance in China. *Journal of Comparative Economics*, 13: 508 – 525.
- Feder, G., Lau, L. J., Lin, J. Y. and X. Luo. (1990). The Relationship between Credit and Productivity in Chinese Agriculture. A Microeconomic Model of Disequilibrium. *American Journal of Agricultural Economics*, 72(5): 1151 – 1157.
- Fin Scope. (2006). Fin Mark Trust Annual Report 2006.
- Fin Scope. (2007). Fin Mark Trust Annual Report 2007.
- Fin Scope. South Africa. (2005). Survey Highlights including FSM Model. Fin Mark Trust. [www.finmark.org.za](http://www.finmark.org.za). (Access on 12/4/2007)
- Fisher, T. and S. Sriram. (2002). Beyond Micro-credit: Putting Development back into Microfinance. New Delhi: Vistaar Publications.
- Floro, S. and P. Yotopoulos. (1991). Informal Credit Markets and the New Institutional Economics: The Case of Philippine Agriculture. Boulder, Westview Press.
- Foltz, J. (2004). Credit Market Access and Profitability in Tunisian Agriculture. *Agricultural Economics*, 30(3): 229 - 240.

- Foster, J. E. (1984). On Economic Poverty: A Survey of Aggregate Measures. *Advances in Econometrics*, 3: 761 – 766.
- Foster, J. E., Greer, J. and E. Thorbecke. (1984). A Class of Decomposable Poverty Measures. *Econometrica*, 52(3): 761 – 766.
- Foster, J. E. and A. F. Shorrocks. (1988). Poverty Orderings. *Econometrica*, 56: 173 – 177.
- Freeman, H. A., Ehui, S. and M. Jabar. (1998). Credit Constraints and Smallholder Dairy Production in Chinese Agriculture. Application of a Switching Regression Model. *American Journal of Agricultural Economics*, 19(1): 33 – 44.
- Fry, M. J. (1988). Money, Interest and Banking in Economic Development. The John Hopkins University Press. Baltimore Maryland, USA.
- Fuglie, K. O. and D. J. Bosch. (1995). Economic and Environmental Implication of Soil Nitrogen Testing: A Switching Regression Analysis. *American Journal of Agricultural Economics*, 77: 891 – 900.
- Garcia, R., Lusardi, A. and S. Ng. (1997). Excess Sensitivity and Asymmetries in Consumption: An Empirical Investigation. *Journal of Money, Credit and Banking*, 29(2): 165 – 176.
- Gersovitz, M. (1988). Savings and Development. In: Chenery H. and T. N. Srinivasan. (eds). *Handbook of Development Economics*, Vol.1. Amsterdam: North Holland.
- Gilligan, D., Harrower, S and A. Quisumbing. (2005). How Accurate are Reports of Credit Constraints? Reconciling Theory with Respondents' Claims in Bukidnon, Philippines. Washington D. C.: International Food Policy Research Institute.
- Glewwe, P. (1988). The Distribution of Welfare in Cote d'Ivoire in 1985. *Living Standard Working Paper 29*. Washington, D.C.: World Bank.

- Glewwe, P. and J. Van der Gang. (1988). Confronting Poverty in Developing Countries. Definitions, Information and Policies. *Living Standard Measurement Study Working Paper* No 48. Washington, D.C.: World Bank.
- Goetz, S. (1992). A Selectivity Model of Household for Marketing Behaviour in Sub-Saharan Africa. *American Journal of Agricultural Economics*, 73(2): 496 – 501.
- Gonzalez-Vega, C. (1976). On the Iron Law of Interest Rate Restrictions. Agricultural Credit Policies in Costa Rica and in Other Less Developed Countries. Unpublished PhD Thesis. Stanford University.
- Gonzalez-Vega, C. (1993). From Policies, to Technologies, to Organizations: The Evolution of the Ohio State University Vision of Rural Financial Markets. *Economics and Sociology Occasional Paper* No. 2062. Columbus, Ohio: The Ohio State University.
- Gonzalez-Vega, C. (1989). Rural Financial Services as a Development Factor. *Economic and Sociology Occasional Paper*, No. 1636. Rural Finance Program, Department of Agricultural Economics, Columbus, Ohio: The Ohio State University.
- Grant, C. (2000). Bankruptcy, Credit Constraints and Insurance: Some Empirics. *CSEF Working Paper*, No 40.
- Greene, W. H. (2003). *Econometric Analysis*. Fifth Edition, Upper Saddle River, NJ: Prentice-Hall.
- Grootaert, C., Gi-Taik, O. and S. Anand. (1999). Social Capital and Development Outcomes in Burkina-Faso. *LLIS Working Paper*, No. 7.
- Gross, D. and N. Souleles. (2002). Do liquidity Constraints and Interest Rates Matter for Consumer Behaviour? Evidence from Credit Card Data. *Quarterly Journal of Economics*, 114(1): 149 – 184.

- Guirkinger, C. and S. Boucher. (2005). Credit Constraints and Productivity in Peruvian Agriculture. *Department of Agricultural and Resource Economics, University of California-Davis*.
- Gulli, H. (1998). Microfinance and Poverty: Questioning Conventional Wisdom. Micro-Enterprise Unit, Sustainable Development Department, Inter-American Development Bank. Washington, D. C.
- Gumude, V. (2008). Poverty and “Second Economy” in South Africa. An Attempt to Clarify Applicable Concepts and Quantify Extent of Relevant Challenges. Development Policy Research Unit, *DPRU Working Paper*, 08/133. June 2008.
- Gurgand, J. G., Pederson, G. and J. Yaron. (1996). Rural Finance Institutions in Sub-Saharan Africa: Their Outreach and Sustainability. *Savings and Development*, 20(2): 133 – 167.
- Gyekye, A. B. and O. A. Akinboade. (2001). Analysis of Poverty in the Northern Province of South Africa: Implication for Empowerment Policy. A paper presented at the 75<sup>th</sup> Anniversary Conference of the Economic Society of South Africa, Glenburg Lodge, Johannesburg.
- Hajivassiliou, V. and Y. Ioannides. (2002). Dynamic Switching Regression Models of the Euler Equation with Imperfect Regime Classification. *LSE mimeo*.
- Hall, R. E. (1978). Stochastic Implications of the Life Cycle-Permanent Income Hypothesis: Theory and Evidence, *Journal of Political Economy*, 86(5): 971 – 987.
- Hall, R. E. and F. S. Mishkin. (1982). The Sensitivity of Consumption Transitory Income: Estimates from Panel Data on Households. *Econometrica*, 50: 461 – 481.
- Hamber, B. (1999). Have No Doubt it is Fear in the Land: An Exploration of the Continuing Cycles of Violence in South Africa. *Zeitschrift fur Politische Psychologie*, 7(1&2).

- Hamber, B. and S. Lewis. (1997). An Overview of the Consequences of Violence and Trauma in South Africa. Occasional Paper, Centre for the Study of Violence and Reconciliation. Johannesburg.
- Hayashi, F. (1985). The Effect of Liquidity Constraints on Consumption: A Cross-Sectional Analysis. *Quarterly Journal of Economics*, 100(1): 183 – 206.
- Hayashi, F. (1987). Test for Liquidity Constraints: A Critical Survey. In: Bewley, T. (ed). *Advances in Econometrics, Fifth World Congress, Vol. 2*. Cambridge University Press.
- Hazarika, G. and J. Alwang. (2003). Access to Credit, Plot Size and Cost Inefficiency among Smallholder Tobacco Cultivators in Malawi. *Agricultural Economics*, 29: 99 – 109.
- Heckman, J. J. (1979). Sample Selection Bias as Specification Error. *Econometrica*, 47(1): 153 – 161.
- Heidhues, F. (1995). Rural Finance Markets - An important Tool to Fight Poverty. *Quarterly Journal of International Agriculture*, 34 (2): 105-108.
- Hentschel, J. and P. Lanjouw. (1996). Constructing an Indicator of Consumption for the Analysis of Poverty: Principles and Illustrations with Reference to Ecuador. *Living Standards Measurement Study Working Paper* No. 124. Washington, D. C.: World Bank.
- Herath, G. (1996). Rural Credit Markets and Imperfect Information: A New Perspective. *Savings and Development*, 20(2): 241 – 254.
- Hoff, K. and J. E. Stiglitz. (1990). Imperfect Information and Rural Credit Markets – Puzzles and Policy Perspectives. *World Bank Economic Review*, 4(3): 235 – 250.



- Holden, S. and S. Bekele. (2004). Land Degradation, Drought and Food Security in a Less Favoured Area in the Ethiopian highlands: A Bio-economic Model with Market Imperfections. *Agricultural Economics*, 30: 31 – 49.
- Hoogeveen, J. and B. Özler (2006). Not Separate, Not Equal: Poverty and Inequality in Post-Apartheid South Africa. In: H. Bhorat and R. Kanbur (eds) *Poverty and Policy in Post-Apartheid South Africa*. HSRC Press: Pretoria.
- Human Sciences Research Council (HSRC). (2004). Fact Sheet - Poverty in South Africa. *Fact Sheet* No: 1. 26 July 2004. HSRC Press: Pretoria.
- Hunte, C. K. (1993). Loan Default and Efficacy of the Screening Mechanism: The Case of Development Bank of Guyana. Unpublished PhD Dissertation, Columbus, Ohio: The Ohio State University.
- Jaffee, D. and T. Russell. (1976). Imperfect Information, Uncertainty, and Credit Rationing. *Quarterly Journal of Economics*, 90 (4): 651-666.
- Jaffee, D. M. and F. Modigliani. (1969). A Theory and Test of Credit Rationing. *American Economic Review*, 59: 850 – 872.
- Jain, S. (1999). Symbiosis Vs Crowding-out The Interaction of Formal and Informal Credit Markets in Developing Countries. *Journal of Development Economics*, 59: 419 – 444.
- Jappelli, T. (1990). Who is Credit Constrained in US Economy? *Quarterly Journal of Economics*, 105(1): 219 – 234.
- Jappelli, T., Pischke, J. and N. S. Souleles. (1998). Testing for Liquidity constraints in Euler Equations with Complementary Data Sources. *Review of Economics and Statistics*, 80(2): 251 – 262.

- Judge, G. G., W. E. Griffiths., R. C. Hill., Lutkepohl, H. and T.C. Lee. (1985). *The Theory and Practice of Econometrics* (Second Edition). New York: John Wiley and Sons.
- Kehoe, T. J. and D. K. Levine. (1993). Debt-Constrained Asset Markets. *Review of Economic Studies*, 60: 865 – 888.
- Khandker, S. R. and Faruquee, R. R. (2003). The Impact of Farm Credit in Pakistan. *Agricultural Economics*, 28: 197 – 213.
- Khandker, S. R. (2005). Microfinance and Poverty: Evidence Using Panel Data from Bangladesh. *World Bank Economic Review*, 19(2): 263 – 286. Washington D.C.: World Bank.
- Kimalu, P., Nafula, N., Manda, D. K., Mwabu, G. and M. S. Kimenyi. (2002). A Situational Analysis of Poverty in Kenya. The Kenya Institute for Public Policy Research and Analysis. *Working Paper Series*, WP/6/2002.
- Kimball, M. S. (1990). Precautionary Savings in the Small and in the Large. *Econometrica*, 58(1): 53 – 73.
- Kirsten, M. (2006). Access to Finance: Building Inclusive Financial Institutions. Policy Initiatives to Expand Financial Outreach in South Africa. Washington, D. C.: The World Bank.
- Kochar, A. (1997). An Empirical Investigation of Rationing Constraints in Rural Credit Markets in India. *Journal of Development Economics*, 53: 339 – 371.
- Kocherlakota, N. (1996). Implication of Efficient Risk Sharing Without Commitment. *Review of Economic Studies*, 63: 595 – 609.

- Kosiura, H. (2001). Proceedings. Microfinance Workshop. Warsaw: Microfinance Center for CEE and NIS.
- Lapar, M. L. A. (1988). An Empirical Analysis of Credit Rationing in the Rural Financial Markets of the Philippines. Unpublished Master's Thesis, Manila: University of the Philippines.
- LAPC (Land and Agriculture Policy Centre) (1996). Land Reform and Agriculture: Progress and Prospects for Meeting Social Needs. Paper Prepared for the National Executive Committee's Subcommittee on Social Need Workshop. Pretoria: LAPC.
- Latifee, H. I. (2003). Poverty Reduction through Microfinance. A paper presented at the International Conference on Poverty Reduction through Microcredit, held at Ceylan Inter-Conference Hotel, Taksim-Istanbul, Turkey, from June 09-10, 2003.
- Lariviere, S. and F. Martin. (1999). Innovations in Rural Finance: The Challenge of Sustainability and Outreach. A paper presented at the Third Annual Seminar on New Development Finance, Organized by Goethe Universitat and Ohio State University, Frankfurt.
- Larr, P. (1994). Two Sides of Collateral: Security and Danger. *The Journal of Commercial Lending*, June 1994, 8 – 17.
- Ledgerwood, J. (1999). Microfinance Handbook: Sustainable Banking with the Poor – An Institutional and Financial Perspective. Washington, D. C.: World Bank.
- Lee, L. F. (1978). Unionism and Wage Rates: A Simultaneous Equation Model with Qualitative and Limited Dependent Variables. *International Economic Review*, 19: 415 – 433.
- Lee, H. and R. G. Chambers. (1986). Expenditure-constraints and Profit Maximization in U.S. Agriculture. *American Journal of Agricultural Economics*, 68: 857 – 865.

- Leibbrandt, M. and I. Woolard. (2006). Towards a Poverty Line for South Africa. A Background Note. South African Labour and Development Research Unit, (SALDRU). University of Cape Town. South Africa.
- Leibbrandt, M., Levisohn, J. and J. McCrary. (2005). Incomes in South Africa Since the Fall of Apartheid. *NBER Working Paper*, No 11384. National Bureau for Economic Research: Cambridge.
- LIMDEP Version 7.0 (1998). Econometric Software. New York: Plainview.
- Levine, R. (1997). Financial Development and Economic Growth: Views and Agenda. *Journal of Economic Literature*, 35: 688 – 726.
- Lipton, M. (1976). Agricultural Finance and Rural Credit in the Poor Countries. *World Development*, 4: 543 – 553.
- Little, P. D. (2001). Assets Cycles and Livelihood – Addressing Food Insecurity in Horn of Africa and Central America. Unpublished Report, Institute for Developing Anthropology, University of Kentucky, Lexington, USA.
- Little, P. D. (2002). Building Assets for Sustainable Recovery and Food Security. Basis Brief, Number 5. Madison, USA.
- Littlefield, E., Murdoch, J and S. Hashemi. (2003). Is Microfinance an Effective Strategy to Reach the Millennium Development Goals? Consultative Group to Assist the Poor (CGAP). Washington, D. C.: The World Bank.
- Llanto, G. M. (1990). Asymmetric Information in Rural Financial Markets and Interlinking of Transactions through the Self-help Groups. *Savings and Development*, 14(2): 137 – 151.

- Llanto, G. M. and C. G. Dingcong. (1994). Bank Behaviour in an Agrarian Reform Regime in Financial Intermediation. Manila: Agricultural Credit Policy Council. *Development Agriculture*, 63 – 114.
- Maddala, G. S. (1983). Limited Dependent and Qualitative Variables in Econometrics. Cambridge: Cambridge University Press.
- Maddala, G. S. (1986). Disequilibrium, Self-Selection, and Switching Models. In: Z. Griliches and M. Intriligator (eds). *Handbook of Econometrics*, Vol. 3. New York: Elsevier Science Publishers BV.
- Magasela, W. (2005). Constructing a National Poverty Line for South Africa: Issues for Consideration. An Unpublished Discussion Paper. National Labour and Economic Development Institute.
- Maldonado, J. (2004). Relationships among Poverty, Financial Services, Human Capital, Risk Coping and Natural Resources: Evidence from El Salvador and Bolivia. Unpublished PhD Thesis, Columbus, Ohio: The Ohio State University.
- Mariger, R. P. (1987). A Life-cycle Consumption Model with Liquidity Constraints: Theory and Empirical Results. *Econometrica*, 55: 533 – 557.
- Mashigo, P. (2006). The Debt Spiral in the Poor Households in South Africa. International Indigenous Journal of Entrepreneurship, Advancement, Strategy and Education. Online Edition, ISSN 1177-0317.
- Mashiya, N. (2004). The Dedicated Banks Bill and the Cooperative Banks Bill. A paper presented at the Tiered Banking Regulation Workshop. 22 November 2004.

- May, J. (ed) (1998). Poverty and Inequality in South Africa: Report Prepared for the Office of the Executive Deputy President and the Inter-Ministerial Committee for Poverty and Inequality. 13 May.
- May, J., Carter M. and D. Posel. (1995). The Composition and Persistence of Poverty in Rural South Africa: An Entitlement Approach to Poverty. *The Land and Agriculture Policy Centre. Policy Paper 14*. Johannesburg, South Africa.
- May, J., Carter, M. R., Haddad, L., and J. Maluccio. (1999). KwaZulu-Natal Income Dynamics Study (KIDS) 1993-1998: A Longitudinal Household Data Set for South African Policy Analysis. School of Development Studies: *CSDS Working Paper No. 21*: University of Natal.
- May, J., Attwood, H., Ewang, P., Lund, F., Norton, A. and W. Wentzal. (1997). Experience and Perceptions of Poverty in South Africa. Synthesis Report for SA-PPA. Durban: Praxis.
- Mayoux, L. (1998). Women's Empowerment and Microfinance Programs: Approaches, Evidence and Ways Forward. Cape Town, South Africa: The Open University.
- McDonald, J. F. and R. A. Moffitt. (1980). The Uses of Tobit Analysis. *Review of Economics and Statistics*, 62: 318 – 321.
- Mckinnon, R. I. (1973). Money and Capital in Economic Development. Washington, D. C.: Brookings Institutions Press.
- Meth, C., and R. Dias. (2004). Increases in poverty in South Africa: 1999–2002. *Development Southern Africa*, 21(1): 59 – 85.
- Meyer, R. L. and G. Nagarajan. (1988). Financial Services for Small and Microenterprises: A Need for Policy Changes and Innovation. *Savings and Development*, 12(4): 363 – 373.

Micro Lending Industry Statistics. (2002). [www.mfrc.co.za](http://www.mfrc.co.za). Accessed on 12/09/2006

Millennium Development Goals: South Africa Country Review. (2006) The Presidency, Government of South Africa [online]. Pretoria: Government Communications and Information Systems. [www.gov.za/review/documents.htm](http://www.gov.za/review/documents.htm). Accessed on 23/03/2008.

Ministry in the Office of the President: Reconstruction and Development. (1994). *White Paper on Reconstruction and Development*. Pretoria: Government Communications and Information Systems

Ministry of Finance, Planning and Economic Development (MFPED). (2001). *Uganda Poverty Status Report*. Kampala, Uganda.

Mohane, H., Coetzee, G. K. and W. Grant. (2000). The Effects of Interest Rates Ceilings on the Micro Lending Markets in South Africa. *Agrekon*, 39(4): 730 – 739.

Montiel, P. J., Agenor, P. R., and N Ul Haque. (1993). *Informal Financial Markets in Developing Countries: A Macroeconomic Analysis*. Oxford: Blackwell Publishers.

Monge-Naranjo, A., and L. Hall. (2002). Access to Credit and the Effect of Credit Constraints on Costa Rican Manufacturing Firms. Inter American Development Bank, *Research Network Working Paper*, #R - 471.

Murdoch, J. (1990). Risk, Production and Savings. Theory and Evidence from Indian Households. Mimeograph. Harvard University.

Murdoch, J. (1995). Income Smoothing and Consumption Smoothing. *Journal of Economic Perspectives*, 9(3): 103 – 114.

Murdoch, J. (2000). The Microfinance Schism. *World Development*, 28 (4): 617-629.

- Mosley, P. and D. Hulme. (1998). Microenterprise Finance: Is there a Conflict between Growth and Poverty Alleviation? *World Development*, 26(5): 783 – 294.
- Moyo, S., Musona. D., Mbhele, W. T. and G. Coetzee. (2002). Use and Impact of Savings Services among Poor People in South Africa. MicroSave- Africa.
- Mukherjee, S and T. Benson. (2003). The Determinants of Poverty in Malawi, 1998. *World Development*, 3(2): 339-358.
- Murray, A. (1999). Banking on the Rich: Development Finance in South Africa. *Southern Africa Report, SAR*, 14(4): 21 – 30.
- Mwabu, G., Masai, W., Gesani, R., Kiriimi, T., Munene, F., Chemengich, M. and J. Mariara. (2000). Poverty in Kenya: Profiles and Determinants. Mimeograph, Nairobi.
- Nagarajan, G. (1992). Informal Credit Markets in Philippine Rice Growing Areas. Unpublished PhD Dissertation, Columbus, Ohio: The Ohio State University.
- Nagarajan, G. and R. L. Meyer. (1995). Collateral for Loans: When Does it Matter? *Economic and Sociology Occasional Paper No. 2207*. Columbus, Ohio: The Ohio State University.
- Nicholson, W. (1987). International Micro Economics and Its Applications. New York. Dryden Press.
- Noble, M., Ratcliffe, A. and G. Wright. (2004). Conceptualising, Defining, and Measuring Poverty in South Africa: An Argument for a Consensual Approach. Department of Social Policy and Social Work, *Working Paper 3*: University of Oxford.
- Nwanna, G. I. (1995). Financial Accessibility and Rural Sector Development. *Savings and Development*, 19(4): 453 – 491.



- Okurut, F. N., Schoombee, A. and S. Van Der Berg. (2005). Credit Demand and Credit Rationing in the Informal Financial Sector in Uganda. *South Africa Journal of Economics*, 73(3): 482 – 497.
- Olomola, A. S. (1999). Determinants of Smallholders' Transaction Cost of Procuring Non-Bank Loans in Nigeria. *Savings and Development, Quarterly Review*, 1(xxiii): 95 – 108.
- Otero, M. and E. Rhyne. (1994). The New World of Microenterprise Finance: Building Healthy Financial Institution for the Poor, Connecticut, USA: Kumarian Press.
- Parikh, A., Ali, F. and M. K. Shah. (1995). Measurement of Economic Efficiency in Pakistani Agriculture. *American Journal of Agricultural Economics*, 77: 675 – 685.
- Paxson, C. (1992). Using Weather Variability to Estimate the Response of Savings to Transitory Income in Thailand. *American Economic Review*, 82(1): 15 – 33.
- Perraudin, W. R. M. and B. Sorensen. (2000). The Demand for Risky Assets: Sample Selection and Household Portfolios. *Journal of Econometrics*, 97: 117 – 144.
- Pitt, M. M. and S. R. Khandker. (1996). Household and Intra-household Impact of Grameen Bank and Similar Targeted Credit Programs in Bangladesh. *World Bank Discussion Paper No. 320*. Washington, D.C.
- Plaut, S. E. (1985). The Theory of Collateral. *Journal of Banking and Finance*, 9: 349 – 475.
- Porteous, D. (2003). The Landscape of Access to Financial Services in South Africa. *Labour Markets and Social Frontiers No. 3*. South Africa Reserve Bank, Pretoria.
- Preuss, H. (2005). Mzansi Accounts Breaks the Million Mark. Mail and Guardian Newspaper, South Africa. May 18<sup>th</sup>, 2005.

- Productivity Commission. (2003). Social Capital: Reviewing the Concept and its Policy Implications, Research Paper, AusInfo, Canberra.
- Provide. (2005). A Profile of Eastern Cape Province: Demographics, Poverty, inequality and Unemployment. *Provide Background Paper*, 1(2).
- Ravallion, M. (1992). Poverty Comparisons: A Guide to Concepts and Methods. *Living Standard Measurement Study Working Paper* 88. Washington, D.C.: World Bank.
- Ravallion, M. (1998). Poverty Lines in Theory and Practice. *Living Standard Measurement Study Working Paper* 133. Washington, D.C.: World Bank.
- Ravallion, M. and B. Bidani. (1994). How Robust is a Poverty Profile? *World Bank Economic Review*, 8(1): 75-102. Oxford University Press.
- Ravallion, M. and M. Lokshin. (2006). On the Consistency of Poverty Lines. In: A. De Janvry and R. Kanbur (eds). *Poverty, Inequality and Development: Essays in Honour of Erik Thorbecke*. New York: Springer.
- Rhyne, E. (1998). The Yin and Yang of Microfinance: Reaching the Poor and Sustainability. Consultative Group to Assist the Poor. Washington, D. C.: The World Bank.
- Roberts, B. (2001). Chronic and Transitory Poverty in Post-Apartheid South Africa: Evidence from KwaZulu-Natal. *Journal of Poverty*, 5(4): 1 – 28.
- Robeyns, I. (2005). Selecting Capabilities for Quality of Life Measurement. *Social Indicators Research*, 74: 191 – 215.
- Robinson, M. (2001). The Microfinance Revolution: Sustainable Finance for the Poor. Washington DC: IBRB/World Bank.

- Robinson, M. (2002). Microfinance as a Sustainable Development Tool. Asia Pacific Economic Cooperation (APEC) Ministerial Meeting on Small and medium Enterprises. Acapulco, Mexico.
- Roefs, M. and I. Liebenberg. (2000). Public Participation in South Africa as We Enter the 21<sup>st</sup> Century. In: Y. Muthien, M. Khosa and B. Mugabane (eds). *Democracy and Governance Review: Mandela's Legacy 1994-1999*. Pretoria, HSRC.
- Rogerson, C. M. (2004). The Impact of the South African Government's SMME Program: A Ten Year Review (1994 - 2003). *Development Southern Africa*, 21(5): 765 - 784.
- Rosenzweig, M. R. (2001). Savings Behaviour in Low-Income Countries. *Oxford Review of Economic Policy*, 17(1): 40 – 45.
- Rutherford, S. (1998). The savings of the Poor: Improving Financial Services in Bangladesh. *Journal of International development*, 10(1):1 – 15.
- SA-PPA. (1998). The Experience and Perception of Poverty: The South African Participatory Poverty Assessment. Durban, Data Research Africa Report.
- Schmidt, R. H. and C. Zeiting. (1994). Critical Issues in Small and Micro-business Finance. Frankfurt: Internationale Projekt Consult GmbH.
- Schoombee, A. (2004). South African Banks and the Unbanked: Progress and Prospects. Stellenbosch, South Africa: Stellenbosch University.
- Schrieder, G. and H. Heidhues. (1995). Reaching the Poor through Financial innovations. *Quarterly Journal of International Agriculture*, 34(2): 132 – 148.
- Schrieder, G. and I. Theesfeld. (2000). Improving the Bankability of Small Farmers in Northern Vietnam. *Savings and Development*, 24(4): 385 – 403.

Sen, A. (1976). Poverty: An Ordinal Approach to Measurement. *Econometrica*, 44: 219 – 231

Sen, A. (1981). Poverty and Famine. Oxford: Clarendon Press.

Sen, A. (1983). Poor, Relatively Speaking. *Oxford Economic Papers*, 35: 153 – 169.

Sen, A. (1992). *Inequality Reexamined*. Cambridge, Mass.: Harvard University Press.

Shackleton, S., Shackleton, C. and B. Cousins. (2000). Revaluing the Communal Lands of Southern Africa: New Understanding of Rural Livelihoods. London. Overseas Development Institute.

Sharma, M. and M. Zeller. (1997). Repayment Performance in Group-Based Credit Programs in Bangladesh: An Empirical Analysis. *World Development*, 25(10): 1731-1742.

Sharma, M. and M. Zeller. (2000). Factors Affecting Repayment Rates in Group-Based Lending: Findings from Bangladesh and Madagascar. *Policy Brief No 10: Multi-Country Research Program on Rural Financial Policies for food Security*. Washington D. C.: International Food Policy Research Institute.

Shinns, L. H. and Lyne, M. (2005). Symptoms of Poverty within a Group of Land Reform Beneficiaries in the Midlands of KwaZulu-Natal: Analysis and Policy Recommendations. *Agrekon*, 44(1): 157 – 169.

Siamwalla, A., C. Pinthong, N. Poaponsakorn, P. Satsanguan, P. Nettayarak, W. Mingnaneenakin and Y. Tubpun (1990). The Thai Rural Credit System: Public Subsidies, Private Information and Segmented Markets. *World Bank Economic Review*, 4(3): 271 – 269.

- Simanowitz, A. and A. Walter. (2002). Ensuring Impact: Reaching the Poorest while Building Financially Self-sufficient Institutions, and Showing Improvement in the Lives of the Poorest Women and their Families. In: Daley-Harris, S., *Pathways Out of Poverty*. Bloomfield, Connecticut: Kumarian Press.
- Snodgrass, D. and J. Sebstad. (2002). Clients in Context: The Impacts of Microfinance in Three Countries. United States Agency for International Development, Global Bureau, Center for Economic Growth, Office of Microenterprise Development. <http://www.mip.org>
- South Africa Data Profile. (2002). *World Development Indicators Database*. Washington, D. C.: World Bank.
- Spio, K. (2006). The Impact and Accessibility of Agricultural Credit: A Case Study of Small-scale Farmers in the Northern Province of South Africa. Unpublished PhD Thesis. University of Pretoria, South Africa.
- Spio, K., Groenewald, J. A. and G. K. Coetzee. (1995). Savings Mobilisation in Rural Areas: Lessons from Experience. *Agrekon*, 34(4): 253 – 259.
- Spio, K. and J. A. Groenewald. (1998). Rural Finance. In: Johan van Rooyen, Jan Groenewald, Simphiwe Ngqangweni and Temas Fenyas (eds). *Agricultural Policy Reform in South Africa*. AIPA/Francolin Publishers.
- StatsSA (Statistics South Africa) (1999). *Rural Survey 1997*. Pretoria: Government Printers.
- StatsSA (Statistics South Africa) (2000). *Measuring Poverty in South Africa*. Pretoria: Stats SA.
- Steyn, N. (2000). A South African Perspective on Pre-school Nutrition. *South African Journal of Clinical Nutrition*, 13(1): S9 – S12.

- Stiglitz, J. E. (1989). Financial Markets and Development. *Oxford Review of Economic Policy*, 5(4): 55 – 68.
- Stiglitz, J. E. and A. Weiss. (1981). Credit Rationing in Markets with Imperfection Information. *American Economic Review*, 71(3): 393 – 410.
- Stiglitz, J. E. and A. Weiss. (1992). Asymmetric Information in Credit Markets and its Implications for Macroeconomics. *Oxford Economic Papers*, 40: 694 - 724.
- Strauss Commission. (1996). Interim Report of the Commission of Enquiry into the Provision of Rural Financial Services. RP38/1996. ISBN 0-621-26972-7.
- Streeten, P. and S. J. Burki. (1978). Basic Needs: Some Issues. *World Development*, 6(3): 411 – 421.
- Tauer, L. W. and H. M. Kaiser. (1988). Negative Milk Supply Response under Constrained Profit Maximizing Behaviour. *Northeastern Journal of Agricultural and Resource Economics*, 17: 111 – 117.
- Taylor Commission. (2002). Transforming the Present – Protecting the Future. Consolidated Report of the Committee of Inquiry into a Comprehensive System of Social Security for South Africa. SARPN/ HSRC, Pretoria.
- The State of the Pakistan's Economy (2005). The Role of Microcredit in Poverty Alleviation. First Quarterly Report for FY05. Pg 105 – 116. [www.sbp.org.pk/reports/quarterly/FY05/first/special\\_2.pdf](http://www.sbp.org.pk/reports/quarterly/FY05/first/special_2.pdf). (accessed on 15/03/2007).
- Timmer, C. P., Walter, P. F. and S. R. Pearson. (1983). Food Policy Analysis. Baltimore Maryland, Johns Hopkins University Press.

- Townsend, P. (1979). *Poverty in United Kingdom: A Survey of Household Resources and Standard of living*. London: Penguin.
- Townsend, P. (2000). Post-1945 Poverty Research and Things to Come. In: Bradshaw, J and Sainsbury, R (eds). *Researching Poverty*. Aldershot: Ashgate.
- Udry, C. (1990). Credit Markets in Northern Nigeria: Credit as Insurance in Rural Economy. *World Bank Economic Review*, 4(3): 251 – 269.
- UNAIDS. (1999). *Children Orphaned by AIDS: Front-Line Responses from Eastern and Southern Africa*. Geneva: UNAIDS.
- United Nations (UN). (1995). *The Copenhagen Declaration and Programme of Action: World Summit for Social Development 6-12 March 1995*, New York, United Nations Department of Publications.
- United Nations Development Program, (UNDP). (2005). *South Africa Human Development Report: The Challenge of Sustainable Development*. UNDP South Africa: Oxford University Press.
- Vaessen, J. (2001). Accessibility of Rural Credit in Northern Nicaragua: The Importance of Networks of Information and Recommendation. *Savings and Development*, XXV (1): 5 – 31.
- Van der Berg, S., Burger, R., Louw, M., and D. Yu. (2005). Trends in Poverty and Inequality since the Political Transition, Stellenbosch Economic Working Papers, 1/2005 [online]. Available at [www.ber.sun.ac.za/downloads/2005/workingpapers/WP-01-2005.pdf](http://www.ber.sun.ac.za/downloads/2005/workingpapers/WP-01-2005.pdf)
- Van der Berg, S., Louw, M., and L. Du Toit. (2007). *Poverty Trends Since the Transition: What We Know*. Bureau for Economic Research and Department of Economics, University of Stellenbosch: Wordworx.

- Vogel, R.C. (1984). Savings Mobilization: The Forgotten Half of Rural Finance. In: D.W. Adams, D. Graham and J.D. Von Pischke (eds). *Undermining Rural Development with Cheap Credit*. Pp. 248 – 265. Boulder: Westview Press.
- Von Pischke, J. D. (1991). Finance at the Frontier. Debt Capacity and the Role of Credit in the Private Economy. Economic Development Institute (EDI) Development Studies, Washington, D.C.: The World Bank.
- Von Pischke, J. D. (1983). Towards an Operational Approach to Savings for Rural Depositors. In: Von Pischke, J. D, Adams D. W, and D. Donald (eds). *Rural Financial Markets in Developing Countries: Their Use and Abuse*. Pp. 414 – 420. Washington, D.C. EDI World Bank
- Von Pischke, J. D. (1994). Structuring Credit to Manage Real Risk. In: Bouman, F. J. A. and O. Hospes (eds). *Financial Landscape Reconstructed: The Fine Art of Mapping Development*. Westview Press.
- White, H. and T. Killick. (2001). Africa Poverty at the Millennium, Causes, Complexities and Challenges. Strategic Partnership with Africa. Washington, D. C.: The World Bank.
- Whiteside, A., and C. Sunter. (2000). AIDS: The Challenge for South Africa. Tafelberg: Human and Rousseau. Cape Town.
- Whiteford, A., and D. Posel. (1995). *A Profile of Poverty: Inequality and Human Development in South Africa*. South Africa: Human Sciences Research Council.
- Williamson, S. (1987). Costly Monitoring, Loan Contracts, and Equilibrium Credit Rationing. *Quarterly Journal of Economics*, 102: 135-145.



- Woolard, I., and M. Leibbrandt. (2001). Measuring Poverty in South Africa. *In*: H. Bhorat, M. Leibbrandt, M. Maziya, S. van der Berg, & I. Woolard. (2001). *Fighting Poverty: Labour Markets and Inequality in South Africa*. Cape Town: University of Cape Town Press.
- Woller, G., Christopher, D. and W. Warner. (2000). Where to Microfinance? [http://spaef.com/IJED\\_PUB/v1n1\\_woller.html](http://spaef.com/IJED_PUB/v1n1_woller.html)
- Woolard, I. (2002). An Overview of Poverty and Inequality in South Africa. Working Paper Prepared for DFID (SA), RSA.
- World Bank. (1989). World Development Report. Washington D.C: World Bank.
- World Bank. (1990). World Development Report, Poverty. Oxford University Press, New York.
- World Bank. (1996). Taking Action for Poverty Alleviation in Sub-Saharan Africa. *Report of an African Task Force*, Washington D.C: World Bank.
- World Bank. (2000). World Development Indicators 2000. Oxford University Press, Oxford United Kingdom.
- Yazdani, S. and K. Gunjai. (1998). Farm Credit and Factors Affecting the Uptake of Loans by Farmers in Iran. *Savings and Development*, 22(3): 147 – 170.
- Yeo, R. (2000). Chronic Poverty and Disability. Paper Commissioned by the Chronic Poverty Research Centre, University of Manchester.
- Zeldes, S. P. (1989). Consumption and Liquidity Constraints: An Empirical Investigation. *Journal of Political Economy*, 97(2): 305 – 346.
- Zeller, M. (1994). Determinants of Credit Rationing: A Study of Informal Lenders and Formal Credit Groups in Madagascar. *World Development*, 22(12): 1895 – 1907.

- Zeller, M. (2000). Product Innovation for the Poor: The Role of Microfinance. *Policy Brief No 3: Rural Financial Policies for Food Security of the Poor*. Washington D. C.: International Food Policy Research Institute.
- Zeller, M., Braun, J. V., Johm, K. and D. Puetz (1994). Sources and Terms of Credit for the Rural Poor in the Gambia. *Africa Review of Money Finance and Banking*, 1: 167 – 186.
- Zeller, M. Sumiter, B. and M. Sharma. (1996). Financial Services for the Rural Poor: Implication for Policy and Research. Final Report to the German Agency for Technical Co-operation (GTZ). Washington D. C.: International Food Policy Research Institute.
- Zeller, M., Schrieder, G., von Braun, J and F. Heidhues. (1997). Rural Finance for Food Security for the Poor: Implications for Research and Policy. *Food Policy Review No. 4*. Washington, D. C.: International Food Policy Research Institute.
- Zeller, M. and M. Sharma. (1998). Rural Finance and Poverty Alleviation. *Food Policy Report*. Washington D. C.: International Food Policy Research Institute.
- Zeller, M. and M. Sharma. (2000). Demand for Financial by the Poor. *Policy Brief No. 1. Rural Financial Policies for Food Security of the Poor*. Washington D. C.: International Food Policy Research Institute.