



**Investigating the contribution of social cash transfers to the food security situation of agricultural-based rural households of Nhlazuka, Richmond Municipality, South Africa**

**By**

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## ABSTRACT

It is estimated that over 690 million people around the world went hungry in 2019 and the COVID-19 pandemic is intensifying the vulnerabilities and inadequacies of global food systems. Food insecurity in South Africa is due to insufficient access to food because of structural poverty and inequality dynamics with a strong racial footprint rather than a shortage of food. Moreover, scarce employment opportunities (especially in rural areas), rising cost of living, limited investment in agricultural development, increase in informal settlements and high dependency ratios especially in low-income households are some of the factors contributing to food insecurity in the country. Thus household-level food security is a major challenge to the South African government and policymakers. Globally, social protection interventions remain essential for addressing the multidimensional aspects of poverty and vulnerability to food insecurity. Social protection plays a considerable role in improving the lives of rural communities that are dependent on agriculture as a source of livelihood. The study examined the contribution of social cash transfers (SCTs) to the livelihood of rural communities of Nhlazuka in Richmond Municipality in the KwaZulu-Natal province of South Africa and assessed the factors influencing access to the SCTs. A sample of 108 respondents was randomly selected and several household-level variables were used to determine factors that influenced access to SCTs. Household food security status was determined through Household Food Insecurity Access Scale (HFIAS). An Endogenous Switching Poisson model was used to analyse the contribution of access to cash transfers to household food security, while also accounting for both endogeneity and sample selection issues. In addition, a logistic regression model was used to examine the influence of various socio-economic factors (independent) on the contribution of SCTs to the livelihoods of rural communities. The results showed that access to cash transfers, gender of household head, access to credit, membership to farm-based organisations (FBO), membership to cooperatives and access to agricultural training was statistically significant ( $P < 0.001$  and  $P < 0.002$  respectively) in determining household food security. Gender of the household head significantly positively correlated to SCTs by the household, indicating that the gender of the household head contributed significantly to access to SCTs ( $P < 0.045$ ). The age of the household head, household size and marital status were statistically significant in determining the household food security. The marginal model showed that the odds of receiving SCTs decreased by 8.9% when the household head was female compared to male. Access to SCTs was an important factor in achieving improved household food security status. Cash transfer programs for the needy play

a significant role in reducing food insecurity and increasing livelihood diversification as households use the cash to purchase agricultural implements which in turn contributes towards their food production. This means SCTs can have a wide range of effects that extend far beyond programme objectives. This finding is critical for the ongoing policy discussions in South Africa, focusing on the long-term relevance and benefits of the SCTs. There is a need for the government to continue improving access to SCTs as they are crucial to the livelihoods of households. Targeted cash transfers towards old age, women and youth are needed particularly because many of these people lack access to food.

***Keywords: Agricultural productivity, food security, social cash transfers, social protection, vulnerability***

## DECLARATION 1

I, ..... Nomonde Leanda Mncube ....., declare that:

- i. The research reported in this dissertation, except where otherwise indicated, is my own original research.
- ii. This dissertation has not been submitted for any degree or examination at any other university.
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NL Mncube

As the candidate's main supervisor, I, Dr Mjabuliseni Ngidi, agree to the submission of this dissertation for examination.

Signed: ... .....Date.....10 January 2022.....

Dr. Mjabuliseni SC Ngidi

## **DECLARATION 2: PUBLICATION**

Author's contribution to publications that form part of the dissertation.

### **Publication 1 – Chapter 4.**

Mncube, N.L., Ngidi, M. S. C and Ojo, T. O. (2021). Addressing food insecurity in the Richmond area of KwaZulu Natal, South Africa: The role of cash transfers (Agriculturae Conspectus Scientificus: Article submitted).

### **Publication 2 – Chapter 5.**

Mncube, N.L., Ngidi, M. S. C and Ojo, T. O. (2021). Factors influencing access to social cash transfers among smallholder framers in Richmond, Inhazuka area (Frontiers in Sustainable Food Systems: Paper prepared).

## **DEDICATION**

This dissertation is dedicated to my dearest mother. Your love, emotional support, continuous encouragement and motivation surely pushed me all the way. May the God Lord bless you abundantly.

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Hebrews 11:1.

*“Now faith is the substance of things hoped for, the evidence of things not seen”*

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

CARE	Central Africa Regional Management
CCTs	Conditional Cash Transfers
CDG	Care Dependency Grant
CG	Caregiver
CSG	Child Support Grant
CSI	Coping Strategies Index
DFID	Department for International Development
DG	Disability Grant
DOH	Department of Health
DRDLR	Department of Rural Development and Land Reform
EUMAGINS	European Margins
FANTA	Food and Nutrition Technical Assistance
FAO	Food and Agriculture Organisation
FBOs	Farm Based Organizations
FCG	Female Caregiver
FCGs	Foster Care Grants
FIML	Full Information Maximum Likelihood
FHH	Female-headed Household
GDP	Gross Domestic Product
GHS	General Household Survey
HFIAP	Household Food Insecurity Access Prevalence
HFIAS	Household Food Insecurity Access Scale
HSCT	Harmonized Social Cash Transfer
HLPE	High Level Panel of Experts
IDP	Integrated Development Plan
IFAD	International Fund for Agricultural Development
ILO	International Labour Organisation
IPA	Innovation for Poverty Action
IPCC	Intergovernmental Panel on Climate change
KZN	KwaZulu-Natal
LEAP	Livelihood Empowerment Against Poverty
LICs	Low Income Countries

MHH	Male-headed Household
NDP	National Development Plan
NGO	Non-Governmental Organization
NPC	National Planning Commission
OAG	Old Age Grant
OLS	Ordinary Least Square
RSA	Republic of South Africa
SACNR	South African Cities Network Report
SANBI	South African National Biodiversity Institute
SASSA	South African Social Security Agency
SASAS	South African Social Attitudes Survey
SCTs	Social Cash Transfers
SDG	Sustainable Development Goals
SPSS	Statistical Package for the Social Sciences
SSA	sub-Saharan Africa
UCTs	Unconditional Cash Transfers
UMDM	uMgungundlovu District Municipality
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN/ISDR	United Nations Inter-Agency Secretariat of the International Strategy for Disaster Reduction
URP	uMngeni Resilience Project
USAID	United States Agency for International Development
WFP	World Food Programme
WVG	War Veteran's Grant

## **CHAPTER 1: INTRODUCTION**

### **1.1 Introduction and background**

Poverty and inequality remain a severe global economic problem, particularly in the developing world. As pointed out in the Sustainable Development Goals (SDGs), ending extreme poverty, tackling inequality and protecting the environment remained a significant priority to address development challenges (FAO 2015).

The introduction of social protection was aimed at addressing multidimensional aspects of eradicating poverty and vulnerability goals in the global economic sphere (Omilola and Kaniki, 2014). It was initiated in response to intense pressures faced by the poor and vulnerable, particularly during periods of financial collapse, global recession, food shortages, and rising food and fuel prices (Garcia and Moore, 2012). The attention had been drawn to the need to mitigate the effects of these crises on the vulnerable groups in the developed and developing worlds (Social Protection Floor Advisory Group, 2011; Garcia and Moore, 2012).

In 2004, the African Union began promoting the development of social policy frameworks among its member countries to expand and improve social protection programmes to respond to their respective contexts. Moreover, in 2009 the International Labour Organisation (ILO) launched an approach to extend social protection systems globally, namely, the Social Protection Floor approach. The Social Protection Floor projected social protection as a system to empower and protect vulnerable groups through guaranteeing: basic income security in the form of various social transfers (in cash or in-kind), such as pensions for the elderly and persons with disabilities, child benefits, income support benefits and/or employment guarantees and services for the unemployed (Social Protection Floor Advisory Group, 2011). This approach has since been adopted by various countries in Africa, Asia, Central Europe and Latin America (Garcia and Moore, 2012) and adapted relevantly to their specific contexts (SPFAG, 2011; Hanlon, Barrientos and Hulme, 2010 cited by Garcia and Moore, 2012).

According to the United Nations Task Team (2012), social protection mechanisms provided an effective means of tackling multiple dimensions of poverty, inequality and vulnerability. Such mechanisms encompass health care, education, decent work, food security and income security. Although social protection remained a powerful instrument to help fight against poverty, 80% of the global population did not have access to comprehensive social protection programmes (United

Nations Task Team, 2012). The Food and Agriculture Organisation of the United Nations (FAO, 2015), noted that throughout the developing world, about 2.1 billion people or one-third of the global population received some form of social protection.

For example, in Sub-Saharan Africa, social cash transfers (SCTs) were the predominant form of social protection (Samson, 2009). In South Africa, more than 17 million citizens received SCTs in the form of social grants, and this accounted for 30% of the total population classified as vulnerable (SASSA, 2018). Research showed that SCTs have become the main source of income security for livelihood sustenance in most poor households in South Africa (Winder Rossi *et al.*, 2017). Increased access to social protection potentially enhanced poor households' ability to cope with shocks and endurance to natural and human-induced crises (Winder Rossi *et al.*, 2017).

Food security remained a high priority in poverty reduction policies and development agendas of developing countries (Dorward, *et al.*, 2006). Agriculture was highlighted as a primary activity predominantly practised for livelihood sustenance by the rural poor (Garcia and Moore, 2012; Tirivayi, Knowles and Davis, 2013). As noted by the FAO (2015), poor people's reliance on agriculture and the high share of their expenditure on food portrayed agriculture as an important sector to poverty and hunger alleviation interventions (see also Dorward *et. al.*, 2006; Chitja, 2012). This justifies the need to assess the contribution of SCTs to food security and livelihoods of resource constraint rural farming households.

It is difficult for the poor population to make huge investments in agriculture due to several factors that are endogenous and exogenous to their production systems. Such factors included inequitable access to productive resources, limited access to finance, poor access to well-functioning markets, poor infrastructure and the risk associated with the degradation of natural resources, climate change and volatility of prices. The prevalence of such complex challenges left the poor populations more prone to vulnerability (DFID, 2005) and barricaded in investing in household agricultural activities. This often results in agriculture-based livelihoods being exposed to serious food insecurity risks.

Rural livelihoods and food (in) security are often synonymous particularly in South Africa, which has the highest poverty and inequality rates in the world (FAO, 2010 cited in Chitja, 2012). Food insecurity on its own is caused by complex factors that further exacerbate poverty and vulnerability. Chitja (2012) emphasised the role that agriculture played in cushioning the rural poor from being vulnerable to poverty (World Bank, 2002). The FAO (2015) viewed SCTs as an effective method to reduce poverty and hunger as it allowed households to diversify their food



consumption. This often occurred through increased own production, leading to food security in rural households. Hence, SCTs have the potential to contribute to increased agricultural production and household food security.

## **1.2 Problem statement**

Social protection interventions were developed as a strategy to address multiple dimensions of poverty that were realised at a global scale, countries being encouraged to implement such programmes to empower their poor citizens (Omilola and Kenaki, 2006; Samson, 2009; UN, 2012). In South Africa, SCTs were implemented by targeting the vulnerable as a form of income security and to uplift the target communities from poverty and vulnerability (Madonsela, 2010).

Various studies have demonstrated that SCTs have a positive impact on the livelihoods of the beneficiaries (Fisher *et al.*, 2017; Hajdu *et al.*, 2020). However, beneficiary households are still categorised amongst the poor, vulnerable and food insecure populations, particularly in rural South Africa. Arguments by Smith and Abrahams (2015) note that income from SCTs may not be adequate to meet food security needs owing to the high cost of living coupled with a volatile rand (South African currency) value. Consequently, beneficiary households need to employ supplementary livelihood strategies to manage food insecurity and the inadequacy of SCTs (Mtyingizane, 2018).

According to DFID (2005) and FAO (2015), agriculture is a primary livelihood activity practiced by the rural poor for sustenance and remains a strategic tool in developing interventions addressing issues of poverty and food insecurity. FAO (2015) further asserted that SCTs enable households to increase and diversify their food consumption, often through increased own production. Contradicting results reported by Kajiita and Kang (2016) indicated that households receiving SCTs engage less in production activities as the availability of cash enables households to purchase food rather than grow their own. Thus, this study aims to uncover the role of SCTs on food security among farming households located in Nhlazuka, Richmond Municipality in the KwaZulu-Natal province in South Africa.

## **1.3 Importance of the study**

Poverty, vulnerability and food insecurity are a globally recognised threat to humanity and a challenge in the economic sphere, particularly in developing countries like South Africa. Accordingly, social protection interventions were implemented in an attempt to combat poverty

and vulnerability amongst the poor populations, particularly SCTs. The programme is reported to have succeeded in improving the lives of millions of South Africans (Patel *et al.*, 2013; SASSA, 2018). Various studies revealed that, in South Africa, SCTs have had a positive impact on the livelihoods of the recipients since initiation (Todd *et al.*, 2010; Daidone *et al.*, 2019). This study, aims to assess the effectiveness of SCTs in addressing food insecurity, focusing on the rural South African context and particularly KwaZulu-Natal (KZN) province.

Rural livelihoods, being dominantly agriculture-based, are pivotal in the fight against poverty, food insecurity and malnutrition. Agriculture, particularly smallholder agriculture, is known to provide a safety net for food provision among poor households (Chitja, 2012). There is limited or no financial resources for the poor to, on their own, invest in and increase their agricultural production, through either improving their technologies, investing in horizontal expansion or diversifying their agricultural enterprises (Ndlela, 2015). SCTs, as an instrument of social protection, are said to be effective in reducing poverty and hunger as they enable households to increase and diversify their food consumption often through their production, also sell the surplus, if any, to the local people (Omilola and Kaniki, 2014).

The study rationale is that findings will reveal the effects of SCTs on addressing a fundamental development challenge of food insecurity. In South Africa, socio-economic intervention using SCT is an attempt by the government to improve the livelihoods and food security of vulnerable populations. The study will be thus important in informing relevant government spheres and stakeholders on the effectiveness of social cash transfer programmes and identifying gaps where intended positive outcomes are not realised. Furthermore, the study will potentially uncover aspects for policy recommendations on how social cash transfer programmes can be strengthened to have multi-dimensional livelihood improvement. The study also contributes to knowledge on social protection and household food security.

#### **1.4 Objectives**

The main objective of the study was to investigate the contribution of SCTs to the food security of agricultural households in the area of Nhlabazuka at Richmond Municipality. The specific objectives of the study were:

- To investigate the role of SCTs in addressing food insecurity
- To assess the factors that influence access to SCTs among smallholder farmers.

## **1.5 Sub-problems**

- What is the role of SCTs in addressing household food insecurity?
- What are the factors that influence access to SCTs among rural smallholder farmers?

## **1.6 Research delimitations**

The study is confined to the South African context. There are various social protection interventions implemented in South Africa. However, the study focuses on SCTs (social grants). Participating in the attainment of raw data included beneficiaries and non-beneficiaries of SCTs who are also households falling within the scope of agriculture-based households in the study area.

This study focuses on rural households that are considered agriculture-based households. The SCTs contributed significantly to alleviating poverty and improving the livelihoods of the vulnerable (Winder Rossi *et al.*, 2017). However, little has been assessed with regard to the improvement of the beneficiaries' agricultural production, thus food security.

## **1.7 Study assumptions**

This study assumes that SCTs have a positive influence on improving the food security status of impoverished households. This may be through increased purchasing power. The study further assumes that SCTs alleviate food insecurity by improving the affordability of investing in agricultural production and thereby increasing food availability and accessibility to the household.

## **1.8 Definition of terms**

### **1.8.1 Social protection**

There were many definitions of social protection most of which aimed to reduce social and economic risk and vulnerability and to alleviate the extreme poverty of deprived populations. In this study, social protection was defined as all public and private initiatives that provide income or consumption transfers to the poor, protect the vulnerable against livelihoods risks and enhance the social status and rights of the marginalised; with the overall objective of reducing the economic and social vulnerability of poor, vulnerable and marginalised groups (Devereux and Sabates-Wheeler, 2004 cited by Browne, 2015).

### **1.8.2 Social cash transfers**

The SCTs can be defined as a regular and predictable non-contributory payment of money provided by the government or non-governmental organisations to individuals or households to decrease chronic or sock-induced poverty, addressing social risk and reducing economic vulnerability (Samson, 2009). In South Africa, SCTs were commonly known as social grants. There were eight types of SCTs currently provided targeting the vulnerable population in South Africa namely; old age grant (OAG), war veterans' grant (WVG), disability grant (DG), care dependency grant (CDG), foster care grants (FCGs), child support grant (CSG), grant-in-aid (GIA) and social relief of distress (SRD) (DSD, 2015). The study focused on the social cash transfers programme implemented in South Africa.

### **1.8.3 Agriculture-based households**

A household was considered to be an agricultural household when at least one member of the household was operating a farm holding or when the household head, the main income earner was economically active in agriculture (UN, 2007). The target sample of the study were households that were within the scope of agriculture-based and/or farming households.

### **1.8.4 Food security**

The universally accepted and commonly used definition of food security was presented by the World Food Summit in 1996 (cited by Shaw, 2007) where food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (World Food Summit, 1996 cited by Shaw, 2007). This definition had shied away from looking at food security in terms of the ability of a country to produce enough food for its population due to the occurrences of uneven distribution. However, the definition looked at food security from an economic, social and physical perspective of obtaining food at the household level, also considering the ability of the obtained food to provide essential nutritional requirements that promoted an active lifestyle at an individual level.

## **1.9 Structure of the dissertation**

This study is organized into six chapters. Chapters 4 and 5 are presented as stand-alone journal articles, which are in preparation for submission to peer-reviewed journals for publication. This chapter has introduced and presented the background of the study. It further outlines the

background of the study, problem statement, the importance of the study, objectives of the study, the research delimitations and provides definitions of terms that are referred to throughout the study.

Chapter 2 comprises a review of the relevant literature, encompassing a reflection of the SCTs programme in South Africa, the implementation of social grants. The chapter reviews an overview of agricultural production in South Africa, with emphasis on the smallholder sector. It further defines the concept of food security and its status quo in the South African context. It also reviews previous studies' perspectives on the contribution of SCTs on household food security and agricultural production of smallholder farmers.

Chapter 3 presents the methodology employed to achieve the objectives of the study as well as provides a description of the study site and its socio-economic characteristics. Chapter 4 presents the results and an in-depth analysis of research objective 1, investigating the role of SCTs in addressing food insecurity. Chapter 5 presents the results and an in-depth analysis of research objective 2, assessing the factors that influence access to SCTs among smallholder farmers.

Chapter 6 presents a summary of the study and provides conclusions that respond to the objectives of the study. The chapter presents recommendations for improvement of the social cash transfer programmes as well as on the improvement of other areas for future research. It further presents the limitations of the study.

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## CHAPTER 2: LITERATURE REVIEW

### 2.1 Introduction

Social protection was developed as a system to empower and protect vulnerable groups by ensuring basic social security (SPAG, 2011). This is ensured through income or consumption transfers that help protect them against livelihood risks and loss of income (Browne, 2015). The renaissance of social protection is attributed to the realisation that it addresses multidimensional aspects of eradicating poverty and vulnerability goals in the global economic sphere (Omilola and Kaniki, 2014). In Africa, social protection was recognised as having significant potential to address challenges of poverty, inequality, vulnerability and exclusion, which are prevalent in the region. Social protection offers guaranteed basic social security through income or consumption transfers to protect the vulnerable groups against livelihood risks and loss of income (Social Protection Floor Advisory Group, 2011).

Harvey *et al.* (2007), cited by Browne (2015) reported on debates about what interventions are considered as social protection as they overlapped with a number of livelihoods, human capital and food security interventions. Samson (2009) viewed social protection as encompassing a portfolio of instruments, some of which already incorporated aspects of livelihoods, human capital and food security. There are three common types of social protection namely; social assistance, social insurance and labour market interventions (Browne, 2015). Social assistance is normally a state-financed initiative of cash or in-kind transfers targeting the vulnerable population (Sinyolo *et al.*, 2016).

The sustainability of this particular system is dependent on the respective government incorporating these initiatives into its national fiscal budget (Samson, 2009; FAO, 2015). Social assistance can be conditional or unconditional (Browne, 2013). Social insurance is whereby beneficiaries contribute towards insuring themselves or the insurance may be financed by the employer or the state. Several institutions facilitate different types of social insurance ranging from health, income, agricultural and other contingency insurances (FAO, 2015). These depend on the beneficiaries' capacity to contribute to such kind of insurance. Labour market interventions whereby the employed population is guaranteed minimum standards under the employment environment (FAO, 2015) is evident through workers' compensation systems.

The development and promotion of social policy frameworks were pioneered by the African Union in an attempt to expand and empower social protection programmes in their countries. The policies

introduced social protection as a system to empower and protect vulnerable groups through guaranteeing basic income security in the form of various social transfers (in cash or in-kind), such as pensions for the elderly and persons with disabilities, child benefits, income support benefits and/or employment guarantees and services for the unemployed” (Social Protection Floor Advisory Group, 2011) The notion later expanded to other parts of the world, adaptive to their respective contexts, in other African countries, Central Europe and Latin America (Hanlon, Barrientos and Hulme, 2010 cited in Garcia and Moore, 2012).

According to the United Nations (2012), social protection interventions potentially tackled multiple dimensions of poverty and vulnerability which included health care, education, decent work, food security and income security. This remained a powerful instrument to help fight against poverty, although 80% of the global population did not have access to comprehensive social protection programmes. In contrast, the Food and Agriculture Organisation of the United Nations (FAO, 2015) noted that throughout the developing world, about 2.1 billion people or one-third of the global population received some form of social protection. For example, in Sub-Saharan Africa, SCTs were the predominant form of social protection (Samson, 2009). In the case of South Africa, more than 17 million citizens received these transfers in the form of social grants (SASSA, 2018). This accounted for more than 30% of the total population who were also identified as the vulnerable group. Research showed that SCTs had become the main source of income security for livelihood sustenance in most poor households in South Africa.

As previously noted, SCTs can either be conditional or unconditional. Conditional cash transfers (CCTs) meant that beneficiaries are expected to fulfil prescribed behavioural responsibilities which are a requirement to secure regular cash benefits (Browne, 2013). Unconditional cash transfers (UCTs) on the other hand do not require any responsibilities or behavioural characteristics from the beneficiaries. Commonly prescribed responsibilities of CCTs included regular school attendance by children, regular medical check-ups for the beneficiary or a household adult attend educational seminars encompassing basic nutrition, health and other healthy lifestyle subjects (Garcia and Moore, 2012).

Browne (2013) added that incorporating conditions in cash transfers incentivised investment in mid to long-term human capital accumulation, increased intra-household bargaining power of weaker individuals, and increased human capital across society. He further noted that there was significant evidence showing positive impacts on human capital development outcomes through improved resilience as rippling effects by the CCTs. Counter-arguments proved inconclusive

differences in the impact between CCTs and UCTs. Comparisons among previous studies showed that the effects of CCTs were as much as of UCTs (Browne, 2013; FAO, 2015).

As much as UCTs did not require co-responsibilities by the beneficiaries, they still utilized the cash transfers rationally; investing in health, improved food consumption and diversity, and education, just as expected outcomes for CCTs (Browne, 2015). CCTs were commonly used in Latin America and UCTs were more common in Sub-Saharan Africa (Garcia and Moore, 2012). In most instances, the impacts of SCTs prove to be beneficial as they provide alternative access to financial resources that can be utilized to meet other household needs.

## **2.2 A Reflection on the social cash transfer programme in South Africa**

### **2.2.1 Typologies of the social grants system in South Africa**

The SCTs, referred to as social grants in South Africa, were initiated in the early 1900s, however, characterised by a distinct racial differentiation, favouring the white minority (Woolard and Leibbrandt, 2010). Later in the 1980's the apartheid government began to gradually extend social cash benefits to the other racial groups, including the Coloured and Indian races, while the African population remained excluded. In the latter years, this differentiation was addressed through the development of new policies that aim to eliminate the element of racial discrimination and thus include all members of society. In 1992, the Social Assistant Act was introduced as a policy for inclusive social security for all eligible citizens of South Africa (Sinyolo *et al.*, 2016).

Post-apartheid, the social assistance system had extended significantly, with common programmes being the Child Support Grant (CSG), the Disability Grant (DG) and the Old Age Grant (OAG) (Woolard and Leibbrandt, 2010). The current social grants system represents an inherent stage of adaptation and policy amendments of the apartheid era programmes succeeded by the democratic government which has developed into a comprehensive social assistance system (Woolard, 2006). The system is regarded as exceptional even by standards of middle-income countries (Sinyolo *et al.*, 2016). However, Gutura and Tanga (2017) argued that social grants are not designed to completely alleviate vulnerability and poverty in poor households, but create dependency.

The objectives of the South African social assistance systems are outlined in the White Paper on Social Welfare. The social assistance system's objectives are to prevent poverty, alleviate poverty, social compensation and income distribution (Plagerson and Ulriksen, 2015; Smith and Abrahams, 2015). The system targeted vulnerable and disadvantaged groups comprised mainly of people

living in poverty, elderly persons, people with disabilities and vulnerable children and families (Khoza, 2007; Woolard and Leibbrandt, 2010). These groups were not expected to fully partake in the labour market and were subjected to low income (Sinyolo *et al.*, 2016).

The welfare system also envisioned a system that facilitates the development of human capacity and self-reliance within a caring and enabling socio-economic environment which intends to increase investment in health, education, nutrition and to increase human growth and development (Sinyolo *et al.*, 2016). According to Sinyolo (2016), social grants are perceived as a viable instrument for active redistribution which addresses poverty and redresses persistent inequalities exacerbated by the previously unjust governance systems. This remained a key agenda in the social welfare policies and programmes in South Africa.

### **2.2.2 Implementation, types and coverage of social grants**

Post-independence, the South African government introduced the South African Social Security Agency Act, an integral legislative framework responsible for the administration and distribution of social grant assistance (Kgaphole, 2014). This was the establishment of an agency to implement and oversee the overall business of the social grant system. Housed under this act, is the South African Social Security Agency, commonly known as SASSA. SASSA offices are widespread ranging from the Head Office, Regional Offices located provincially, District Offices located within district municipal boundaries, Local and Services Offices located within local municipal boundaries. There are more than 9 900 pay points across the country established for the grant recipients to efficiently access the services within a five-kilometre radius from their residential places (Sinyolo *et al.*, 2016; Statistics South Africa, 2018). The SASSA office is monitored and evaluated by the National Department of Social Development.

Social grants are targeted at categories of people who are vulnerable to poverty and in need of state support including elderly people, people with disabilities and children (Thandika, 2016). The South African grant system significantly penetrates rural areas, with the highest beneficiary numbers in three of the poorest provinces of the country namely the Eastern Cape, KwaZulu-Natal and Limpopo (UNDP, 2014). The eligibility criteria are different for each type of social grant. The current system uses a means test as a tool to determine the eligibility of beneficiaries (Jha and Acharya, 2016). The criteria used include an assessment of the beneficiary's value of their assets and income falling below a certain threshold. The threshold varies for all of the types of grants and some are dependent on the marital status of beneficiaries (Sinyolo *et al.*, 2016). Social grants

are payable to each eligible individual and have proven to be beneficial in helping households to cope with hunger and poverty (FAO, 2015; Xaba, 2016). This means some households with more than one beneficiary may receive several grants, while other households receive only one. This variation may be large across households due to the differences in household head numbers across the population (Samson *et al.*, 2008 cited in Sinyolo *et al.*, 2016).

Table 1 below illustrates the distribution of social grants by region and type of social grant. KwaZulu-Natal presented the largest proportion of social grants recipients, at 22.20%, followed by the Eastern Cape at 15.78%. The CSG was the most common form of social cash transfer at 69.91%, followed by the OAG (Statistics South Africa, 2018). The social cash transfer programme in South Africa comprises of seven types of grants namely the Old Age Grant (OAG), Child Support Grant (CSG), Disability Grant (DG), Foster Care Grants (FCGs), War Veterans Grant (WVG), Care Dependency Grant (CDG) and the Grant-in-Aid Grant (GIA) (Statistics South Africa, 2018).

The OAG provides support to South African residents that are 60 years and above; the CSG supports unemployed caregivers with children under the age of 18; and the FCG provides support to households taking care of foster children but should not be more than six foster care children per household (SASSA, 2015). The DG supports adults with disabilities that are between the ages 15 – 59 and the WVG provides for people who are 60 years and above or disabled South Africans that had fought in the Second World War or the Korean War (SASSA, 2017). The CDG aids families with children under the age of 18 with severe disabilities, and the GIA is for people receiving OAG, DG or WVG who require full-time care by another person owing to physical or mental disabilities (SASSA, 2017). All the aforementioned social grant interventions mitigate livelihood risks and enable households to become resilient to shocks, stresses and food insecurity (Crush and Caesar, 2014; Devereux, 2015).

**Table 1:** Number of social grants by type and province as at 28 February 2018

<i>Region</i>	<i>Grant type</i>							<i>Total</i>	<i>%</i>
	<i>OAG</i>	<i>WVG</i>	<i>DG</i>	<i>GIA</i>	<i>CDG</i>	<i>FCGs</i>	<i>CSG</i>		
<i>EC</i>	581 489	14	182 393	25 214	22783	90 704	1 908 650	2 811 247	15,78

<b>FS</b>	206 444	1	74 047	6 561	8 439	28 813	693 003	1 017 308	5,71
<b>GP</b>	620 417	33	116 710	7 286	19 834	45 848	1 867 017	2 677 145	15,03
<b>KZN</b>	705 290	9	228 743	65 674	39 715	75 177	2 838 909	3 953 517	22,20
<b>LP</b>	474 289	3	96 729	49 971	16 012	44 314	1 846 762	2 528 080	14,19
<b>MP</b>	257 160	1	78 308	20 010	11 580	27 768	1 105 791	1 500 618	8,42
<b>NW</b>	264 790		67 149	12 446	9 916	29 553	856 779	1 240 633	6,97
<b>NC</b>	89 126	3	48 572	13 006	5 959	11 970	314 069	482 705	2,71
<b>WC</b>	354 312	28	155 604	21 821	15 763	31 872	1 021 092	1 600 492	8,99
<b>Total</b>	3 553 317	92	1 048 255	221 989	150 001	386 019	12 452 072	17 811 745	100
<b>%</b>	19,95%	0,00%	5,89%	1,25%	0,84%	2,17%	69,91%	100,00 %	

**Source: Statistics South Africa (2018).**

Table 2 shows the number of beneficiaries per grant type, the percentage share of total beneficiaries and the amount received by the individual beneficiary. In South Africa, more than 70 per cent of the total population benefits from the CSG, with the least share of beneficiaries being War Veterans, and the high share of the CSG could justify the many economic challenges experienced by the country (Statistics South Africa, 2018). The CSG is eligible for children whose parents (or the person taking care of the child) earn an income of less than ZAR13 200 per annum, which is translated to ZAR1 100 per month (Statistics South Africa, 2018). Moreover, this grant type provides support to South Africans that are 18 years and/or younger.

**Table 2:** Grant type, amount per grant type and the number of beneficiaries per grant type as at 28 February 2018

<i>Grant type</i>	<b>Amount of grant per month (ZAR)</b>	<b>Number of beneficiaries</b>	<b>Share of total beneficiaries (%)</b>
<i>Old Age Grant</i>	1 690 – 1 710.00	3 408 994	19.53
<i>Child Support Grant</i>	380.00	12 247 565	70.17
<i>Disability Grant</i>	1 690.00	1 059 047	6.07
<i>Foster Care Grant</i>	890.00	401 644	2.30
<i>War Veterans Grant</i>	1 620.00	138	0.0008
<i>Care Dependency Grant</i>	1 600.00	147 064	0.84
<i>Grant-in-Aid</i>	380.00	188 999	1.08
<b>Total</b>		<b>17 453 451</b>	<b>100</b>

Source: SASSA (2018)

This means that recipients of the CSG are either unemployed or receive low-income earnings. The OAG has the second-largest share of beneficiaries at 19.53 per cent and is the most payable amount at ZAR1690 for persons between 60 and 75 and ZAR 1 710 for persons older than 75 years (Statistics South Africa, 2018). The child support grant and the grant-in-aid are the least payable amounts at ZAR380 per person. Beneficiaries of the war veteran's grant make up the least percentage of the total number of beneficiaries at 138 beneficiaries earning ZAR1 620 per month (Statistics South Africa, 2018). The amount payable to the social cash transfers increases on a year to year basis.

## **2.3 Social cash transfers and rural households**

### **2.3.1 The contribution of social cash transfers to livelihood outcomes**

The SCTs are emerging in many developing countries as leading social protection initiatives aimed at tackling poverty and vulnerability (Samson, 2009; FAO, 2014). These pose as the primary elements to be addressed in development agendas. Devereux and Waidler (2017) argued that social protection interventions are often overenthusiastic and idealistic in achieving increased productivity, household food security and reduced vulnerability. Economic vulnerability is indicated by elements such as income, human capital development in terms of education and health, and resorting to livelihood risk coping strategies (Samson, 2009). Cross-country studies consistently demonstrated positive impacts of SCTs for increased consumption and reducing the poverty gap (Browne, 2015; UNDP, 2014). Example by Browne (2015) stated that SCTs had reduced the poverty gap by 20 per cent in Mexico and by 47 per cent in South Africa. According to Barca *et al.* (2015), SCTs served as a primary source of income for Mexicans. This reliance was dependent on the regularity and predictability of the SCTs.

According to the Overseas Development Institute (2015), SCTs provide more benefits than food aid. More regular and predictable (amount of money) income is more rewarding as recipients can budget and allocate the financial resource for meeting household needs (Barca *et al.*, 2015). Irregular and unpredictable cash transfers bring uncertainty, making it difficult for beneficiaries to depend on it as their primary source of income (Samson, 2009). Some receiving households have the benefit of the SCTs as an additional source of income thus providing them with a higher risk management capacity against any sudden loss of income or productive assets (FAO, 2014; Jelle *et al.*, 2017). Such beneficiary households are also better able to utilize their income in investing in more productive income-generating livelihood strategies (Barca *et al.*, 2015).

Studies on SCTs have demonstrated a positive impact on human capital development through increased investment in education and the use of health facilities (Barca *et al.*, 2015). Receiving households can afford their children's education, purchase school uniform and other basic required school items. In addition, improved utilization of health services has been demonstrated thus potentially an improved health status of the beneficiaries of the SCTs (Barca *et al.*, 2015). The status has not been empirically proven to be a direct impact of SCTs (Sinyolo *et al.*, 2016). The increased investment in education and the use of health services is irrespective of the conditionality of the SCTs. (FAO, 2016a) noted that beneficiary households are better able to



afford other non-survival consumption items such as items for hygiene and clothes, which in turn enhances a person's self-esteem amongst other people.

In contrast, Wright (2015), cited in Sinyolo *et al.*, (2016) revealed mixed perceptions about SCTs enhancing a person's dignity, particularly in women receiving CSGs. Whilst it is positive in assisting with household needs and taking care of oneself, in some cases being a CSG beneficiary might be associated with negative connotations in society which in turn erodes women's self-esteem. According to Samson (2009) and Barca *et al.* (2015), SCTs serve as a mechanism that mitigates negative coping strategies in times of livelihood shocks. Livelihood shocks may include a sudden loss of income, natural disasters resulting from climate change and sudden food price hikes (Abdullah *et al.*, 2017). Such situations may often lead households to sell off their productive assets, which in most cases are their livestock, therefore losing more than just what the shock brings about. Hence, SCTs provide an important tool for risk management and protect households against adverse livelihood shocks.

According to FAO (2014), SCTs stimulate overall economic activity through leveraging informal marketing and trading in local economies. For example, SCTs pay-out days provide an opportunistic platform for informal marketing at pay-out points, as informal traders take advantage of the centralization of grant recipients (Barca *et al.*, 2015). Moreover, SCTs improve the credit worthiness of recipients, where there is a regular and reliable source of income. Beneficiary households become financially trustworthy, thus better able to manage debt and enjoy an increase in their creditworthiness (FAO, 2014; Barca *et al.*, 2015). For example, shopkeepers at the community level are better able to allow beneficiary households to buy food and other consumption items on credit and be expected to pay back when their social grants are due. This serves as an improvement in marketing and trading in local economies.

### **2.3.2 Influence of gender on the utilization of social cash transfers**

In many countries, women are the majority of social grants beneficiaries as they are noted to be the poor and vulnerable amongst the population. Between the period of 2014 and 2015, Statistics South Africa reported that the poverty gap and severity of poverty were greater for female-headed households compared to households headed by males, at 49.9% versus 33%, respectively. Comparably, women are said to be the principal beneficiaries of SCTs (Corona and Gammage, 2017), thus considered to have an empowering effect and enable women to have greater control over financial resources within the household (FAO, 2015). The direct outcomes of SCTs to

empowerment remain inconclusive, in terms of improving women's bargaining power and decision-making when living in male-headed households. The inconclusiveness is due to the complexity of measuring decision-making and diverse aspects of empowerment (FAO, 2015).

The interpretation of empowerment is that a household member has the right to make or be involved in household decision-making processes regardless of their household status. Research findings from Doss (2013) and the World Bank (2014b) cited by FAO (2015) indicated that the engendered link as an impact of SCTs is the distinguished differences of spending decisions between women and men. Women often allocate high expenditures on items that improve household welfare such as purchasing food, children's schooling and health needs (Barca *et al.*, 2015). However, this is not a reflection of women's growth in capacity to have control over household resources and decision-making power (FAO, 2015).

Socio-cultural contexts and gender norms in families and communities often determine access to productive resources. Sharaunga *et al.*, (2016) noted that a large proportion of the socially and economically disempowered groups in society included women. Good examples were noted by Barca *et al.* (2015), whereby in countries like Ghana, men had more dominant decision-making authority over productive resources than women. This context was regardless of women being the primary social cash transfer beneficiary in the household.

## **2.4 Overview of agricultural production in South Africa**

### **2.4.1 South Africa's agricultural production status quo**

The South African agricultural sector is characterised by a dualistic agricultural system that, even after democratisation, persists. The duality is in the sense that the sector consists of a well-integrated, highly capitalized commercial sector on one end and an unstable smallholder sector on the other (Aliber and Hart, 2009; Pienaar, 2013). Before democratisation, the agricultural sector in South Africa was economically biased as policies of the past favoured the white-dominated commercialised farmers while marginalising the black population's growth and development in agriculture (Vink and Van Rooyen, 2009). Policies such as the Natives' Land Act of 1913 and 1936 governed the marginalization of the black population's development in the agriculture sector. This consequently gave rise to the dualistic South African agricultural sector with mainly two distinguished types of farmers, large-scale commercial farmers on privately owned land and

smallholder farmers in the former homeland areas (Kirsten and van Zyl, 1998 cited by Pienaar, 2013).

Post-apartheid South Africa developed agricultural policies that aimed to mainstream economic benefits in the agriculture sector towards harmonising agriculture, where both commercial and smallholder farmers could be fully integrated into the existing agricultural system (FAO, 2016). According to Thamaga-Chitja and Morajele (2014), a series of government-led interventions were launched. The Marketing Act of 1996 was conceded to assist smallholder farmers to enter into the market. In 2001, The Strategic Plan for South African Agriculture was pursued to help develop smallholder farmers to progress to being commercial farmers, bridging the gap of a dualistic agricultural sector. The Agri-BEE notion was brought in to facilitate the meaningful participation of black people in the sector.

In 2004, the Comprehensive Agricultural Support Programme (CASP) was introduced. Its purpose was to distribute funds to farming households in the rural areas in an attempt to develop their agricultural activities. The CASP was meant to directly assist 70% and 30% land reform beneficiaries and other agrarian beneficiaries who already have access to land, respectively. The Strategic Plan for Smallholder Support, launched in 2011, aimed to coordinate the provision of support services, including financial services, technical support and access to off-farm infrastructure to smallholder farmers (Pienaar, 2013). The strategy introduced and promoted the formation of farmer collaborations in the form of producer associations or marketing co-operations to strengthen the bargaining power for input purchases and market access (Courtois and Subervie, 2014). Despite the development and passing of policies targeted at assisting smallholder farmers in South Africa, the sector continued to be characterised by unequal distribution of economic assets, support services, market access, infrastructure and income (Pienaar, 2013).

Pienaar (2013) indicated that the commercial farming sector is defined by large-sized land units under production, huge capital investments, modern technologies and production being market-oriented. The commercial sector remains dominated by the white population, constituting a relatively small number whilst privately owning 87% of the total agricultural land (DRDLR, 2017). The commercial sector, being market-oriented, is responsible for 95% of agricultural production in South Africa. On the contrary, smallholder farming is dominated by the black population often located in the former homeland areas (DRDLR, 2017). Generally, people residing in communal areas regard themselves primarily as farmers (Shackleton, Shackleton and Cousins, 2001). Agricultural conditions in the smallholder sector are characterised by poor infrastructure,

widespread land degradation, good quality fallow land, insufficient capital for investment and the use of outdated technology or a lack thereof (Turner and de Satgé, 2012). Despite the feeble characteristics of the smallholder sector, a more vibrant smallholder sector has the potential to address key issues such as rural poverty, unemployment and food insecurity (Aliber and Hall, 2010).

Smallholder farmers are scattered in various locations in South Africa ranging from deep rural areas to townships, cities and commercial farms (Lahiff and Cousins, 2005). South Africa's former homeland areas are made of an estimated eight million households, of which 17% of these households have access to farming land. About 97% of the households with access to farming land are engaged in some form of agricultural activity, mostly on relatively small landholdings (Vink and van Rooyen, 2009). Lahiff (2000) reported that smallholder land sizes under cultivation generally range from 0–1.5 hectares per household. A considerable percentage of these farming households farm on less than 0.5 hectares and only a small proportion of the households farm on holdings larger than 5 hectares.

## **2.4.2 Characteristics of smallholder farmers**

In South Africa, agricultural production in the smallholder sector is presented with a diverse range of challenges. Constrained production factors, limited access to credit, insufficient support services and a range of technical and institutional factors which influence access to markets make it difficult for smallholders to gain traction and stabilize their production enterprises (Pienaar and Traub, 2015). Moreover, age and education levels are some factors that influence the entrepreneurial capacity of smallholders, whilst gender dynamics may influence the decision-making and power parity for productive resources in a typical rural household (Sharaunga *et al.*, 2016).

### **2.4.2.1. Labour and land**

The land is a constantly debated issue in the South African political environment. The status quo of land ownership is unevenly distributed amongst the different racial groups in South Africa, owing to the previous unjust apartheid era (DRDLR, 2017). Land ownership and its laws in rural areas is owned and governed by traditional authorities (DRDLR, 2017). Smallholder farming was a common livelihood strategy for households in low-income rural communities (Jebran *et al.*, 2016). Physical assets ownership (including land, livestock and crops) was imperative in determining the status of food security in households (Mango *et al.*, 2014). Contrary, the lack of

resources was a significant contributor to household food insecurity (Chang *et al.*, 2014). In terms of human capital, Rapsominikis (2015) noted that although most farm labour is supplied by family members, smallholders also hire labour. However, a low capital to labour ratio is employed as they use more labour than capital for production activities (Walsh and van Rooyen, 2015). Hired labour is often seasonal, depending on the demand of activities in that particular cropping season.

#### **2.4.2.2. Support services**

Smallholder farmers need more than access to land for them to farm efficiently, therefore access to support services remains fundamental (Van Niekerk *et al.*, 2011). Lack of support services put smallholder farmers in a disadvantaged position to successfully partake in the market, even if there are growth opportunities available in the market (Moloi, 2008). Kirsten and van Zyl (1998) cited in Sebopetji (2008) proposed a definition of a small farmer that could be considered by South Africa's Department of Agriculture in identifying their small farmer target group; a small farmer is one whose scale of operation is too small to attract the provision of the services they need to be able to significantly increase their productivity Kirsten and van Zyl (1998) cited in Sebopetji (2008). They further added that these farmers need government assistance to be empowered to form part of a new and vibrant agricultural sector. The proposal of this definition was attributable to the presently flawed agricultural support system implemented by the agriculture department in South Africa. Similarly, a study by Pienaar (2013) presented that institutional innovation is the principal tool required to increase smallholders' access to the assets, information, services and markets necessary to grow their enterprises and incomes.

#### **2.4.2.3. Access to credit/capital investments**

Capital investments are fundamental for improving and maintaining agricultural production activities. Ndlela (2015) argued that all farmers generally had limited capital to fulfil their agricultural investment needs, however smallholder farmers have significantly less financial capacity than large commercial farmers. Smallholder farmers' access to formal credit remains impeded due to their low and almost non-existent credit profiling whilst commercial farmers have collateral that increases access and secure capital on credit (Rapsominikis, 2015). The capital injection for smallholder farmers is highly reliant on having an employment opportunity that will generate income for the household (Moloi, 2008). Access to credit is perceived to have a positive impact on food security and has direct effects on the increased frequency of daily regular meals in households (Ksoll *et al.*, 2016). Visa versa, South African households have a long history of low-

income generation from agricultural production (Greenberg, 2015). Though limited, SCTs are another way smallholders can generate income for the households. This is subject to the households' priority expenses which often cannot be prioritised to agriculture (Karlan, 2016).

#### **2.4.2.4. Entrepreneurial capacity**

Moloi (2008) found education as a major role player in determining a farmer's entrepreneurial capacity. Agri-business management principles, the understanding of the agri-value chain, communication and networking skills, and financial intelligence characterise the entrepreneurial capacity of a farmer. This is relevant when the respective farmer is business-oriented as some farmers may be involved in farming for household food security. In this instance, training and extension support becomes crucial. South Africa's smallholder farmers have limitations in making rational decisions on agricultural production as they have little or no formal education (Ngemntu, 2010). This posed a challenge for smallholders to adopt new farming techniques, master financial management and implement innovative ideas towards the development of their farming enterprises. The lack of education, coupled with having low levels of aspiration for self-achievement and to be at a level higher is the principal factor that impedes effective farm management, thus the entrepreneurial capacity of smallholder farmers (Mdlozini, 2017).

#### **2.4.2.5. Market orientation**

Smallholder farmers' integration in the formal market is often hindered by the sophisticated systems involved in gaining market entry (Sikwela, 2013). Barriers to market entry are associated with physical, socio-economic and institutional limitations associated with poor infrastructure (roads), access to transport, meeting quality standards in terms of international trade (Baiphethi and Jacobs, 2009). Other barriers include lack of insurance, market risk exposure and poor access to institutions that can assist in the minimization of risks such as crop losses and livestock deaths (Sikwela, 2013).

Formal traders such as supermarkets and fresh produce markets require an ability to supply large volumes of produce continually, meet food safety regulations, certification and quality requirements (Rapsomanikis, 2015). Smallholder farmers that engage in the formal markets mainly deliver to the fresh produce markets, informal markets and less frequently, supermarket chains (Pienaar, 2013). Various authors identify smallholders as being market-constrained farmers (Kherallah and Minot, 2001; Louw *et al.*, 2008; Mudhara, 2010). Formal market regulations bring about a restriction to smallholders farmers and could thus be confined to local informal markets

(Calcaterra, 2013). Local markets also differ in their own right. In some instances, smallholder farmers are forced to sell their produce at low prices due to high market competition within the informal trading sector (Sikwela, 2013). Challenges in market competition also exist between smallholder farmers and informal traders that purchase their produce from commercial farmers (Boughton *et al.*, 2007).

#### **2.4.2.6. Age and gender**

Participation in the smallholder agricultural sector is largely by the older generation that does not have a well-founded educational background and is exposed to insecurity (Bashir *et al.*, 2012). The reliance on the older generations' farming capacity is through indigenous knowledge that has been passed down from generation to generation (Peters, 2002; Moyo, 2010). The current agricultural production practices make use of modernised technologies that are often highly mechanised and consist of high input costs (Pereira *et al.*, 2014). The use of such technologies would require an unexposed farmer to have an adaptive capacity.

Age is one of the factors that determine the adaptive capacity of a farmer (Abdullah *et al.*, 2017). The older generation is generally more reluctant than the opportune attitude of the younger generation. This lies in the decision-making processes within a household on whether it is autocratic (made by the household head, often in patriarchal societies) or collective, particularly regarding agricultural production activities (Abu and Soom, 2016). In addition, agricultural productivity amongst the elderly-led households declined as they became more reliant on social grants and other means of social protection (Abu and Soom, 2016).

Gender dynamics cannot go unmentioned when talking about decision-making processes in the household and ownership of productive resources. Ajadi *et al.* (2015) noted that 80% of agricultural production in Africa is contributed by smallholder farmers. In South Africa, 80% of these farmers are rural women who remain constrained with not having access to and ownership of land and productive resources (Thamaga-Chitja, 2010). The prevalence of gender injustices is significantly influenced by cultural norms and beliefs that have passed on from generation to generation (Sharaunga *et al.*, 2016).

The Food and Agriculture Organization reported that social customs limit women's participation in decision-making processes and their exposure to economic opportunities that arise, thus increasing the level of inequality (Ajadi *et. al.* 2011; Barca *et. al.*, 2015; Thamaga-Chitja and Morojele, 2014). Chitja (2012) noted that women are responsible for most of the productive

activities in farming and in the household due to the perceived cultural role of women's work. Moreover, time poverty is a serious challenge among rural women which impedes them from further enhancing their farming activities beyond their households (Chitja, 2012). Such challenges exacerbate the threats to sustaining rural livelihoods as women were said to be the key to providing household food security (Peterman, 2002).

#### **2.4.3 Challenges faced by rural smallholder households and coping strategies employed**

Despite the high rate of rural-urban migration in South Africa, a large proportion of the population reside in rural areas. A substantial number of rural households are also noted to be engaged in some form of agricultural-related activity, in one way or the other (Thamaga-Chitja and Morojele, 2014; Pienaar and Traub, 2015). Statistics South Africa (2012) conducted a multi-year census that reported a high number of people participating in smallholder farming activities. These rural smallholders were often characterised by weak livelihood assets and thus more vulnerable to household food insecurity (Thamaga-Chitja and Morojele, 2014).

Poverty, unemployment, food insecurity and agricultural resource-poorness still characterised agricultural-based households (Mudhara, 2010). As a result, diverse livelihood strategies are employed by rural households to sustain their livelihoods which, according to Statistics South Africa (2012), include salaries and wages, followed by social grants, income from business and pension remittances. Social grants make up the majority and primary source of income among smallholder farming households in South Africa (Nompозolo, 2000; Smith and Abrahams, 2016). According to Perret and Kirsten (2000), of the 70% rural agricultural-based households, only 2.7% of those households rely on agriculture as the main source of household income (Rapsomanikis, 2015). Agriculture continues to play an integral role among these diverse livelihood strategies (Vink and van Rooyen, 2009).

Socio-economic and agro-ecological factors determine the potential of agricultural activities of smallholder production systems (Cousins, 2010; Mudhara, 2010) and systems decided on are dependent on the farmer's capacity to implement the farming practice. According to Mabuza (2009), land and labour are principal factors of production in smallholder agriculture despite that capital investments and land improvements are minimal in this sector. Production is constrained due to the lack of effective farming tools, low quality of land and the absence of innovative farming technologies as smallholders remain conformed to outdated farming practices (Mabuza, 2009).



Smallholder farmers often depend on their indigenous knowledge for the production systems they employ that was passed down from previous generations. These production systems are subjected to the lack of innovation and low levels of aspiration as farmers are still attached to their ancestral values, making them respond slower to change and innovation (Clifton and Whatson, 1969 cited in Mdlozini, 2017).

Furthermore, the FAO (2014) noted that smallholder agricultural growth is retarded by the lack of aspiration, farming resources, knowledge about farming improvements and insufficient incentives to drive such improvements. Sibanda (2015) stressed the need to find strategies that accelerate smallholder agricultural production and develop gender-specific support systems. Distinguishing the different roles of household members in farm production and consumption could help bridge the gap that hinders intra-household bargaining power and create equal agricultural opportunities for both men and women (Hendrick, 2015). This could address gender inequality and generate positive outcomes for agricultural production and food security indicators, and acknowledge that women play a vital role in ensuring food security in rural households (Sibanda, 2015).

Smallholder farmers primarily produce for household consumption (Tshuma, 2014) and “as an extra source of food” for the household (Pienaar and Traub, 2015). Generally, smallholders produce a wide range of foods owing to achieving a better and more diverse diet. Although they are not fully engaged in the formal markets, they use diversification as a strategy to stabilise their income and manage their risk in times of shocks and distress (Rapsomanikis, 2015). Nothard *et al.* (2005) acknowledged the significance of the smallholder agricultural sector on rural and economic development. Attesting to this, Pote (2008) and Ngemntu (2010) recognised the smallholder sector as having a pivotal role in redressing the distribution of income and creating linkages for economic growth, which in turn addresses poverty alleviation.

Smallholder farmers’ agricultural practices are highly diversified as they can either be partaking in crop production, livestock production and/or mixed crop-livestock production (Ellis, 1998; Makate *et al.*, 2016). This diversification of farming practices forms part of already diverse livelihood strategies of rural households which creates a cushioning effect to poverty in rural South Africa (Chitja, 2012). Crops such as staple maize, potatoes, sweet potato, *amadumbe*, beans and vegetables such as spinach, cabbage, carrot, onion and beetroot are commonly produced by rural households, particularly in South Africa (SANBI, 2014). Most households also have some fruit trees, consisting of peaches, apples, oranges, lemon and avocado trees.

There are different cultural, economic and social reasons for keeping livestock amongst rural communities (DEA, 2016). Cultural reasons are for performing family ceremonies for different reasons. For example, in some South African cultures cattle is used for traditional customs such as *lobola* payments, and in some cultures, a goat is slaughtered during a ceremony for a young girl's coming of age. Livestock keeping does not only provide a source of food (meat and milk) for consumption but also yields hides and manure to use as fertilizer (IFAD, 2015). Both hides and manure can also be sold to earn an income. Cattle draught power may be used for ploughing either by the owner or maybe hired out (Tschopp *et al.*, 2010b). The greatest perception of livestock keeping is for the household's savings. Livestock can be easily liquidated and therefore provides as a means of savings and security for many livestock keeping households, and sold should a need arise (Tschopp *et al.*, 2010). Social reasons for livestock keeping is perceived as a sense of wealth and a respectable social status of a household in a community (Thornton, 2010; Lunde and Lindtjorn, 2013).

Smallholders in South Africa are primarily dependent on dryland farming which is prone to irregular patterns of rainfall (Ncube, 2018). Weather patterns are inconsistent with climate change bringing more susceptibility to smallholders' production activities (Stige *et al.*, 2006). In present-day farming, climate change and its effects cannot go unnoticed and unplanned in an agricultural production system. Climate change is the change in weather patterns over a prolonged period of time as a result of human activities, destruction of the natural environment or natural variability (Ubisi, 2016; Abebe and Bekele, 2017). Climate change is characterised by irregular rainfalls that may be low or excessive to cause floods, extreme prolonged temperatures causing heat stress and drought, rising sea levels and severe storms (FAO *et al.*, 2017). The susceptibility of smallholder farmers to these weather events often constraints their production and thus their food security.

## **2.5 The concept and state of food security in South Africa**

### **2.5.1 Conceptualising food security**

The trends in world hunger and prevalence of undernourishment have realised a slight decrease from 16% in 2003 to 11% of the world population in 2018 (FAO, 2010; WFP, 2019). Sub-Saharan Africa accounted for 56% of the world's extremely poor population group in 2015 (WFP, 2019). This was despite the international efforts implemented to half poverty by the year 2015 in the Millennium Development Goals. The Sustainable Development Goals, in the latter, aimed to end hunger, achieve food security and improve nutrition by the year 2030. The high number of people

suffering from hunger and food insecurity was presented as the primary challenge for a large portion of the world population (WFP, 2019).

There are over 200 definitions of food security and food insecurity, being used interchangeably. Food security was originally understood as an issue of national and global food supply (Maxwell, 2001) where it considered a nation's (or global) ability to produce enough food to feed its population. This definition was in the assumption that national food production can meet the demands of the population residing in it and that there is even distribution of food including equal access, availability, affordability and nutritive utilization among all the respective nation's population.

The World Health Organization (1992) defined food insecurity as a situation that exists when people lack access to resources (human and non-human) to acquire food through production or purchasing, inappropriate distribution or inadequate utilization at the household level, thus negatively affecting active healthy living and well-being of households (WHO, 1992). The definition evolved from the misperception between national food security and the experience of households obtaining food (Msaki, 2010). The contrary considers issues of household and individual access to food and consumption, nutrition and health factors (Maxwell, 2001). Validating this, Reutlinger and Knapp (1980) and Sen (1980) noted that traditional approaches to food security typically focus on the national aggregate level of food supply, agricultural production and the balance of agricultural trade whereas household food security is not directly related to the national level food supply.

For example, the national food security indicators demonstrated that South Africa had been able to meet the food required for its growing population. However, no clear statistics were indicating the same conditions at the household level, particularly in the rural areas of South Africa (du Toit, 2011). Sen (1980) highlighted that food access by households and individuals may be constrained by economic, social and cultural factors and it differed between households and between individuals. Food security cannot be understood in isolation from other developmental questions such as social protection, sources of income, rural and urban development, changing household structures, health, and access to land, water and inputs, retail markets or education and nutritional knowledge (Altman, Hart and Jacobs, 2009). This study considered the definition from the 1996 World Food Summit (cited by Shaw, 2007) where the state of being food secure existed when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that

meets their dietary needs and food preferences for an active healthy lifestyle (Kennedy *et al.*, 2010). The definition applies at individual, household, national and global levels.

Du Toit (2011) echoed the importance of differentiating between national and household levels of food security as the assessment at these levels differ. National food security refers to the state whereby the nation could produce, import, retain and sustain food required to support its population with adequate nutritional standards (Du Toit, 2011). Food security at the household level refers to the availability of food for all members of the household. When members in the household do not live in hunger, nor in fear of starvation, the household is regarded as being food secure (Du Toit, 2011).

Choudhary and Parthasarathy (2007) cited by Omilola and Kaniki (2014), distinguished that household food security could not be an assurance of individual food security due to intra-household factors such as age and gender. Food availability in the household may not be equally accessible to the men, women and children in the household (Choudhary and Parthasarathy, 2007 cited by Omilola and Kaniki, 2014). Furthermore, the inherent destitute position of women within the household exposed them to food and nutrition insecurity. Food distribution within households favoured men and children over women.

Despite the diverse and comprehensive definitions, food security is commonly conceptualized and centred on four interrelated pillars, namely; availability, accessibility, utilization and stability (Clover, 2003). Food availability is when there are sufficient quantities of food available to all individuals in a household, country or region in the form of production, stocks, imports as well as donations (FAO, 2006). Vink and Van Rooyen (2009) reported on an increase in the per person production of agricultural produce in Africa. This increase did not guarantee food security at any level as this was the past ill interpretation of the term and the actual occurrences of food security at different levels. At the household level, food availability is associated with the household production of crop and livestock products, and purchasing power. This is a reflection of the physical availability of food in the household enough to feed all household individuals (Asghar and Muhammad, 2013). Other factors that influence the availability of food includes geographical location, seasonal changes, food preservation, and distribution systems (FAO, 2006). For example, crops acclimatized to a certain geographic location show seasonal variation and this informed the kind of food available in a region and at a given season (Cline, 2007).

The possibility of food preservation for a household is highly dependent on the availability of sufficient food from surplus production and having adequate food preservation measures that eliminate health hazards for food safety (Ibeanu *et al.*, 2010). A study in Nigeria showed that major post-harvest losses were attributed to having poor preservation and storage facilities where spoilage and rodent attacks occur. This contributed to household food shortages despite having surplus produce as the preserved food does not last until the next harvest season (Ibeanu *et al.*, 2010). Food distribution entails the supply or dissemination of food to enable access. Globally, a high disparity between people with adequate access to food versus those that are malnourished exists (Leather and Foster, 2009). Hence, some of the noted direct and indirect implications for the poor distribution of food include poor access to markets, poor road infrastructure, food waste, unstable food prices, and corruption (Murthy, 2010).

Food accessibility concerns the ability of an individual or household to obtain food and is attained when household members have enough resources to acquire the food (Riely *et al.*, 1999; World Food Programme, 2009). Sufficient food may be physically available but futile for a household without the means to obtain the food through a lack of purchasing power and rights to access the food (World Food Programme, 2009). Factors such as the physical environment, social environment, political and economic environment influence the capabilities of households to secure their livelihoods and be in a state of food security (Riely *et al.*, 1999). The physical environment may be that climatic conditions and/or the geological stance of a region may not be favourable to produce specific types of agricultural produce required to meet an individual's dietary requirements. Food may therefore need to be obtained through purchasing (FAO, 2017a). The purchasing power of consumers differs, therefore may be difficult to access food, particularly in the rural areas with predominantly low-income households (FAO, 2017a/b/c). While South Africa is considered a food secure country, a substantial number of households are food insecure (du Toit, 2011). As reported by Statistics South Africa, the General Household Survey indicated that about 20% of households in the country have inadequate food access and KZN was identified as the second most affected province, with 23% of its households with inadequate food access (Statistics South Africa, 2017).

Food access should also assure adequate quantity and quality of food to be able to meet a households' physiological needs and preferences (FAO, 2006). This overlaps with the definition of food utilization as it also refers to the conversion of food to nutritional benefits in the human body to keep an active and healthy lifestyle. The definition considers an individual's energy and

dietary requirements being met by consuming sufficient quantity and nutritional quality of food. Food availability and access alone does not ensure food security if the food is not nutritionally sufficient and preferential to the consumer (FAO, 2006). Over and above food quality, food utilization also denotes the importance of non-food aspects such as the availability of clean and safe water, clean cooking fuel, hygiene and sanitation (Jemal and Callo-Concha, 2017).

Food stability is the balance between food availability, access and utilization continuously to ensure an active healthy lifestyle (FAO, 2006). This is where an individual, a household and a population is not anxious about the availability of food. Food stability is met when the influences of political, economic or climatic shock do not result in a loss of food access at all levels (FAO, 2006). At the household level, stability prevails when periodic shocks such as the death or unemployment of a household member do not obstruct food availability and access for the household (Jemal and Callo-Concha, 2017). Similarly, cyclical events such as seasonal food security should not prevent the availability and access to adequate food. Food stability entails the surety and sustainability of the supply and access to adequate and nutritious food (Hart, 2009). For people to be deemed food secure, there must be a presence of all four interconnected pillars and no single element can ensure and sustain food security on its own (Faber et. al., 2008 cited in Hart, 2009). The weakening of one element jeopardizes food security as a whole, similarly at national, household and individual levels.

### **2.5.2 Food security in South Africa**

South Africa is deemed a food secure country as it produces surplus food for exporting and can import what is needed to meet its food requirements (FAO, 2017a/b/c). Food insecurity is also a highly stressed economic flaw in South Africa as it is addressed as a constitutional right indicating that every South African citizen has the right to sufficient food, water and social security (du Toit, 2011). Du Toit (2011) and Ngema *et al.*, (2018) noted that food insecurity is interrelated to poverty, income and unemployment. The plight of poverty cannot be overlooked when assessing food security in a given population as these two concepts are highly likely to influence one another. Du Toit (2011) defined poverty as the condition of not having the means to afford basic human needs such as clean water, nutrition, health care, education, clothing and shelter.

Altman, Hart and Jacobs (2009) asserted that there is little certainty about household food security status in South Africa. Various authors (Hendriks, 2015; Ngema *et al.*, 2018) have reaffirmed that there is a high household food insecurity prevalence, particularly in rural South Africa, but

substantial empirical evidence to support this was absent. Contrary, the poverty trends in South Africa depicted that South African households with inadequate access to food declined from 23,9% in 2010 to 22,3% in 2016 (Statistics South Africa, 2017). Moreover, the hunger within households declined from 23,8% in 2010 to 11,8% in 2016, while another trend revealed that the percentage of individuals that experienced hunger in South Africa declined from 29,3% to 13,4% (Statistics South Africa, 2017). There was also a notable rise in the percentage of individuals that benefited from social grants with at least one-third of black South Africans (Statistics South Africa, 2017).

The notable declines can be associated with government-led food security intervention programmes that are implemented in poverty prone areas. Some of these interventions include the following; Comprehensive Agricultural Support Programme (CASP), Livestock Programme, Mechanization Programme, Mushroom Programme, Women, Youth and People with Disabilities, Indigenous Nguni Livestock Programme, Rural Development Programme, Impact Partnership, One Home One Garden, and Land Care (Ngema *et al.*, 2018). All these intervention programmes are aimed at improving the food security of poverty-stricken and vulnerable households and offer employment opportunities (Drimie, 2016; Ngema *et al.*, 2018).

Although South Africa is regarded as a food secure country, the same cannot be said about household food security. This is owing to the distribution system of food in the country and the per capita income of people which both are unequal among the South African population (Altman *et al.*, 2009; Musemwa *et al.*, 2015). Food insecurity in the country is further exacerbated by a range of factors. These include domestic electricity supply constraints, increasing fuel and oil prices, global economic activities and climate change, which in turn influence food prices (Musemwa *et al.*, 2015; Van Wyk and Dlamini, 2018). Rising food prices particularly of South Africa's staple crops maize and wheat pose a serious problem for the rural and urban poor as most are net buyers of food (Altman, Hart and Jacobs, 2009). Evans (2009) predicted that food prices would continue rising yearly and this would aggravate household food insecurity in South Africa. Van Wyk and Dlamini (2018) confirmed that food prices had negatively affected poor and vulnerable households.

### **2.5.3 Agriculture-based livelihoods and food security**

It is largely emphasized that agriculture plays a pivotal role in addressing food security, particularly in poor or low-income households in rural areas (Smith and Abrahams, 2015). Due to the complex nature of farming, these households' food security cannot be assured by their

production alone. The productivity of this sector is relatively low and presented with numerous challenges. These challenges are associated with poor resources, land degradation, lack of investment options, climate change effects, and unreliable markets amongst others, which limit the productivity of smallholders (Baiphethi and Jacobs, 2009). Despite these odds, the KZN province has a relatively high agricultural potential as compared to other provinces, mainly attributable to its climate, soils and access to water (KZN DAEA, 2005).

In South Africa, more than four million people engage in smallholder agriculture with the majority concentrated in the former homeland areas (Altman *et al.*, 2009). Baiphethi and Jacobs (2009) noted that people engage in agriculture for various reasons. They identified that the main source of food for smallholder farming households in rural South Africa was mainly acquired through purchasing in markets (Msaki, 2010; Musemwa *et al.*, 2015), and this was supplemented by household food production (Hart, 2009). For instance, household production was more of an “extra source of food” rather than the “main source of food” as attested by the literature. Moreover, there is a small number of people that are engaged in agriculture as a main or extra source of income, however, there is a lack of credible data on a national scale that illustrates how the smallholder agricultural sector contributes to food security (Baiphethi and Jacobs, 2009).

Benson (2004) highlighted the importance for smallholders to have access to consistent income as they often struggle with food shortages in between harvests. Households resort to other livelihood coping mechanisms in response to food shortages. Farzana *et al.* (2017) noted it had been largely acknowledged that coping strategies against risks and shocks were a significant part of people’s livelihoods. Although shocks may manifest differently, they often led to a substantial loss of income, wealth and/or a reduction in consumption (Farzana *et al.*, 2017). Coping strategies are mechanisms that households employ in response to shocks, stresses and crises to avoid hunger, meet their food requirements and protect their livelihoods (Hendriks, 2015). These are adaptation actions that individuals and households undertake during periods of food shortages and/or grant inadequacy (Limon *et al.*, 2017).

Such actions include reduced food intake and choice, gathering wild foods, and the sale of household assets (Limon *et al.*, 2017). In addition, the Eastern and Central Africa Regional Management (CARE) and World Food Programme (WFP) affirmed that households potentially relied on food purchased through credit during times of difficulty (Musemwa *et al.*, 2015). Hence measuring food security and assessing the impact of food aid programmes, CARE and WFP development developed the Coping Strategies Index (CSI) as a measure of behavioural responses



used to manage household food shortages, measuring the type, severity and frequency of the coping mechanism employed (Maxwell *et al.*, 2013).

Moreover, the social protection system in South Africa is realised as a cushioning effect against livelihood adversities and food insecurity (Benson, 2004). Attesting to this, the FAO (2015) confirmed that SCTs were an effective instrument for reducing the incidence and intensity of household food insecurity provided that they are well-designed and well-targeted. Gutura and Tanga (2017), mentioned that SCTs were not designed in a manner that reduced vulnerability and dependency of households. Nompozolo (2000) reported that the majority of households in South Africa are still dependent on social grants as their main or only source of household income. More than a decade later, this is still the case as Statistics South Africa (2017) reported a similar trend.

A study by Musemwa *et al.* (2015) conducted in the Eastern Cape Province reported that most smallholder farming households depended on government social grants for household food requirements rather than own production. The reliance of rural households on social grants is attributed to the abandonment of reliance on food production. Validating this, Kajiita and Kang (2016) argued that the cash economy has been highly influential in causing a decline in agricultural productivity as smallholder farmers became less dependent on agriculture. The reliance on the cash economy enabled smallholder farmers to opt for purchasing food in the market rather than own food production.

A study conducted in Ethiopia by WoldeYohannes *et al.* (2018) indicated that food-insecure households also practice coping strategies that are short-term measures but may further expose the household to vulnerability such as selling productive assets and other materials. To mitigate this, Tirivayi *et al.* (2013) argued that SCTs indirectly impacted agriculture by mitigating risk-coping strategies that depleted household agricultural assets, leading households to sell agricultural equipment to buy food. Hence, Smith and Abrahams (2015) emphasised the need for SCTs to be designed in association with other dynamic sectors such as agriculture, health and education. This could further endorse the economic progression of individuals and households.

## **2.6 The contribution of social cash transfers to household food security**

There are mixed perceptions on the contribution of SCTs to household food security. On a positive note, social grants play a pivotal role in increasing the purchasing power of recipient households as regular and predictive amounts of money is available to purchase food from markets (Msaki,

2010; Musemwa *et al.*, 2015). However, the purchasing power may be unsustainable as it is subject to food price increases, inflation and economic volatility. The FAO (2015) upholds the SCTs as they incentivise agricultural production, thus improving the availability of food, although multiple factors determine the success of production activities such as the micro-climate, agro-ecological factors, adequate input supply and labour to name a few.

Contrasting views state that SCTs deter participation and investment in agricultural production activities through increased reliance on purchasing food in markets (Kajiita and Kang, 2016). Critiques argue that social grants create dependency and therefore does not promote sustainable growth and development of recipients (Tshuma, 2012; Sinyolo *et al.*, 2017).

## **2.7 The contribution of social cash transfers to agricultural production of smallholder farmers**

The contribution of social protection to the agricultural production of smallholder farmers remains complex. Notable contributions of SCTs help the rural poor and smallholder farmers to reduce seasonal cash-flow blockages and effective investments (Devereux, 2009). This enables smallholder farmers to expand and use their productive asset-base more efficiently. In addition, SCTs can potentially undermine incentives for investment in agriculture. According to Devereux (2007), there are two ways to address food gaps in smallholder-oriented farming households through productivity-enhancing safety nets. The first includes reducing food production deficits through enhancing access to agricultural inputs (Holmes *et al.* 2007). The second includes bridging consumption deficits with SCTs (Devereux, 2009). In summary, SCTs provide an additional advantage of reducing the need for emergency relief when harvests are inadequate (Devereux, 2009).

## **2.8 Review of the adopted analytical techniques**

### **2.8.1 Endogenous Switching Poisson model**

The Endogenous Switching Poisson model has been rarely applied to analyse the contribution of access to cash transfers on household food security status. To assess the impact of a social protection program on the adverse impacts of the COVID-19 pandemic on food and nutrition security in Ethiopia, Abay *et al.* (2020) applied the Endogenous Switching Poisson model. The results indicated that the social protection programme mitigated the impacts of the pandemic on

food security. Social cash transfer beneficiaries reported a relatively low decline in food security, compared to non-beneficiaries.

### **2.8.2 Logistic Regression model**

Dou *et al.* (2017) used the Logistic Regression model to investigate the dependence of small farming households on government cash transfers and to identify the main factors that lead to better livelihood outcomes. The study examined the factors that contribute to heterogeneous household livelihoods and patterns of dependence on cash transfer programs. Findings showed that households are engaged in a diversity of livelihood strategies and vary in their dependence on cash transfers. Moreover, lower levels of dependency were associated with higher levels of education and income from off-farm activities as well as larger property sizes. To determine the impact of family income and conditional cash transfers on changes in household food insecurity status in Northeast Brazil, Palmeira *et al.* (2020) applied the logistic regression model. The results showed that the decrease of food insecurity occurred in an area of extreme climatic and social vulnerability. These changes were more related to the cash transfer than the increase in family income over time.

### **2.8.3 Household Food Insecurity Access Score (HFIAS)**

In 2006, the United States Agency for International Development (USAID) funded the Academy for Educational Development for the Food and Nutrition Technical Assistance (FANTA) Project to publish a tool that can be useful and suitable in measuring household food insecurity, namely, Household Food Insecurity Access Score (HFIAS) (Maziya *et al.*, 2017). Many studies in the past have used the Household Food Insecurity Access Score (HFIAS) to analyse and measure the food insecurity status level of rural households (De Cock *et al.*, 2013; Kabalo *et al.*, 2019). De Cock *et al.* (2013) investigated the food security status of rural households in the Limpopo province using the HFIAS tool. The results indicated that 53 % of the sampled rural households declared themselves to be severely food insecure.

Moreover, HFIAS has been applied by several studies to examine the impact of social cash transfers on food security (Raghunathan *et al.*, 2017; Bhalla *et al.*, 2018; Hounge *et al.*, 2019). To analyse the impact of cash transfer programs on food security in India, Raghunathan *et al.*, (2017) applied HFIAS. The results showed that the receipt of payments from the cash transfer programme was associated with a decline in the household food insecurity level. Bhalla *et al.* (2018) examined the impact of Zimbabwe's harmonized social cash transfer programme on household food security

using HFIAS. The study found that the programme has had statistically significant impacts on food security but null to low impact on food consumption. Hounbe *et al*, (2019) investigated the impact of unconditional cash transfers on households' food security and children's and caregivers' dietary diversity in rural Burkina Faso. Using HFIAS, the study found that unconditional cash transfers increased dietary diversity in children and their caregivers.

## **2.9 Conclusion**

Social protection has proven to be a fundamental instrument in tackling the multidimensional issues of poverty and protecting the livelihoods of vulnerable groups. Social protection policies in South Africa have been effective in their reach and have impacted many poor and food insecure individuals and households. The steady increase of the social grants has proven to impact positively on households' ability to become food secure. Increased reliance on social protection in South Africa further complicated the socio-economic status of households. The findings of the General Household Survey demonstrated that the number of beneficiaries was constantly rising and food security remained a concern in South Africa (Statistics South Africa, 2017). This chapter has revealed the complex nature of food security and insecurity in South Africa. Agriculture plays a pivotal role in addressing food security, particularly in poor or low-income households in rural communities. The next chapter deliberates on the methodological process that was undertaken to conduct the research study.

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## **CHAPTER 3: METHODOLOGY**

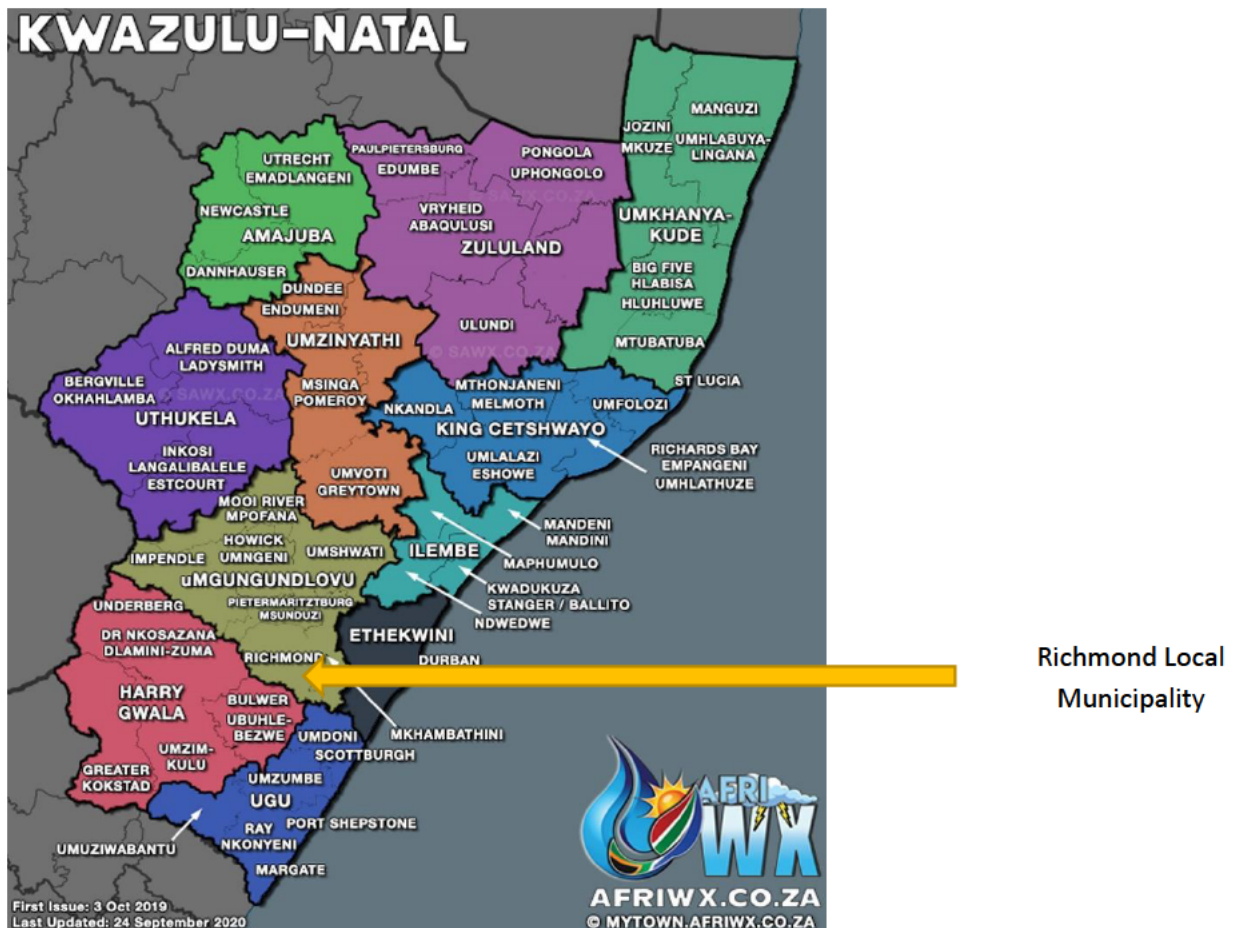
### **3.1 Introduction**

The chapter describes and explains the methodology for the research study, including the study design, methods and techniques used. The geographical location, socioeconomic and environmental characteristics of the study area are described as well (Terre Blanche and Durrheim, 2006). The research approaches employed during data collection are covered in this chapter (Marshall and Rossman, 2011). Detailed sampling procedures are covered in chapters 4 and 5 since the study adopted a paper format dissertation.

### **3.2 Description of the study area**

The study was conducted in the Richmond area, in Nhlazuka, in the Nkumane, St Bernard's Mission and Mpofana villages. The areas are located in the Midlands of the KwaZulu-Natal (KZN) Province in South Africa. KZN is regarded as one of the three most poverty-stricken provinces in South Africa together with Eastern Cape and Limpopo (Statistics South Africa, 2017). According to the South African National Biodiversity Institute (SANBI, 2014), the high poverty rates and lack of opportunities, particularly in the rural areas, further aggravated unemployment rates affecting mostly the youth. The economic sector is dominated by agriculture (40-45 per cent followed by community service (25-39 per cent) then trade and finance both lying at 5-10% (IDP, 2016). The Richmond area falls under the Richmond Local Municipality and is one of the seven local municipalities within the greater UMgungundlovu District Municipality, located approximately 38 kilometres south of Pietermaritzburg (Richmond IDP, 2015/16).

Climatic conditions, amongst other factors, highly influenced agricultural production potential and, thus, it was important in understanding the climatic conditions that prevailed in this region (World Bank 2013). The Richmond area experienced an average temperature that ranged between 14.2°C to 16.3°C, with higher temperatures experienced in the Mkomazi River Valley ranging between 17.9°C and 19.8°C (SANBI, 2014). The average maximum of 27°C in January dropped down to a minimum of 3°C in July (Richmond IDP, 2015/2016). Summer rainfall commenced in October and continued through to April. Richmond also experienced an annual rainfall of 852 mm, which occurred mainly during mid-summer (Richmond IDP, 2015/2016). Smallholder farmers generally depended on rainfall for irrigating their cultivated lands and were often limited to no alternative sources and/or methods for irrigation.



**Figure 1:** Map showing the location of the study area at Richmond Local Municipality, KwaZulu-Natal in South Africa (Available: <https://sawx.co.za/province-district-municipality-maps/>).

The Richmond Local Municipality has an estimated population of 65 793 residing in about 16 446 households with an annual population growth of 0.4 per cent (Richmond IDP, 2015/2016). The majority of the population resided in predominantly rural areas which were characterised by a scarcity of basic services, facilities and persistent unemployment (Statistics South Africa, 2017). With regard to the education of the study population, 16.1% of the population lacked education, 22% had completed grade 12 (matric) and only 4.2% had higher education. Almost 50% of the households in Richmond are female-headed households (Statistics South Africa, 2017).

Of the 2.9 million households that engaged in agriculture nationally, KZN, Eastern Cape and Limpopo provinces were noted to host the highest numbers of agricultural households in the country (Statistics South Africa, 2017). Agriculture was considered the backbone of the Richmond Local Municipality's economy as it utilised a large portion of the area, also being the largest

employer of the municipal population, while the unemployment rate in the area was estimated at 26%.

The dominant agricultural activity in Richmond was implemented by large-scale commercial farmers and corporate organisations. Limited production and subsistence farming occurred in the peri-urban and rural settlements with about 5 629 households involved in farming activities (Statistics South Africa, 2017). The Richmond IDP (2015/16) reported that most residents in Richmond worked in factories and industries situated in both Richmond and Pietermaritzburg. The reports further indicated that there was a very high number of low-income earners in the area with the majority of the population highly dependent on government social grants.

### **3.3 Data collection method**

The Survey Method was used to collect data was a structured questionnaire, administered by the researcher. The advantage of a structured questionnaire is that it allows respondents to answer the questions with urgency and to answer the same questions, making the research method more viable (Creswell, 2008; Ngema *et al.*, 2018). Sekaran and Bougie (2016) defined a questionnaire as a pre-formulated written set of questions that are required to be answered by research respondents. The questionnaire was divided into six sequential sections, from A to F. Section A covered the basic household demographics and characteristics in terms of the use of household income, and particularly SCTs, in meeting household needs. This included SCTs' effectiveness on agricultural activities, education and health needs. Section B encompassed agricultural activities practiced by the farming households and practices adopted in their agricultural production. Section C observed the participants' involvement in the agro-value chain. Section D interrogated whether SCTs were used to fund agricultural production activities, within the 2017/2018 production seasons. Section E looked at household social inclusion and interrogated participation in any form of beneficial social associations. Lastly, section F consisted of food security questions which included other coping mechanisms that households may have employed against major income shocks.

Before the data collection, four enumerators were trained to assist with data collection. Mugenda and Mugenda (2003) emphasized the importance of training enumerators to standardise data collection, minimise variations in the data collection procedures and maintain impartiality. The enumerators were familiarised with the questionnaire. This was intended to raise areas of clarification and provide full understanding on interpreting and translating the questions. Although

the questionnaire was written in English, the questions were asked in the local language (isiZulu) to ensure the questions were well understood by the participants.

The data collection process ensured that there was informed consent (Kumar, 2011). Participants were informed about their voluntary participation and permission to withdraw at any point of discomfort. The participants were assured that their information would remain confidential and be used solely for educational purposes. Secondary data was gathered to compile the first, second and third chapters of the study, and the data analysis chapters discussed the primary data gathered.

A total sample of 108 households participated in the study. Sekaran and Bougie (2016), defined sampling as the method used to select people/objects as proxies to the entire population. The target population constituted of agriculture-based households that were beneficiaries and/or non-beneficiaries of SCTs. Kumar (2011) mentioned that the larger group was referred to as the population and the nominated few were referred to as the sample. In ensuring that the population was well represented, the study employed a stratified random sampling method to select research participants from a presumed homogeneous population of households in the Richmond Local Municipality.

The population regarded as homogeneous was characterised by households that were most likely to be involved in agricultural activities. As noted by Alvi (2016), a population was regarded as homogenous when all its elements were similar to each other in all aspects. The stratified sampling procedure divided the population into smaller groups, or strata, based on common characteristics (Alvi, 2016). In this case, locations formed the main strata for sampling. Participants in the study were identified with the assistance of the local key informants from the Richmond area.

### **3.4 Data analysis methods**

The data were captured in a computerized manner using Statistical Packages for Social Science (SPSS) and STATA. Descriptive statistics and econometric analysis were applied to analyse the data collected from the respondents. Descriptive statistics were used to show frequencies originating from the data. Moreover, they provided a descriptive summary of the sample and variables measured (Jaggi, 2003). Various measures of dispersion such as mean, standard deviation, minimum and maximum were determined. The study assessed the role of cash transfers on the food security of farming households using the household food insecurity access scale (HFIAS). The HFIAS measures the “access component of household food insecurity” based on information covering a four-week period (Coates, 2015). The HFIAS was chosen due to its

widespread application in similar studies (Kirkland *et al.*, 2011; Taylor *et al.*, 2011; De cock *et al.*, 2013; Maziya *et al.*, 2017) in South Africa. This study also used the Household Food Insecurity Access Prevalence (HFIAP) to categorize the households into four types of household food insecurity. Additionally, an Endogenous Switching Poisson model was employed to analyse the determinants of cash transfer and its impact on household food security in the study area. The Endogenous Switching Poisson model corrects for selectivity bias and endogeneity issues that may occur because of some observed and unobserved factors that may influence both cash transfer and household food security (Donkoh, 2020). The detailed description of the Endogenous Switching Poisson model, as well as the HFIAS and HFIAP, are discussed in chapter 4.

To determine the factors influencing access to social cash transfer programs among smallholder farmers, the study used a Logistic Regression model. Logistic regression is a multivariate regression and permits an analysis where several independent variables forecast a dependent variable in the presence or absence of an outcome based on the values of a set of predictor variables. The main advantage of Logistic Regression is the usability of each type of variable. The specification of the Logistic Regression model and its description are in Chapter 5.

### **3.5 Validity and reliability**

Yamson *et al.* (2018) mentioned that validity referred to the degree to which a measure fulfilled what it intended to accomplish. In this study, validity was ensured through studying and learning from previous similar research papers that aimed at achieving like-minded objectives. Validity was also ensured by administering a structured and close-ended questionnaire to the respondents for reliable responses. Babbie (2013) defined reliability as the degree to which a test consistently measured what it intended whilst ensuring similarity in time yielding results. This study ensured reliability as respondents answered from the same set of questions and chose from the same set of answers as the questionnaire was close-ended, thus may produce similar results from respondents with similar characteristics.

### **3.6 Conclusion**

The methodology chapter outlined the description of the study area, data collection methods and data analysis methods that were employed in conducting the study. Furthermore, aspects of reliability and validity of the study were briefly discussed. More detailed methodology is presented in research chapters – chapter 4 and chapter 5, respectively, to respond to the aims and objectives



of this research study. The next two chapters, chapters 4 and 5, report on the actual investigations conducted.

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## **CHAPTER 4: THE ROLE OF CASH TRANSFERS IN ADDRESSING FOOD INSECURITY IN THE RICHMOND AREA OF KWAZULU-NATAL, SOUTH AFRICA**

### **Abstract**

The inability of households in rural areas, who depend on agriculture for their livelihood to access productive resources, can have serious implications for their agricultural productivity and welfare. Improving the capacity of low-income households in South Africa can increase household food security and agricultural productivity, which is an important policy goal of the government. The objective of this paper is to investigate the role of social cash transfers in addressing food (in)security in the Richmond area of KwaZulu-Natal, South Africa. In this study, Household Food Security Access Scale (HFIAS) was used to estimate the food security status of 108 sampled households. An Endogenous Switching Poisson model was employed to analyse the impact of access to cash transfers on household food security in rural areas of South Africa while also accounting for both endogeneity and sample selection issues. The results showed that access to social cash transfer (SCTs), gender of the household head, access to credit, membership to the farm-based organisation (FBO), membership to cooperative, and agricultural training were statistically significant in determining the household food security. The age of the household head, household size and marital status were not statistically significant in determining the household food access. Further, the results showed that the age of the household head, off-farm income and household size significantly influenced cash transfers. The results suggest that access to cash transfers had a positive impact on household food security. In conclusion, access to cash transfers was an important factor in achieving improved household food security and hence, this study recommends that the South African government and other donor organizations increase cash transfer programmes among poor households in rural areas in South Africa.

**Keywords:** Social cash transfer (SCTs); household food security; HFIAS, Endogenous Switching Poisson model

## 4.1 Introduction

It is estimated that over 690 million people around the world went hungry in 2019 and the COVID-19 pandemic is intensifying the vulnerabilities and inadequacies of global food systems (Moseley and Battersby, 2020). The problem of food insecurity has become a major challenge to policymakers globally (Sasson, 2012; Wheeler and Von Braun, 2013). Ensuring that millions of households living in poverty have access to enough food to maintain a healthy life is the major challenge facing the world today (Fan and Brzeska, 2016). Increasing food production and reducing food insecurity amid rising population and climate change continues to be a major challenge for policymakers in developing countries where many people are experiencing micronutrient deficiencies and extreme poverty (Babatunde and Qaim, 2010). Nevertheless, food insecurity issues are a global phenomenon and manifested in different ways across nations and regions (Pérez-Escamilla *et al.*, 2017; Mat and Othman, 2017). Food insecurity in sub-Saharan Africa (SSA) has worsened over time due to increasing population growth and rising poverty levels (Hall *et al.*, 2017). The food insecurity issue in SSA is exacerbated, to an extent, by the fact that the majority of the population reside in rural areas and depend on small-scale, rain-fed agriculture for their livelihoods (Masipa, 2017).

Smallholder farmers are making a significant contribution to the agricultural sector in SSA but their capacity to produce is inhibited by the inability of the households to access productive resources, capital and very limited effective technologies to enhance food production in the region (Motsoari *et al.*, 2015). South Africa is considered as one of the most advanced nations in SSA, however, the issue of household food insecurity persists within the country (Battersby, 2011; Maziya *et al.*, 2017). Household-level food insecurity is a major challenge to the South African government (Maziya *et al.*, 2017). Food insecurity in South Africa is due to limited access to food, because of structural poverty and inequality dynamics with a strong racial footprint rather than a shortage of food (Manyamba *et al.*, 2012; d'Agostino *et al.*, 2018). Scarce employment opportunities (especially in rural areas), the rising cost of living, very limited investment in agricultural development, increase in informal settlements, and high dependency ratios especially in low-income households are some of the factors contributing to food insecurity in South Africa (Altman and Ngandu, 2010; Ngema *et al.*, 2018; Chisasa, 2019). Agriculture, which is very important for ensuring food security in South Africa, contributes approximately 4% to the gross domestic product (GDP) of South Africa (Mugambiwa and Tirivangasi, 2017).

Commercial farmers who can produce on large scale and enjoy economies of scale dominate the agricultural sector in South Africa, however, the contribution of the agricultural sector to the GDP is very low relative to other sectors in the economy. Even though commercial farmers dominate the market, South Africa remains a net importer of most agricultural products (Nyam *et al.*, 2020). The growing demand for agricultural products due to population growth and lifestyle changes presents a great opportunity for integrating smallholder farmers in the agricultural value chain to close the gap between demand and supply (Molotsi *et al.*, 2017). The inability of smallholder farmers to exploit the full potential is due to limited capital, inadequate infrastructure, poor farm management skills, inadequate farm resources, as well as scarce productive resources (Rege *et al.*, 2011). Access to productive resources and capital such as cash transfers are some of the ways of enhancing smallholder agriculture and food security in South Africa. Access to funds to purchase farm inputs, capital equipment, and improved technology can significantly increase the productivity of smallholder farmers (Chenaa *et al.*, 2018).

Cash transfers are a policy instrument that can help build household resilience in obtaining access to food (Bhalla *et al.*, 2018). Due to their flexibility in use and the latitude, cash transfers give recipient households access to cash to improve their household welfare and improve their standards of living (Miller *et al.*, 2011; Haushofer and Shapiro, 2016). There is increasing debate and interest in understanding the impact of social cash transfers (SCTs) on the improvement of household food security in developing countries, especially relating to their improving their agricultural activities (Davis *et al.*, 2016). Enhancing agricultural production, alleviating poverty and increasing food consumption in rural communities are primary objectives of social cash transfer programmes (Alinovi *et al.*, 2009). The inability of households to access productive resources in rural areas, who depend on agriculture for their livelihood, can have serious implications for their agricultural productivity and the welfare of the households. The SCT programmes can improve the food security status of lower-income households through increases in agricultural productivity (Devereux, 2016; Burchi *et al.*, 2018). They are key in fighting hunger and poverty in less developed countries (Burchi *et al.*, 2016). Previous studies have emphasized the need for resilient community engagement, putting particular emphasis on socially and economically marginalised population groups such as the elderly, children, households that have no income, and the disabled (Bonilla *et al.*, 2017; Tonguet-Papucci *et al.*, 2017). Moreover, they ensure that vulnerable households and individuals are uplifted out of poverty and improve their food security status.

The available literature suggests that cash transfer donors were still in most cases questioning the effect of cash transfer programmes on household food security in Africa (Farrington and Slater, 2006; Standing, 2008; Manley *et al.*, 2012; Molyneux *et al.*, 2016). Furthermore, debates regarding social cash transfer programmes in South Africa are often limited to design response strategies, technical aspects of the program, and how the cash was used (Pettifor *et al.*, 2016; Torkelson, 2020). Similarly, such discussions tend to focus on the delivery mechanism used, as well as its cost-effectiveness rather than the impact on household food security. As a result, the effect of social cash transfer programmes in South Africa on household food security is not fully understood. The SCTs provide low-income households in South Africa with funds to improve their livelihoods but do not necessarily address the root causes of poverty and food insecurity in those households (d'Agostino *et al.*, 2018).

It remains unclear whether cash transfers enable low-income households, where formal jobs are scarce and poverty is high, to improve their household food security. Several studies were done in Africa to examine the effect of cash transfers programmes on household food security with varying results obtained (e.g. Devereux, 2007; Miller *et al.*, 2011; Seidenfeld *et al.*, 2014; Tiwari *et al.*, 2016; Bhalla *et al.*, 2018). Tiwari *et al.* (2016) examined cash transfer programmes in four SSA countries and found mixed results. The study found that Zambia had a relatively high transfer level and predictable transfers, therefore, the programme largely impacted positively on household food security. On the other hand, the livelihood empowerment against poverty (LEAP) program in Ghana had low transfer levels and unpredictable transfers, and therefore had no impact on household food security.

Bhalla *et al.* (2018) found that the harmonized social cash transfer (HSCT) programme had a positive impact on household food security in Zimbabwe. Seidenfeld *et al.* (2014) found that cash transfers improved household food security in Zambia. In South Africa, von Fintel and Pienaar (2016) examined the impact of unconditional cash transfers on smallholder farming and food security in South Africa using fuzzy regression discontinuity design. The study found that unconditional cash transfers improve food security. Furthermore, d'Agostino *et al.* (2018) used a fuzzy regression discontinuity design to examine the effect of cash transfers on household food security. The study found that the cash transfer programme did not significantly improve the household food security status of the beneficiaries. Important as these findings may be, no study has attempted to examine the impact of cash transfers on household food security in South Africa, while correcting for both endogeneity and selectivity biases in the analysis. Therefore, the current investigation fills this gap by estimating the determinants of cash transfers and their impact on

household food security in South Africa using an Endogenous Poisson model while correcting for both endogeneity and selectivity biases.

## 4.2 Household food security measurement and theoretical framework

This section presents the household food security measurement and the theoretical model on which the study is hinged.

### 4.2.1 Food insecurity indicators

The food security data of the farming household was assessed using the Household Food Insecurity Access Scale (HFIAS). The HFIAS is a food insecurity indicator that was developed by the United States Agency for International Development (USAID) in the Food and Nutrition Technical Assistance (FANTA) Project (Maziya *et al.*, 2017). According to Coates *et al.*, (2007), the HFIAS measures the degree of food insecurity (access) in the past 30 days. The HFIAS score was calculated for each household by adding the coded frequency for each of the nine occurrence questions relating to household-level food access. Each of the nine questions has a maximum score of 3 and when summed have and a maximum of 27 and a minimum score of 0. The higher the HFIAS score of a household, the more food insecurity is experienced, and the lower the score, the household is more food secure (Coates *et al.*, 2007). The choice of the HFIAS instrument was motivated by studies of Kirkland *et al.*, (2011); Taylor *et al.*, (2011); De cock *et al.*, (2013) and Maziya *et al.*, (2017) who used the tool in their studies in South Africa. Furthermore, this study used the Household Food Insecurity Access Prevalence (HFIAP) to categorize the households into four types of household food insecurity. The four types were namely, food secure, mildly food insecure, moderately food insecure, and severely food insecure.

### 4.2.2. Theoretical model

The methodological approach to the study draws inspiration from Terza (1998); Miranda (2004) and Donkoh (2020). Following Terza (1998), given the  $i_{th}$  farmer from a random sample. Consider the  $i_{th}$  individual from a random sample  $H = \{1, \dots, n\}$ . Conditional on a vector of explanatory variables  $x_i$ , an endogenous dummy  $G_i$ , and a random term  $\beta_i$ , the dependent variable  $FS_i$ —which is a count—is supposed to follow a standard Poisson distribution:



$$f(FS_i / \Upsilon_i) = \frac{\exp\{-\exp(x_i'\beta + \alpha G_i + \Upsilon_i)\} \{\exp(x_i'\beta + \alpha G_i + \Upsilon_i)\}^{FS_i}}{FS_i!} \quad (1)$$

The random term  $\Upsilon_i$  is commonly interpreted as a variable that summarizes omitted and unobserved variables. In some contexts,  $\Upsilon_i$  can be also interpreted as a measurement error. Given a vector of explanatory variables  $z_i$  (which may contain some or all elements of  $x_i$ ),  $G_i$  is characterized by an index process as follows:

$$G_i = 1 \text{ if } z_i'\theta + v_i > 0 \text{ and } 0 \text{ if otherwise} \quad (2)$$

Where  $\theta$  is a vector of coefficients to be estimated. Let  $w_i$  represent all exogenous variables, and suppose that  $\Upsilon_i$  and  $v_i$  are jointly normal with mean zero and covariance matrix:

$$\Sigma = \begin{pmatrix} \sigma^2 & \sigma\rho \\ \sigma\rho & 1 \end{pmatrix}$$

Conditional on  $\Upsilon_i$ ,  $G_i$  and  $FS_i$  are independent. Hence, the joint conditional probability density function of  $FS_i$  and  $G_i$ , given  $w_i$ , can be written as:

$$f(FS_i, G_i | w_i) = \int_{-\infty}^{\infty} \left\{ G_i f(FS_i | C = 1, w_i, \Upsilon_i) \Pr(G_i = 1 | w_i, \Upsilon_i) + (1 - G_i) f(FS_i | G = 0, w_i, \Upsilon_i) \Pr(G_i = 0 | w_i, \Upsilon_i) \right\} f(\Upsilon_i) d\Upsilon_i \quad (3)$$

#### 4.2.3. Empirical Model

As depicted in the theoretical equation 1 and given the objectives of the study, namely, to estimate the determinants of access to cash transfer; and to analyse the impact of cash transfer on household food security, there are two equations to be estimated; cash transfer and household food security equations, and therefore two dependent variables. Since cash transfer drive is assumed to influence household food security equations, the latter equation may be said to be the substantive equation and the former the selection equation in a recursive framework (i.e. cash transfer influenced household food security but not the other way round).

Thus, given equation 1, the dependent variable  $FS_i$  of this study is the household food security score generated from HFIAS. It is a count variable, and therefore, follows the Poisson distribution. This is hypothesised to be determined by cash transfer  $G_i$  as well as some farm and farmer characteristics and institutional variables  $x_i$ .  $G_i$  is also influenced by some farm and farmer characteristics as well as institutional variables, which, for the purposes of distinction are represented by  $z_i$ . Clearly, there may be some unobserved variables that determine both and such that if we estimate the equations for the two variables separately, we may not be able to measure the true effect of and other variables on  $FS_i$ . For example, access to information, on the part of a farmer may lead him/her to have access to cash transfer.

Similarly, this quality may influence his/her household food security status in a positive way. In this case, it becomes difficult to separate the effect of the farmer's access to information on his/her food security status from the effect of cash transfer on his/her food security status. In other words, if per chance, after the estimation of the two equations separately, we find that cash transfer has impacted significantly on food security, how do we know whether it is the farmers' access to cash transfer that is responsible? Terza's (1998) model offers a solution like that of Heckman's (1979) treatment effect model that corrects for selectivity bias problems in some simultaneous equation models. It should, however, be noted that it is not automatic that there is endogeneity between food security status and access to cash transfer. Miranda (2004) has given a good illustration of the test that shows whether the selection variable (cash transfer in this study) is endogenous or exogenous. Either way, Miranda (2004) suggested estimation packages that are similar but not exactly.

For this study, the endogenous switching poisson model was employed to analyse the determinants of cash transfer and its impact on household food security in the study area. The endogenous switching poisson model was appropriate because it corrects for selectivity bias and endogeneity problems that may arise as a result of some observed and unobserved factors that may influence both cash transfer and household food security (Donkoh, 2020). Two equations were estimated to correct the effect of bias in the data because the sample may suffer from selection bias and that Ordinary Least Square (OLS) estimation would result in biased estimates (Lin *et al.*, 2019). The first equation assumed endogeneity of the access to cash transfer variable while the second equation assumed exogenous cash transfer variable.

#### **4.2.4 Sampling and data collection**

The target population included agriculture-based households that may or may not be beneficiaries of SCTs. To ensure the population is well represented, this study employed a stratified random sampling method when selecting research participants from a presumed homogeneous population of households in the Richmond Local Municipality. The stratified sampling procedure divides the population into smaller groups, or strata, based on common characteristics (Alvi, 2016). In this case, locations formed the main strata for sampling. Participants in the study were identified with the assistance of the local key informants from the Richmond area. A total sample of 108 households participated in the study.

The study employed a quantitative research approach as it primarily aimed at identifying relationships between variables. This method makes use of closed-ended questions and analysis is quantified to deduce data into numbers that can be analysed using statistical procedures. This allows for comparisons of answers between respondents as they are all asked identical questions (Crossman, 2014). In this study, the use of a quantitative method helps to identify the influence of SCTs on rural households' agricultural production and food security situation. Although a qualitative method delimits the opportunity of obtaining an in-depth qualitative analysis of data, it often maximises the resources and is time-consuming when collecting and analysing data, unlike the qualitative research method.

### **4.3 Results and discussion**

#### **4.3.1 Socio-economic characteristics**

Descriptive statistics depicted average values and proportions of smallholder households' characteristics related to demographic and social-economic factors of sampled households as a basis of understanding the population under analysis. Chitja (2012), Hart and Aliber (2012) and Thamaga-Chitja and Morajele (2014) asserted that women are the biggest role players in smallholder agriculture, particularly in the SSA region. This study attests to this as females make up the majority of the sample size at 81.5% and males at 18.5% (Table 3). Njobe and Kaaria (2015) noted that it is well-acknowledged that women play a pivotal role in ensuring household food security as they constitute about 60-70% of smallholders in developing countries. Thus, they are deemed responsible for most of the productive activities in farming and in the household as informed by the perceived cultural role of women's work, as highlighted by Thamaga-Chitja (2012).

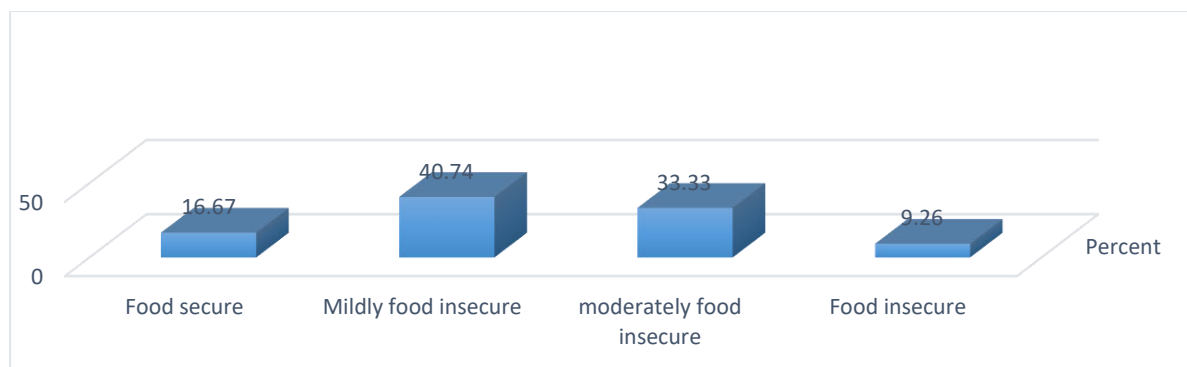
**Table 3: Demographics and socio-economic characteristics of sample households**

Variable code	Variable name and description		Proportion (%)
<i>GENDER</i>	Member gender	1=Male	18.5
		0=Female	81.5
<i>MARITSTAT</i>	Member marital status	1=Single	45.4
		2=Married	40.7
<i>SCT</i>	Access to social cash transfer	Yes	92.6
<i>MAININCSCT</i>	Social cash transfer is main household income	Yes	69.4
<i>FARMINC</i>	Household income from farming	Yes	59.3
<i>SCTAGRIC</i>	Use social cash transfers for agricultural activities	Yes	71.6

The results in Table 3 demonstrate that the sample households have big families as the average household size is 7.45. This household size is almost double than the average size of 3.8 from the 2016 Community Survey by Statistics South Africa (2016) for the KZN province. The observed increase in household sizes is in concurrence with the predictions of global population increases. In terms of income, 92% of the households are recipients of SCTs and these transfers are the main source of income for 69.4%. This depicts the high reliance on SCTs by rural households as also found by the 2011 census (Stats SA, 2012).

#### **4.3.2 The distribution of household food security status of the farmers**

The Household Food Insecurity Scale ranged from 0-26. The higher scores indicated a higher level of food insecurity (access) the sampled households experienced, while the lower score are indicative of the less food insecurity (food access) the households experienced. The results in Figure 3 show the food (in)security situation as determined by HFIAS prevalence. The results indicated that 16.67% of the sampled farmers were food secure, 40.74% were mildly food insecure, 33.33% were moderately food insecure and 9.26% were severely food insecure. The average HFIAS score of the households was 7.21, depicting that the majority of sampled farmers were food secure because a high score indicates that households are food insecure (De cock *et al.*, 2013).



**Figure 2: Household food (in)security situation.**

#### 4.3.3 Impact of access to cash transfer on household food security

Ensuring food security while sustaining livelihoods for all has become of prime importance to policymakers globally. The results of the impact of SCTs on household food security is as presented in Table 4. The estimation results show a significant rho and sigma at 1%, implying that access to SCTs and household food security are correlated and that the data was also over-dispersed and justifies the use of endogenous switching Poisson model. It can be hypothesized that the endogenous variables are capable of explaining the correlation between access to SCTs and household food security variables. For brevity, the results of the full information maximum likelihood (FIML) Endogenous Switching Poisson model is discussed.

**Table 4: FIML estimates of the endogenous switching poisson model for the determinants of access to cash transfer and its impact on household food security**

Household food insecurity status	ENDOGENOUS SWITCHING			EXOGENOUS SWITCHING POISSON		
	Coef.	S. Error	P-value	Coef.	S.Error	P-value
Access to cash transfer	-0.545	0.173	0.002***	-0.438	0.258	0.089*
Gender of Household head	-0.349	0.174	0.045**	0.139	0.244	0.569
Age of Household head	0.046	0.006	0.000***	0.036	0.007	0.000***
Household Size	0.090	0.019	0.000***	0.072	0.023	0.002***
Education Household Head	0.249	0.151	0.100	0.261	0.193	0.176
Access to Credit	-0.404	0.183	0.028**	0.509	-0.231	0.027**
Access to FBO	-0.654	0.322	0.042**	0.519	0.354	0.143
Marital status	0.159	0.072	0.027**	0.103	0.078	0.188
Access to Cooperative	-0.920	0.277	0.001***	0.725	-0.266	0.006***
Agricultural training Access	-0.562	0.179	0.002***	0.498	-0.190	0.009***
Constant	6.535	1.531	0.000***	-5.123	1.467	0.000***
<b>Switch (Cash transfer)</b>						
Age of Household head	0.055	0.013	0.000***	0.050	0.027	0.064*
Access to Credit	-0.369	0.308	0.231	-1.773	0.854	0.038**
Education Household Head	0.111	0.279	0.691	0.836	0.780	0.284
Off-farm income	-1.835	0.964	0.057*	-1.809	1.051	0.085*
Household Size	0.164	0.088	0.062*	0.087	0.112	0.437
Marital status	-0.288	0.188	0.127	-0.134	0.392	0.733

Access to Cooperative	6.613	1236.86	0.996	4.347	226.10	0.985
Access to FBO	0.621	0.714	0.385	-0.414	1.274	0.746
Farming Experience of HH	0.005	0.014	0.737	-0.024	0.026	0.357
Access to irrigation facility	0.085	0.260	0.744	-0.072	0.812	0.930
Constant	-16.29	2473.72	0.995	-6.048	452.21	0.989
Sigma	0.955	0.111	0.000***	0.781	0.099	0.000***
Rho	0.973	0.033	0.000***			
Log likelihood	-161.7			-165.3		
Wald chi2(10)	71.09			1.87		
Prob > chi2	0.0000			0.0000		

\*\*\*, \*\* and \* represent significance level at 1%, 5% and 10%, respectively. FBO means Farm-Based Organization

The results in Table 4 show that all the variables except the education of household heads are significant at 1% and 5% levels of significance. The results of the endogenous model show that access to SCTs is negative and significant at 1% level of significance. This result was expected as access to SCTs will increase household welfare and reduce food insecurity. Previous studies have found a positive correlation between access to cash transfers and food security in Africa (Alderman, 2014; von Fintel and Pienaar, 2016; Burchi *et al.*, 2016; 2018).

The SCTs do not only alleviate current poverty but also reduce future poverty by encouraging investment(s) in agriculture, human capital, education, health and nutrition (Handa and Davis, 2006; Maluccio, 2010; Gertler *et al.*, 2012; Mohammadi-Nasrabadi, 2016). It should be noted that South Africa has not implemented any cash transfer programmes directly aimed at reducing food insecurity rather have implemented programmes aimed at reducing extreme poverty which is playing a huge role in reducing food insecurity (d'Agostino *et al.*, 2018). The SCT programme has successfully alleviated poverty and food insecurity in South Africa (von Fintel and Pienaar, 2016). The SCTs increase food security and the purchasing power of poor households, thereby increasing their capacity to purchase food and gain access to more good-quality food (Alderman, 2014; Burchi *et al.*, 2016; 2018).

The results also show that the gender of the household heads is negative and significant at 5% level of significance. This implies that food insecurity reduces when the head of the house is male compared to the female head of the house. This result is consistent with Bhalla *et al.* (2018) who found that female-headed households had on average a lower per capita food consumption compared to male-headed households. Men are exposed to more economic opportunities because of past racial policies which hinder women from furthering their studies and women are engaged in household chores which include child caring (Bhalla *et al.*, 2018). An increase in income in

male-headed households will increase the household's food security status (Debela and Abebe, 2017).

Furthermore, the positive coefficient of the age of the household head indicates that households with older members as the head are more likely to be food insecure relatively to households with young people as the head. This result could be explained by the fact that younger people are dynamic and more energetic and can easily seek off-farm employment to improve the livelihood of the household compared to older people. This result aligns with the study of Donkoh (2019) who found that younger farmers had a higher probability of adopting sustainable farming practices than older farmers, thus, increasing their productivity and household food security.

Similarly, the coefficient of household size is positive and significant at 1% level of significance. This implies that larger household sizes are likely to be food insecure than smaller household sizes. This result was expected because it is difficult to maintain a larger household than a smaller household especially for smallholder farmers who depend on agriculture for their livelihood. This finding is consistent with Awotide *et al.* (2015) who found that large household sizes reduce the productivity of cassava production in Ghana. Omonona and Okunmadewa (2009) found that large household size increases the level of poverty among the rural farming households in Nigeria.

The coefficient of access to credit is negative and significant at 5% level of significance. This indicates that farmers with access to credit are more food secure than farmers that are credit constrained. Farmers who have access to credit can buy farm inputs and expand their farming activities, which will increase their productivity and food security. This result was expected because in most cases, smallholder farmers do not have access to formal credit and this has been attributed as one of the reasons for their food insecurity (Lin *et al.*, 2019).

As access to credit, access to FBO is negative and significant at a 5% level of significance. This implies that farmers who belong to farm base organizations are more likely to be food secure relative to farmers who do not belong to a FBO. In most cases, FBOs assist their members with credit, farm inputs, training on-farm management and marketing. These are essential for improving the productivity of the farmers and their household food security. This result is consistent with the findings of Lemessa and Gemechu (2016) and Ojo and Baiyegunhi, (2020a). Access to cooperative and agricultural training is negative and significant at a 1% level of significance. This equally implies that farmers who belonged to farmers' cooperative unions and received agricultural training were more likely to be food secure.

The second section of the results presents the determinants of SCTs. The results show that the age of the household head, off-farm income and household size were significant, however, age and household size were positive and significant at 1% and 10% respectively. This result implies that older household heads had a higher probability of receiving cash transfers from donors relative to younger heads of households. It can be assumed from this result that the cash transfer is either an “old age grant” or “pension” granted to older members of the community. Likewise, larger household sizes had a higher probability of receiving cash transfers relatively to smaller household sizes.

Large household size increases the level of poverty in low-income areas and as a result, need social welfare programmes like SCTs to improve their livelihoods. Off-farm income was negative and significant at a 10% level of significance. The implication of this is that households that earn off-farm incomes are better off compared to households that depend largely on farming for their livelihood. The result resonates with that of Ojo and Baiyegunhi, (2020b); Babatunde and Qaim (2010) and Mathenge and Tschirley (2015) who found a positive correlation between off-farm income and food security and nutrition in Nigeria and Kenya, respectively.

#### **4.4 Conclusion and recommendations**

Improving the capacity of low-income households in South Africa can increase household food security and agricultural productivity, which is an important policy goal of the government. Increasing access to SCTs will reduce poverty and inequality in the economy and empower low-income households. In this study, an Endogenous Switching Poisson model was adopted to account for both endogeneity and sample selection issues while examining the impact of access to cash transfers on household food security in rural South Africa. The results show that access to SCTs, gender of household head, access to credit, access to FBO, access to cooperative, agricultural training were statistically significant in determining the household food security.

Moreover, the age of the household head, household size and marital status were statistically significant in determining the household food security. Furthermore, the result shows that the age of the household head, off-farm income and household size significantly influenced SCTs. Age and household size were positively and statistically significant in determining household cash transfers while off-farm income significantly influenced cash transfer negatively. This suggests that access to cash transfers has a positive impact on household food security.



In conclusion, access to cash transfers is an important factor in achieving improved household food security and hence, this study recommends the South African government and other donor organizations to increase cash transfer programmes and the value of these programmes among poor households in rural areas in South Africa.

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## **CHAPTER 5: FACTORS INFLUENCING ACCESS TO SOCIAL CASH TRANSFERS AMONG SMALLHOLDER FARMERS IN INHAZUKA AREA, RICHMOND IN KWAZULU-NATAL, SOUTH AFRICA**

### **Abstract**

The investigation examines the determinants of social cash transfers (SCTs) in rural communities of South Africa. A total of 108 households were sampled for analysis using the Logistic Regression model. The model assessed various socio-economic factors that could influence SCTs. Empirical results indicated that the age and gender of the household head, education level, involvement in social networks and access to loans had significant influence. Age and gender of the household head positively influenced social cash transfer programs by using both the odd ratio and marginal models. The marginal model however reflects contrasting results for the gender of the household head as SCTs favour male-headed households over female-headed households. The study further presents contradictory results, indicating a positive and significant influence of educational level and access to credit on access to SCTs. These factors are highly unlikely to be associated with poverty and food insecurity as higher education levels increase employability and having access to credit implies having higher incomes and collaterals. The results of this study indicate that to alleviate extreme poverty, inequality, food insecurity and malnutrition in rural areas, it is important to promote factors that increase access to SCTs to all target beneficiaries as well as eliminate bias access to SCTs.

**Keywords:** Social cash transfers (SCTs), socio-economic factors, Logistic Regression model, household head

## 5.1 Introduction

Policymakers in developing countries have, for decades, tried to develop and implement policies to tackle issues such as rapid population growth, climate change, poverty and inequality, food insecurity and malnutrition which are wreaking havoc in most communities in Sub-Saharan Africa (SSA), especially among the rural poor (Koning, 2017; Tumushabe, 2018; Leal Filho *et al.*, 2019; Nyam *et al.*, 2020). To reduce poverty, inequality, and food insecurity among the rural poor, several programmes have been developed and implemented to empower the rural poor and boost rural economies (Wegenast and Beck, 2020). Social cash transfers (SCTs) are one of the programmes that have gained prominence in boosting livelihoods in rural communities. SCTs are frequently used as a key tool in fighting the threats of extreme poverty, hunger, food insecurity, and inequality (Handa *et al.*, 2012; Garcia and Moore, 2012).

It is estimated that developing countries allocate approximately 2% of their gross domestic product (GDP) on cash transfer programs, which form an important income source for poor households in rural communities (Dou *et al.*, 2017). SCTs can be defined as the provision of cash assistance through social programs such as an old-age pension, child support programs, unemployment grants, and agricultural subsidies to alleviate poverty and inequality in rural communities (Patel, 2012). Cash transfer programs are aimed at enhancing the livelihoods and income of rural poor and increasing their capacity to contribute to nation-building. Several studies have found a positive correlation between social cash transfer programmes and poverty alleviation (Dollery *et al.*, 2015; Azam *et al.*, 2016; Aker *et al.*, 2016; Tiwari *et al.*, 2016; Waziri *et al.*, 2020).

Past studies of social cash transfer programmes focused more on the effectiveness of cash from such programmes and their impact on the mental health of recipients (Kilburn *et al.*, 2016; Handa *et al.*, 2016; Pettifor *et al.*, 2016; Hjelm *et al.*, 2017), anti-poverty programmes (Aker *et al.*, 2016; Rodríguez *et al.*, 2016; Waziri *et al.*, 2020), food security and nutrition (Tiwari *et al.*, 2016; Brugh *et al.*, 2018). As impactful as these studies are, they typically use household panel data to evaluate the impact of social cash transfer programs on specific aspects of household welfare. These studies examine the effectiveness of such programs in achieving their stated objectives, however, these studies hardly examine the factors influencing social cash transfer programmes and how these programs affect the livelihoods and household poverty levels of rural communities.

In this study, we examine the impact of SCTs on the livelihood of rural communities in South Africa but determine the factors influencing social cash transfer programs. Several household-level variables were used in the analysis to determine the factors that influence social cash transfers

programs. This will inform policymakers at public and private levels to design these programs to target the needs of these vulnerable communities.

## 5.2 Conceptual and empirical framework

In this study, a Logistic Regression model was used to determine the factors influencing social cash transfer programs among smallholder farmers. A Logistic Regression model was used to examine the influence of several socio-economic factors on SCTs. The model examined the influence of various socio-economic (independent) variables on the dependent variable, social cash transfer programs. Cash transfer receipt was modelled as a binary response variable where 1 = received cash transfer and 0 = did not receive cash transfer. Logistic Regression is a multivariate regression and permits an analysis where several independent variables forecast a dependent variable in the presence or absence of an outcome based on the values of a set of predictor variables. The main advantage of Logistic Regression is the usability with each type of variable. For example, variables may be either continuous or discrete, or any combination of both types and there is no need to have normal distributions (Lee, 2005). By nature, Logistic Regression analysis is not affected by dependent and independent variables being qualitative, quantitative or categorical. Therefore, Logistic Regression is beneficial to the researches for the interpretation of binary and categorical data, especially (Agresti, 1996).

Since the dependent and independent variables are qualitative, we use Logistics Regression analysis. In the case of Logistic Regression, it is assumed that the dependent variable is dichotomous or binary, i.e,  $Y_i = 0$  or  $1$  for all  $i = 1, \dots, n$ . The regression model using the logistic function has the following form:

$$pi = \frac{\exp(\beta_0 + \beta_1 X_i)}{1 + \exp(\beta_0 + \beta_1 X_i)} \quad (1)$$

Where,  $\beta_0$  and  $\beta_1$  are model parameters;  $X_i$  are independent variables that can be both qualitative and quantitative; and  $pi$  is the probability that  $Y = 1$ . After linearization of the equation, we obtain,

$$\frac{pi}{1 - pi} = \exp(\beta_0 + \beta_1 X_1) \quad (2)$$

In this case  $\frac{p_i}{1-p_i}$  is called odds, and the log odds function is called logit. The form of the logit-based model is as follows:

$$p_i' = \ln\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_1 X_i \quad (3)$$

Odds are defined as the ratio of the likelihood of an event of occurring to the probability of an event not occurring. Since the logistic function is nonlinear, the direction coefficient  $\beta_i$  represents the change in logit caused by the change of X by one unit. In the context of odds, the interpretation of the directional coefficient is as follows: for X variable having a continuous value,  $\exp(\beta_i)$  is an increase in odds that Y = 1 for each unit of growth of X variable; for X variable having the dichotomous value,  $\exp(\beta_i)$  is an increase in the odds that Y = 1, when X = 1 in relation to the situation when X = 0.

### 5.3 Results and discussion

Descriptive statistics depicted average values and proportions of smallholder households characteristics related to demographic and social-economic factors of samples households as a basis of understanding the population under analysis. Chitja (2012), Hart and Aliber (2012) and Thamaga-Chitja and Morajele (2014) asserted that woman are the biggest role players in smallholder agriculture particularly in the SSA region. This study attests to this as females make up the majority of the sample size at 81.5% and males at 18.5% (Table 5). Njobe (2015) noted that women are well-acknowledged that they play a pivotal role in ensuring household food security as they constitute about 60-70% of smallholders in developing countries. Thus they are deemed responsible for most of the productive activities in farming and in the household as informed by the perceived cultural role of women's work, Chitja (2012) highlighted.

**Table 5:** Demographics and socio-economic characteristics of sample households

<i>Variable code</i>	<i>Variable name and description</i>		<i>Proportion (%)</i>
<i>GENDER</i>	Member gender	1=Male	18.5
		0=Female	81.5
<i>MARITSTAT</i>	Member marital status	1=Single	45.4
		2=Married	40.7
<i>SCT</i>	Access to social cash transfer	Yes	92.6

<i>MAININC</i> <i>SCT</i>	Social cash transfer is main household income	Yes	69.4
<i>FARMINC</i>	Household income from farming	Yes	59.3
<i>SCTAGRIC</i>	Use social cash transfers for agricultural activities	Yes	71.6

Results demonstrate that the sample households have bigger families as the average household size is 7.45. This household size is almost double the average size of 3.8 from the 2016 Community Survey by Stats SA (2016) for the KwaZulu-Natal (KZN) province. The attribution to the rise of household sizes is in concurrence with the predictions of global population increases. In terms of income, 92% of the households are recipients of SCTs and are the main source of income for 69.4%. This depicts the high reliance on SCTs by rural households as also found by the 2011 census (Stats SA, 2012).

**Table 6:** Factors influencing access to social cash transfer: Logistic Regression model

A141Recipients SCTs	Odd ratio	St.Err.	P-value	Margins	St.Err.	P-value
Age	4.416	3.821	0.086*	0.141	0.082	0.094*
A112Member_gender	0.064	0.089	0.049**	-0.282	0.162	0.089*
A115aHH_size	0.891	0.137	0.455	-0.020	0.017	0.268
A122Edu_level	54.414	78.449	0.006**	0.427	0.126	0.001***
D412Buy equipSCT	0.545	0.502	0.510	-0.112	0.116	0.338
E522Inv_Soc_ntwk	0.131	0.141	0.058*	-0.253	0.139	0.077*
divorced	0.335	0.365	0.315	-0.152	0.124	0.226
E53Obtain_Loan	0.010	0.015	0.002***	-0.479	0.134	0.001***
E525aInv_farmAs	6.938	12.464	0.281	0.265	0.202	0.196
Single	0.472	0.461	0.442	-0.075	0.119	0.533
Constant	188.887	807.834	0.220			
Mean dependent var	0.691					
Pseudo r-squared	0.444					
Chi-square	30.233					
Akaike crit. (AIC)	59.788					
Bayesian crit. (BIC)	81.869					
Prob > chi2	0.001					

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Different types of cash transfer policies exist and the need for such programmes is influenced by supply-side and demand-side factors, and the socio-economic status of the population (Mango *et al.*, 2014). Household socio-economic characteristics are important for determining household status and suitability for cash transfer programmes. Cash transfer recipients are often households in rural communities who are vulnerable to poverty, inequality and food insecurity.

In the current investigation, the Logistic Regression model examined the influence of various socio-economic (independent) variables on the dependent variable, social cash transfer programmes. Cash transfer receipt was modelled as a binary response variable where 1 = received cash transfer and 0 = did not receive cash transfer. The socio-economic variables found to have a significant influence on social cash transfer both at odd ratings and margins model include the age of the household head, gender of the household head, educational level, involvement in social networks, and access to loans. The results are presented in Table 6.

The age of the household head is a crucial factor in determining the household's economic status and needs. The results show that the age of the household head significantly influences access to SCTs in both the odd ratio and margins models. The result is positive and significant at a 10% level of significance. This result implies that the older the head of the household, the higher the odds of that household to receive SCTs. This means that if the age of the head of the household increases by 1 then their chances of receiving of SCTs increase by 9.4%. This result is consistent with the findings of (Dou *et al.*, 2017; Abdullah *et al.*, 2017) who found a positive influence between age, food security and cash transfers.

Gender of the household head is another factor that was found to significantly influence SCTs by a household. The results show that gender is positive and significant at a 5% level of significance. This means that the odds of the house receiving SCTs increase when the household is female and decreases when the household head is male in the odd ratio model. On the other hand, the marginal model shows that the odds of receiving social cash transfers decrease by 8.9% when the head of the house is female compared to males. Generally, in most rural communities, most women do not engage in economic activities thus making them vulnerable to poverty, inequality and food security. As such, this increases their chances of receiving cash transfers to help increase their household livelihoods. This result is consistent with Drysdale *et al.* (2021).

Educational level is measured by the number of years the head of the household attended formal education. The results show a positive and significant influence on educational level and SCTs. The odd-ratio and margins are positive (at 5% and 10% respectively) showing that household heads with higher educational levels are likely to get SCTs. This means that with an increase in educational level by 1 year, there is a 1% chance of receiving SCTs. This result was highly unexpected because household heads with higher educational levels are more likely to be employed and earn enough incomes enough to support their households. Education played a key role in household food security. The results show that the more educated the head of household is,

the more likely they will receive SCTs and vice versa. The results of this study are contrary to the findings of Sulaiman *et al.* (2016), Dou *et al.* (2017) and Hajdu *et al.* (2020).

Involvement in a social network or social society is a factor that positively influenced SCTs in this study. This means that heads of households that belong to a social network are more likely to receive cash transfers and vice versa (odd ratio = 0.131,  $P = 0.058$ ). This finding implies that heads of households who belong to social networks or associations easily receive information relating to such programmes and can easily organize themselves to receive cash transfers if they qualify. This means that the chances of receiving SCTs reduce by 7.7% when the household head doesn't belong to a social network. Furthermore, the results of this study show that access to credit has a positive influence on SCTs. The results are positive and significant at a 1% level of significance. This means that heads of households with access to credit are more likely to receive transfers and vice versa. The odds of receiving a social cash transfer reduces by 1% when the head of the household has no access to credit. These results were not expected because it is assumed that heads of households with access to credit have higher incomes and collaterals to access credit facilities and as such do not qualify for SCTs.

#### **5.4 Conclusion and policy recommendation**

This study aimed to identify and analyse factors influencing SCTs in rural communities in South Africa. As a result, the Logistic Regression model was applied in the analysis of these factors. The empirical results show that there are several factors influencing implementation such as age, gender, educational level of the household head, access to credit, and household heads that belonged to social networks that positively influence social cash transfer programmes. This implies that a change in any of these factors will greatly influence the implementation of cash transfer programmes. It is therefore important from the results of this study to promote the factors that increase the implementation of social cash transfer programmes and eliminate biases in access to SCTs to reduce extreme poverty, inequality, food insecurity and malnutrition in rural communities.

Social transfer programmes should target elderly people (old age), women (especially female head of households), the less educated group (to empower especially youths and young girls and boys) and those that were not financially included or lack access to credit. It is recommended that social cash transfer plans and programmes at public and private levels should be aimed at promoting and

improving financial inclusiveness, food security, education and training, capital for business development and agricultural productivity.



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## **CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS**

### **6.1 Summary of the study**

The household food security access scale (HFIAS) and the Endogenous Switching Poisson model were used to analyse the impacts of access to cash transfers on household food security and estimate the food security status of sampled households. The Logistic Regression model revealed that various socio-economic factors influence access to social cash transfers. Access to social cash transfers (SCTs) and household food security was found to be correlated as justified by the Endogenous Switching Poisson model.

The study investigated the contribution of SCTs to rural household agricultural production and food security. Social protection interventions played an integral role in reducing vulnerability and addressing the multifaceted dimensions of poverty. Social protection further contributed to improving the wellbeing of individuals and households in rural communities dependent on agriculture as a livelihood. Access to productive resources significantly enhanced the welfare of households and increased agricultural productivity. Government social protection and policy interventions need to be geared towards building capacity within low-income households. This would lead to better household food security and increased agricultural productivity in rural communities.

Investigating the state of food in/security within social grants beneficiary households, in particular, was significant to the overall purpose of the study. The study revealed that social grants had a positive impact on household income. The impact of SCTs on the livelihoods of rural communities in South Africa and the determining factors that influenced social cash transfer programmes was examined. A large share of household income was comprised of social grants and this highlighted that grants were integral in assisting individuals and households to cope with food insecurity. Other household-level variables used to determine factors that positively and negatively influenced social cash transfer programmes reaffirmed their significant impact in assisting households to cope with shocks and stresses.

Furthermore, increased access to cash transfer, access to credit, access to the farm-based organisation, access to cooperative and agricultural training was significant and influenced the household food security status. In terms of the gender of the household head, results indicated that gender significantly influenced SCTs and showed a positive correlation. Other factors such as the

age of household head, household size and marital status were also statistically significant in determining the household food security. Gender aggregated data deduced from the marginal model showed that the odds of receiving SCTs decreased when the head of the household is female compared to males.

In addition, increased access to SCTs or social grants was an important factor in achieving improved household food security. This study recommends that the South African government and other donor organizations prioritize social cash transfer programs among poor households in rural areas in South Africa to aid household food security. Increased implementation of social transfer programs also potentially reduces extreme poverty, inequality, food insecurity and malnutrition in rural areas, and low-income agriculture-based communities.

### **6.3 Conclusion**

The study revealed that SCTs contribute immensely to reducing household food insecurity among vulnerable households as results depicted that access to SCTs and household food insecurity are negatively correlated. These results were expected as having access to SCTs implies an improvement in purchasing power of food items by recipient households, thus improving food security. These findings resonate with previous studies that found a positive correlation between access to SCTs and food security in South Africa. The improved capacity of the recipient household's purchasing power further encourages investment in other productive livelihood aspects such as agricultural activities, educational and health needs. In the South African context, the current social grant programme is not directly aimed at improving food security but geared towards alleviating poverty however the study has revealed that it addresses multi-dimensional aspects towards addressing poverty.

Results of the study further showed that the gender of the household head is significant and negatively correlated, favouring the male-headed household, although female-headed households are more vulnerable to food insecurity. Thus, many studies emphasize the importance of targeting women in programmes that address food insecurity and other livelihood improvement outcomes as men are likely to have opportunities in the job market. Women should therefore be central in interventions that address food security and other livelihood improvement outcomes.

In conclusion, although SCTs contribute to improving household food security, they are not adequate to graduate households out of food insecurity and poverty as they remain vulnerable in times of adverse livelihood shocks. The susceptibility towards adverse livelihood shocks may lead households to employ coping strategies to survive. This, therefore, suggests that social cash transfer programmes should be comprehensive in their reach and be complemented by various other livelihood enhancing development programmes.

#### **6.4 Recommendations for policy implications**

Food security interventions should be implemented in a manner that acknowledges the diverse development challenges in South Africa. The South African Social Security Agency (SASSA) needs to invest in food security capacity-building and realign its social protection policies to acknowledge and combat food insecurity, in conjunction with alleviating poverty and vulnerability. Enhancing the capacity of rural households through increased access to social grants potentially reduces household food insecurity and vulnerability. It is recommended that social cash transfer plans and programs at public and private levels should be aimed at promoting and improving financial inclusiveness, food security, education and training, capital for business development and agricultural productivity.

Social protection programmes should target elderly people, women, the less educated group, the financially excluded and those that lack access to credit. Improved financial inclusion, access to education and training, access to credit and agricultural inputs solves the challenges of food insecurity. Rural communities should be prioritised and encouraged to become self-reliant and resilient against exposure of adopting severe coping strategies to improve their household food security status.

Furthermore, developmental programmes should not be implemented in isolation from each other, particularly those targeting the poor and vulnerable population. Complementary interventions that enhance livelihoods should be synergistic in an implementation where multi-dimensional approaches are undertaken to achieve developmental goals and a greater impact towards sustainable livelihoods. This implication applies to public and private sectors to harmonize their developmental programs to achieve this.

## **6.5 Limitations of the study and suggestions for further research**

### **6.5.1 Limitations of the study**

The greatest limitation of the study is that it cannot be generalised across the population of South Africa as, 1) the sample size was too small to be representative of a greater population and 2) the livelihood strategies employed by households may differ between provinces and between areas. This study was only limited to the KwaZulu-Natal province, in the Richmond area. For future reference, a greater sample should be reached and gain an interprovincial reach for a more comprehensive outlook on the impact of SCTs. In a broader context, there are a number of social protection interventions that studies could focus on, however, this study only considered SCTs in particular. Another limitation is that the study did not provide an in-depth analysis of the actual agricultural production activities of social cash transfer recipients in contrast to non-recipients to differentiate the direct role of SCTs in agricultural production, similarly with food security.

### **6.5.2 Suggestions for further research**

This study focused on the contribution of SCTs to rural household agricultural production and food security. Research of a similar nature should extend its horizontal reach in sample size to gain a greater outlook of South Africa as a country and for generalisation of results. Other research areas that can be explored further include nutritional benefits from the adequacy of available food within poor households. Other factors can further explore how social protection interventions enhance households' resilience to climate change and other development challenges.



## ANNEXURES

### Annexure A: Consent Forms

**Isihloko socwaningo:** Investigating the contribution of social cash transfers on rural household agricultural production and food security (Ukucwaninga umthelela wemali yezibonelelo kwezolimo nesimo sesondlo ekhaya).

Igama lomfundi: Nomonde Leanda Mncube

Inombolo yomfundi: 211508734

Inombolo yocingo: 0764024006

Iziqu aziqukethe: Bachelor of Agriculture Honours

Iziqu azifundelayo: Master of Agriculture

Ngokuzithoba, ngiyacela ukuba ube ingxenye yocwaningo elenziwa yimi uNomonde Leanda Mncube ukugcwalisela izifundo zeziqu zeMasters engizifundela eNyuvesi yaKwaZulu-Natali ngaphansi komnyango wezolimo nezokuthuthukiswa kwezindawo zasemakhaya. Isizathu sokwenza lolucwaningo ukuba ngifunde kabanzi ngendlela abantu abaziphilisa ngayo ikakhulukazi ngezolimo. Uma ufisa ukuba yingxenye yalolucwaningo sizoba nengxoxo ezobe iholwa imibuzo ebuza umbono wakho ngesimo sasekhaya uma sibheke ezolimo, nokuthi sisizakala kanjani ekhaya ngokuba silime. Imibuzo izophinde ibuze ngosizo lwemali yezibonelelo uma ikhaya lakho lizithola.

Ngiaqinisekisa ukuba igama lakho kanye nezimpendulo zakho kuzoba imfihlo, kungasabalalaki noma ikanjani, ngaphandle kwemvume yakho. Uvumelekile futhi ukungazibandakanyi nalolucwaningo nanoma inini uma ngabe ufisa kubenjalo. Emuva kokukoleka yonke imibono kuzobhalwa umbiko ozokwethula lemibono, udluliselwe kuthisha ukuze awuhlale. Nawe uvumelekile ukucela ukubona umbiko wemibono. Uma ufisa ukucaciselwa kabanzi ngalolucwaningo nokubandakanyeka kwakho, ungangishayela noma inini.

Mina \_\_\_\_\_ (igama nesbongo)  
ngiaqinisekisa ukuba ngiyazwisisa okuqukethwe ulombhalo kanye nocwaningo futhi ngiyavuma ukuba yingxenye yalolucwaningo.

Ngiyazwisisa ukuba ngivumelekile ukungazibandakanyi nalolucwaningo uma ngifisa kubenjalo.

Usuku: \_\_\_\_\_ Sayina: \_\_\_\_\_

## Annexure B: Questionnaire

**Topic:** Investigating the contribution of social cash transfers on household agricultural production and food security.

**Area:** Inhlazuka, Richmond, KwaZulu-Natal

### Section A: Household demographics

#### 1.1 Household head and number of household members

Is the member the household head?      1=Yes      2=No

Member gender	1=Male	2=Female
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Member age

The head is a, if not member	1=Male	2=Female
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Total household size	Males	Females
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#### 1.2 Please indicate the member's details (circle):

1.2.1 Marital status	1.2.2 Education level	1.2.3 Sources of income	1.2.4 Main source of income
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1=Single	1=None	1=Fulltime employment	1=Fulltime employment
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2=Married	2=Primary	2=Part-time employment	2=Part-time employment
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3=Divorced	3=Secondary	3=Social grants	3=Social grants
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4=Widowed	4=Tertiary	4=Farming	4=Farming
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5=Living with partner		5=Remittances	5=Remittances
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6=Own enterprise (eg. Spaza, hawking)	6=Non-agric enterprise (eg. Spaza, hawking)
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7=Other, specify	7=Other, specify
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1.3. How many of the household members are employed?

Fulltime employment

Part-time employment

#### 1.4 Please indicate the use of social cash transfers:

1.4.1 Does the household receive any type of social cash transfers?      1=Yes

2=No (If no, continue to Section B)

1.4.2 What type and how many social cash transfers does the household receive?	Old Age Grant	#
	Child Support Grant	#
	Disability Grant	#
	Foster Care Grant	#
	Care Dependency Grant	#

War Veterans Grant #

Grant In Aid #

1.4.3 Which year did the household start receiving any form of social cash transfers?

1.4.4 Do the social cash transfers contribute to buying agricultural inputs? 1= Yes How much in 2017 How much in 2018  
2= No

R R

1.4.5 Do the social cash transfers contribute towards education (fees, uniform, stationery, transport)? 1= Yes How much in 2017 How much in 2018  
2= No

R R

1.4.6 If yes in 1.4.5, whose educational needs does it pay for?

1.4.7 Do the social cash transfers contribute towards medical needs (medication, doctor's consultants, and transport to health facilities)? 1= Yes How much in 2017 How much in 2018  
2= No

R R

1.4.8 If yes in 1.4.7, whose medical needs does it pay for?

4.6 Please indicate the order of importance on the social cash transfers expenditure (1=most important, 5=least important)

**Item Ranking 1-5**

Food

Education

Health

Agriculture

Non-survival consumption items eg clothes, hygiene products

## Section B: Agricultural activities

2.1 Are you or your family members involved in any farming activities? (If no, continue to **Section F**)

1=Yes

2=No

2.1.1 If yes, how long have you been farming? \_\_\_\_\_

2.2 Does the household consume any of the produce?

1=Yes

2=No

2.3 Who in the household decides on the use of the produce (crops and livestock)?

1=Member

2=Partner

3=Joint effort (family)

2.4 What farming activities are practised by your household and the main purpose of the farming activities?

Farming activity	Tick	When it started (year)	Size of land (ha)/ livestock heads	Main purpose:	1= Main source of food 2= Main source of income 3= Extra source of food 4=Extra source of income 4= Hobby/leisure activity
				1= Household consumption only	
				2= Household consumption and selling	
				3= Selling only	

Vegetable production

Field crop production

Communal gardening/project

Livestock production

Cattle

Goats

Sheep

Pigs

Poultry

Other, specify:

Other, specify:

2.5 Which vegetable and field crops do you normally produce in winter and summer?

Winter crops \_\_\_\_\_

\_\_\_\_\_

Summer crops \_\_\_\_\_

\_\_\_\_\_

2.6.1 Is your crop production irrigated or rain-fed?

1=Irrigated

2=Rain-fed

2.6.2 If irrigated, does the household pay for the irrigation water?

1=Yes

2=No

2.6.3 If yes, do social cash transfers contribute to paying for water for household consumption (Drinking and washing)? 1=Yes  
2=No

2.7 Please indicate production practices currently made use of:

Type of production practices	Production practices	1=Yes	Reason for choice:	
		2=No	1=Available	2=Affordable
			3=Sustainable	4=Other, specify
Agro-ecological practices	Manual ploughing (eg, hand hoe)			
	Kraal/animal manure			
	Organic fertilizer (eg. Liquid manure, green manure)			
	Organic pest control			
	Wood ash			
	Manual weeding			
Conventional practices	Tractor ploughing			
	Fertilizer			
	Lime			
	Pesticides			
	Herbicides			
Agricultural techniques	Composting			
	Crop rotation			
	Intercropping			
	Companion planting			
	Seed saving			
	Seedling production			
	Mulching			
	Water conservation techniques			
	Soil conservation techniques			
	Conservation tillage techniques			

2.8.1 How much land is under production?

Own land	Rented land	Joint/shared land	Total land farmed
ha	ha	ha	ha

2.8.2.1 Do have plans on expanding land size:

Yes

No

If no, reason (please circle one):

1= I have enough planting land

2= I do not have access to land

3= I cannot afford to produce on more land than I currently have

4= I cannot work on more land (labour constrained)

5= Other, specify:

### Section C: Participation in the agro-value chain

3. Please indicate your engagement in the agro-value chain

3.1 Did you sell any produce in the 2017/2018 production season?

1=Yes

2=No

3.2 Who decides on the sale of the produce (crops and livestock)?

1=Member

2=Partner

3=Joint effort (family)

3.3 Where do you sell your produce? (Please circle most appropriate answer)

1= Retail stores (eg. Shoprite)

2= Fresh Produce Market

3= Sell to hawkers

4= Sell as a hawker

5= On farm sale

6= Sell at pension pay-points

7 = Other, specify:

3.4 What relationship do you have with these markets? (Please circle most appropriate answer)

1= Fixed-term agreement

2= Contractual agreement

3= Verbal agreement

4= No agreement

5= Other, specify:

3.5 How do you transport your produce? (Please circle most appropriate answer)

1= Own transport

2= Hired transport

3= Taxi

4= By foot

5= No transport needed

6= Other, specify:

3.6 What value adding practices do you do?

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3.7 How do you price your produce for the market? (Please circle most appropriate answer)

1= Same as retail stores

2= Specialist's advice

3= Same as local shop

4= Same as other growers

5= Hawker's prices

6= Own price

7 = Other, specify:

3.8 How do you promote your produce? (Please circle most appropriate answer)

1= Word of mouth

2= Take produce to market/customer

3= Display

4= Other, specify:

**Section D: Use of social cash transfers on agricultural production activities.**

4.1.1 In the past two seasons, did the household have money to buy farming equipment?

1=Yes

2=No

4.1.2 If yes, was any of the money from social cash transfers?

1=Yes

2=No

4.2 Did the household buy any of these farming tools/equipment in the 2017/2018 seasons? (Multiple tick)

Spade

Sickle

Wheelbarrow

Pickaxe

Fork spade

Rake

Knapsack sprayer

Shovel

Hand hoe

Watering can

Axe

Hosepipe

Shears/ gardening  
scissors

Sprinkler

Other, specify:

4.3 What other farming equipment does the household own apart from the abovementioned? (Multiple tick)

Spade

Sickle

Wheelbarrow

Pickaxe

Fork spade

Rake

Knapsack sprayer

Shovel

Hand hoe

Watering can

Axe

Hosepipe

Ox-drawn plough

Planter

Shears/ gardening  
scissors

Sprinkler

Other, specify:

4.4 In the 2017/2018 seasons, did the household have money to buy production inputs? (Multiple tick)

Crop production		Livestock production	
Seed	Pesticides	Vaccination	Syringe/injection
Seedlings	Lime	Medicines	Feed
Fertilizer	Other, specify:	Hoof trimmers	Other, specify:
Herbicides		Drencher	

#### Section E: Social inclusion

5.1 Please indicate who is responsible for the following activities in your household (tick the appropriate):

Activity	Member	Partner	Joint effort (family)	Hired labour	Other (specify)	Cost (R) If it's labour
<b>Cropping</b>						
Buying inputs						
Planting						
Weeding						
Irrigating						
Daily management						
Harvesting						
<b>Livestock</b>						
Buying livestock						
Stockman-ship						
Stewarding						
Medicating						

5.2 Please indicate involvement in social networks/associations (formal and informal):

1=Yes    If yes, what are the benefits:

2=No    1= Loan

2= Joint input purchases

3= Extension services and training

4= Joint marketing of produce

5= Other, specify

Are there any social networks/associations in the community

Are you involved in any social networks/associations?

Agricultural project



Farming co-operative (formally registered)

Farmers' association

Savings club

Other, specify:

In your view, does receiving social cash transfers influence your participation in social clubs/associations? 1=Yes  
2=No

5.3 Did any member of the household obtain a loan/credit in the 2017/2018 seasons?

5.3.1 If no, please specify the reason? (Continue to **Section F**) Yes No

1= Did not need to take loan/credit 2= Did not qualify to take the loan/credit  
3= Did not afford to pay back the loan/credit 4= High interest rate  
5= No collateral 6= Other, specify:

5.3.2 If yes, where was the loan/credit sourced?

1= Friend 2= Savings club  
3= Input supplier 4= Local shop  
5= Loan shark 6= Formal financial institution (eg. banks)  
7= Other, specify:

5.3.3 If yes, what was the loan/credit used for?

1= Buy food for the household 2= Agricultural purposes (Inputs, equipment, labour)  
3= Medical reasons 4= Other, specify:

5.3.4 If yes, were you able to pay back the loan/credit in time?

Yes No

5.3.5 In your view, to what extent does receiving social cash transfers increase your credibility to obtain credit? 1= Not at all  
2= A little  
3= Somewhat  
4= A lot

5.4 Please rank the following institutions on usefulness to the farming activities and state their function to your farming household.

Institution	Ranking keys	Function keys
	1= Very important	1= Input supply
	2= Important	2= Extension services
	3= Neutral	3= Marketing of produce
	4= Unimportant	4= Supply implements

5= Maintenance of resources

6= Loan

7= Legal matters

8= Other (specify)

Traditional leaders

Private organisations and NGOs

Academic institutions

Government agencies

Irrigation scheme committee

Community/fellow farmers

Engineering committee

Extension officers

Neighbouring farmers

Others (specify)

## Section F: Food security

### 6.1 Months of hunger experiences

6.1.1 In the past 12 months, were there months in which you did not have enough food to meet your family's needs?

1=Yes

2=No

6.1.2 If yes, which were the months (in the past 12 months) in which you did not have enough food to meet your family's needs? (Circle)

A-January

B-February

C-March

D-April

E-May

F-June

G-July

H-August

I-September

J-October

K-November

L-December

**6.2 Please indicate your household's food security:**

1=Never

2=Rarely (1 – 2 times a month)

3=Sometimes (3 – 10 times a month)

4=Often (more than 10 times a month)

6.2.1 In the past four weeks, did you worry that your household would not have enough food?

6.2.2 In the past four weeks, were any household members not able to eat the kind of foods they preferred because of lack of resources?

6.2.3 In the past four weeks, did any household member have to eat a limited variety of food because of lack of resources?

6.2.4 In the past four weeks, were any household member had to eat some foods that they really did not want to eat because of lack of resources to obtain other types of food?

6.2.5 In the past four weeks, did any household member have to eat a smaller meal than you felt you needed because there was not enough food?

6.2.6 In the past four weeks, did any household member have to eat fewer meals in a day because there was not enough food?

6.2.7 In the past four weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food?

6.2.8 In the past four weeks, did any household member go to sleep at night hungry because there was not enough food?

6.2.9 In the past four weeks, did any household member go all day and night without eating anything because there was not enough food?

6.2.10 In your view, to what extent has social cash transfers improved your household food security?

1= Not at all

2= A little

3= Somewhat

4= A lot

6.3 Consumption coping strategies index	Behaviors: In the past 7 days, if there have been times when you did not have enough food or money to buy food, how many days has your household had to: Yes or no	Number of days out of the past seven (use numbers 0 – 7 to answer number of days
a. Rely on less preferred and less expensive foods?		
b. Borrow food, or rely on help from a friend or relative?		
c. Purchase food on credit?		
d. Gather wild food, hunt, or harvest immature crops?		
e. Consume seed stock held for next season?		

f. Send household members to eat elsewhere?		
g. Send household members to beg?		
h. Limit portion size at meal times?		
i. Restrict consumption by adults in order for small children to eat?		
j. Feed working members of HH at the expense of non-working members?		
k. Reduce number of meals eaten in a day?		
l. Skip entire days without eating?		

6.4 How does the household cope with major income shocks (e.g. drought, death of a breadwinner, job loss, etc.) 1= Yes 2= No			
Sell livestock		Take on additional work	
Sell other assets		Reduce spending	
Use own cash savings		Reduce food consumption	
Borrow money from relatives		Reduce or stop debt repayments	
Borrow money from stokvel		Other, please specify:	
Receive help from friends or relatives			

## Annexure C: Ethical Clearance



9 April 2018

Prof Rob Slotow  
College of Agriculture, Engineering and Sciences  
Pietermaritzburg Campus

Dear Prof Slotow

Protocol reference number: HSS0287/018  
Project title: Sustainable and Healthy Food Systems (SHEFS)

### Full Approval – Expedited Application

In response to your application received on 4 April 2018 the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours Faithfully

.....  
Professor Shenuka Singh (Chair)  
Humanities & Social Sciences Research Ethics Committee

/pm

cc Supervisor/Project Leader : Prof Rob Slotow

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Humanities & Social Sciences Research Ethics Committee

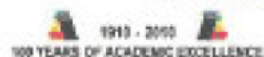
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Founding Colleges: Edgewood Howard College Medical School Pietermaritzburg Westville