

# **Command agriculture input subsidy programme as a source of funding for smallholder producers in Zimbabwe**

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## **ABSTRACT**

In sub-Saharan countries, the agricultural sector is regarded as indispensable because of its contribution to both the social and economic growth of countries. As a result, the governments of these countries have invested substantially into the sector through schemes known as input subsidy programmes (ISPs). ISPs are programmes that offer inputs to farmers at subsidised prices on credit through signing of contracts. The ISPs are mainly targeted at smallholder producers who are believed to own the majority of the farming lands. In Zimbabwe, like the other sub-Saharan African countries, the government invested in the Command Agriculture ISP with the aim of improving the lives of the producers, food security and the economy of the country.

However, despite the existence of ISPs, there are also other agricultural financing alternatives that smallholder producers can consider. These include commercial banks, agricultural companies, development finance institutions and micro-financing companies. As a result, producers have a lot to consider before deciding on the most suitable source to use a source of agricultural funding.

The study aimed to explore the use of the Command Agriculture ISP as a source of agricultural funding for smallholder producers in Zimbabwe. This was achieved by reviewing the literature and following the honeycomb of research methodology by Wilson (2014). This allowed the researcher to map out the factors contributing to the effective and efficient operation of the Command Agriculture ISP. These factors are the stakeholders of the program, its strengths and weaknesses and perceptions on its future.

Data were collected by sending out structured questionnaires (quantitative data) to smallholder producers and interviewing (qualitative data) the Commercial Bank of Zimbabwe (CBZ) and Agricultural Research Extension (AGRITEX) officials. The officials carry out most of the administrative work of the Command Agriculture ISP. Quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS), whilst qualitative data were analysed using thematic analysis. The SPSS provided discussions on the frequency distribution of the data, descriptive statistics, exploratory factor analysis and lastly, the analysis of variances. The quantitative findings showed that, although the ISP has its drawbacks, more producers are joining the programme indicating the possible future success if the programme. Like the quantitative findings, the qualitative results disclosed that the ISP has its shortcomings, such as corruption, the economic recession in the country and delayed input distribution. Nevertheless, the qualitative findings also showed that the ISP will continue to operate into the foreseeable future.

The study will contribute to the body of the existing literature and provide insights to the stakeholders of the Command Agriculture ISP on what can be done to successfully run the programme. The

government of Zimbabwe, being the main stakeholder, can invest in ways to strengthen the relationship of the ISP and the producers in order to attract more producers and identify suitable audit systems to reduce corruption.

**Keywords:** agricultural finance, command agriculture, contract farming, input subsidies, smallholder producers, Zimbabwe

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## **LIST OF ABBREVIATIONS**

<b>AFC-</b>	Agriculture Finance Corporation
<b>AGRIBANK-</b>	Agricultural Bank of Zimbabwe
<b>AGRITEX-</b>	Agricultural Technical and Extension Services
<b>AMA-</b>	Agricultural Marketing Authority of Zimbabwe
<b>ANOVA-</b>	Analysis of Variances
<b>CBZ-</b>	Commercial Bank of Zimbabwe
<b>DFI-</b>	Development Finance Institutions
<b>EFA-</b>	Exploratory factor analysis
<b>FAO-</b>	Food and Agriculture Organisation of the United Nations
<b>FTLRP-</b>	Fast Track Land Reform Programme
<b>GMB-</b>	Grain Marketing Board
<b>IMF-</b>	International Monetary Fund
<b>ISP-</b>	Input Subsidy Programme
<b>KMO-</b>	Kaiser-Meyer Olkin test
<b>MAMID-</b>	Ministry of Agriculture Mechanization and Irrigation Development
<b>NWU-</b>	North-West University
<b>PSM-</b>	Propensity score matching
<b>RBZ-</b>	Reserve Bank of Zimbabwe
<b>SPSS-</b>	Statistical Package for the Social Sciences
<b>SSA-</b>	Sub-Saharan Africa
<b>VCF-</b>	Value chain financing
<b>UNECA-</b>	United Nations Economic Commission for Africa
<b>ZNA-</b>	Zimbabwean National Army

# **CHAPTER 1: INTRODUCTION**

## **1.1 BACKGROUND TO THE STUDY**

Agriculture is regarded as an essential social fabric and economic activity in most developing countries (Braithwaite *et al.*, 2018). This is because of its contribution to food security and economic growth through poverty eradication; hence, many governments have seen fit to finance the sector (Vitoria *et al.*, 2012). Several schemes have been put in place to support agricultural producers financially. These schemes are offered by commercial banks, agricultural companies and development finance institutions (DFIs), amongst others (Middelberg, 2013). Additionally, the governments came up with input subsidy programmes (ISPs) that support smallholder agricultural producers (Chirwa & Dorward, 2013). ISPs are defined as agricultural schemes developed and funded by governments aimed at supporting producers financially (FAO, 2013).

Smallholder agricultural producers are defined in several ways, depending on the context, country, or ecological region (Hazell *et al.*, 2007). Tadesse *et al.* (2015) depict that smallholder producers are defined as those that face limited endowments as compared to other producers. Chisasa and Makina (2012), on the other hand, state that smallholder producers own small pieces of land and they depend on such land as their livelihoods and they furthermore rely on family or cheap labour. Despite owning small pieces of land or facing limited endowments, smallholder producers are responsible for almost 70 percent of the food supply in Africa and their potential is not yet fully recognised (Steinmann, 2014).

In the Zimbabwean context, a severe economic downturn which was mainly influenced by the 2008/2009 world financial crisis has resulted in a lack of finance for producers, particularly smallholder producers, who have limited access to resources (Mazwi *et al.*, 2019). The economic downturn has left smallholder producers with a thin base upon which to make their financing decisions (Chigunhah *et al.*, 2020; Mazwi *et al.*, 2019). On the other hand, the World Bank (2019) reports on the negative effects of climate changes on the African agricultural sector. These climate changes are affecting the harvests of the producers, leading to financial losses and failure to settle agricultural loans.

## **1.2 STATE OF AGRICULTURAL FINANCE IN ZIMBABWE**

The state of agricultural finance in Zimbabwe is influenced by factors such as the post- and pre-independence era as well as the introduction of the Fast-Track Land Reform Programme (FTLRP) of 2000, according to Moyo and Chambati (2013) and Scoones *et al.* (2010). In 2006, the Reserve Bank of Zimbabwe (RBZ) indicated that during the pre-independence era, agricultural loans were provided by commercial banks owned by both government and the private sector, although privately-owned

banks contributed to a lesser extent (Chisasa & Makina, 2012). During that time, the Rhodesian government established a bank named the Land Bank, which provided loans to smallholder producers. The process was carried out through the Agricultural Loan fund (RBZ, 2006). There was no collateral needed to qualify for funding, the fund only considered the credit history of the producer in issuing the loans (Anseeuw *et al.*, 2012)

According to the RBZ (2006) report, in 1971, the name of the Land Bank was changed to the Agriculture Finance Corporation (AFC). This corporation focused mainly on issuing long-term loans to producers. Long-term credit was provided for periods ranging between six to 30 years and producers used the funds to purchase land, construct farming buildings and buy sophisticated farming equipment. These producers were strictly required to provide security or collateral that matched the value of their loans. The privately-owned banks continued to offer short- to medium-term loans to producers. The short-term loans were used by producers for seasonal funding and were repaid within a year (RBZ, 2006).

According to Scoones *et al.* (2010), after Zimbabwe's independence, the AFC was expanded and broadened in a way that would include peasant producers who had no suitable collateral to access these loans. However, from 1985 to 1990, the AFC collapsed due to inconsistencies in loan repayment and incessant droughts (Pandey & Ramnarayan, 1994). The corporation's agriculture financing had grown to 35% – as a percentage of the bank's total credit facilities – from the 22% of the pre-independence period around that time. The collapse of the AFC led to the establishment of the now-called Agricultural Bank of Zimbabwe (Agribank). It is during 1998 that the private commercial banks and other agricultural finance providers saw an increase in lending to the agricultural sector.

From the introduction of the FTLRP in 2000 to date, researchers have confirmed the active contribution of commercial banks in agricultural finance as well as the emerging of microfinance agribusinesses (Demeke *et al.*, 2014; Gwekwerere *et al.*, 2018). However, Chigunhah *et al.* (2020) discovered a decline in levels at which commercial banks in Zimbabwe were and are willing to offer credit to producers from the year 2000 to date. This is due to the fear of the credit risks associated with farming, for example, poor harvests due to climate changes and uncertainties relating to land tenure (Ropafadzo *et al.*, 2020). Therefore, the government, in conjunction with the RBZ, introduced schemes such as the Agricultural Sector Productivity Enhancement, Commodity Producers Support Programme and the Grain Procurement that were used to support producers (Ropafadzo *et al.*, 2020; Shonhe, 2018). Although these schemes were developed to support producers, they became unsustainable due to the country's poor economic performance (Shonhe, 2018).

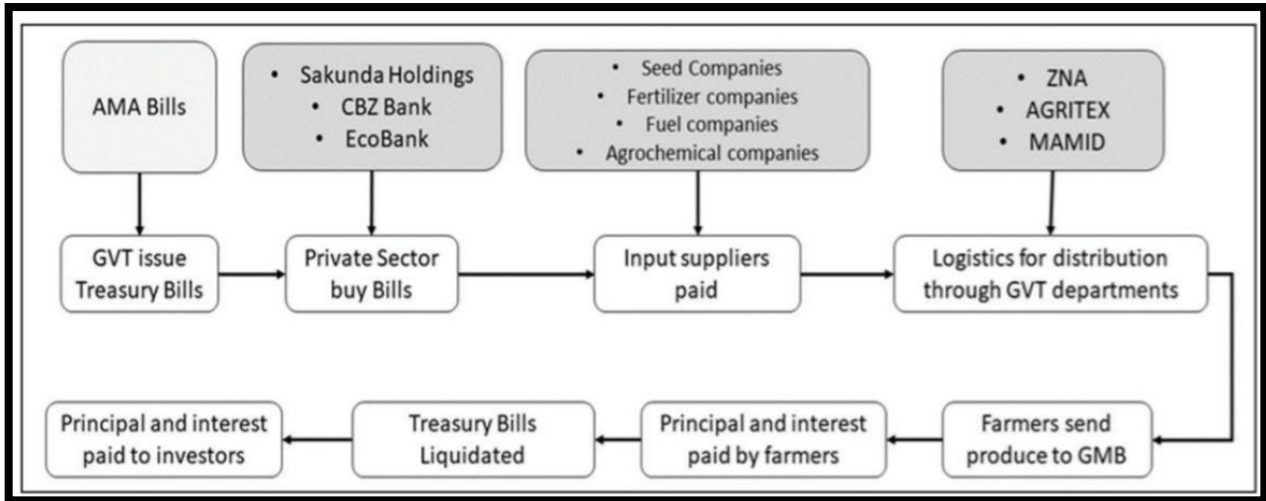
As confirmed by Masiyandima (2017), the 2008/2009 economic downturn in Zimbabwe imposed

financial constraints on the country's agricultural sector, particularly on smallholder producers who fail to provide the needed security to access agricultural loans from commercial banks. Despite this drawback of poor economic conditions in the country, the government still emphasises the importance of credit to the agricultural sector for national development and improving food security in the country (Victoria *et al.*, 2012). This is why the government reintroduced Command Agriculture, an ISP, in 2016, with the scheme still in use to date.

### **1.3 ROLE OF COMMAND AGRICULTURE INPUT SUBSIDY PROGRAMME IN ZIMBABWE**

Command Agriculture, also known as Operation Inala/Maguta, was initially introduced in 2005 to boost cereal production in Zimbabwe, which in those years were very low (Mazwi *et al.*, 2019). The beneficiaries of the programme were mainly peasant farmers, which may also be referred to as smallholder producers (Mazwi *et al.*, 2019). In 2008, the programme faced challenges that were related to the effects of side marketing and it was abandoned (Moyo & Chambati, 2014). In agriculture, side marketing, or side-selling, is described as a situation where parties violate contractual agreements either when the producer sells farm produce to other merchants or when the company buys from producers it has not contracted (Mambondiani, 2018).

In the agricultural season of 2016 to 2017, Zimbabwe was faced with a very high food import bill. To reduce that bill and ensure food security, Command Agriculture ISP was reintroduced, this time with the involvement of several stakeholders from both the private- and public sectors (Makuwerere Dube, 2020). The stakeholders included the state-controlled Ministry of Agriculture, the RBZ, Lands and Rural Development Board, the Grain Marketing Board and privately-owned companies like the Commercial Bank of Zimbabwe (CBZ) and a petroleum company, Sakunda Holdings (Mazwi *et al.*, 2019). It is the inclusion of private businesses that brought a new dimension to the ISP, although the state remains the key facilitator of the programme. The clear implementation process of Command Agriculture ISP is depicted in Figure 1.1.



**Figure 1.1: Command Agriculture ISP implementation process**

Source: Mazwi *et al.* (2019)

Figure 1.1 illustrates the process followed when issuing farming inputs such as seed, fertiliser, fuel and funds to producers in the Command Agriculture ISP. The complete process, as described by Mazwi *et al.* (2019), is illustrated in Figure 1.1, although greater detail will be provided in Chapter 2 (the literature review chapter). The government issues treasury bills to the private companies (Sakunda holdings, CBZ Bank and Ecobank) involved in the programme. These treasury bills are facilitated by the Agricultural Marketing Authority of Zimbabwe (AMA), which is a statutory body mandated to regulate the producing, processing and marketing of agricultural products in Zimbabwe. After the private companies buy the treasury bills, with the help of the CBZ Bank and the Ecobank, a payment is made to suppliers of farming inputs such as fertilizers, seed, fuel and herbicides, among others. The farming inputs are then delivered to the Grain Marketing Board (GMB) where members of the government-controlled Agricultural Technical and Extension Services (AGRITEX), the Zimbabwean National Army (ZNA) and the Ministry of Agriculture Mechanization and Irrigation Development (MAMID) deliver the farming inputs to the producers. AGRITEX is the procurement channel most used under Command Agriculture ISP as compared to MAMID and ZNA (Mazwi *et al.*, 2019).

After harvesting, the producers are required to sell their produce to the GMB, the country's leading grain trade and marketing company, which is also government-owned. A certain amount is deducted by the GMB from the producers to account for the farming inputs given to them, whereafter the producers receive their profits (the difference between the principal and interest and input costs). This is when the treasury bills are liquidated and the investors are paid back their principal amounts with interest.

According to the Agricultural Marketing Authority Act (Act No. 26 of 2004) [Chapter 18:24], the objectives of the Command Agriculture ISP are as follows:

- To ensure food security;
- To reduce the production costs for smallholder producers;
- To ease the access of agricultural finance for smallholder producers; and
- To act as a source of social and economic resilience.

As shown in Figure 1.1, Command Agriculture ISP is a multi-stakeholder ISP. The stakeholder theory will be used as a theoretical framework for the study and is discussed below.

#### **1.4 THEORETICAL FRAMEWORK AND ASSUMPTIONS**

A theoretical framework is referred to as a structure that supports a theory of a research study and it assists the researcher in introducing and describing the relevance of the research problem (Swanson & Chermack, 2013). The study will adopt the stakeholder theory, which originated from the work of Freeman (1984). According to Jones *et al.* (2018), stakeholder theory assists scholars, researchers and managers to obtain a solid understanding of the relationships between companies and their stakeholders by considering the performance effect of these relationships. The stakeholder theory is an essential framework that can be used to identify the interests, influences and powers of different stakeholders in the business and beyond (Jones *et al.*, 2018).

The stakeholder theory emphasises the importance of identifying the various stakeholders. Metcalfe (1998) defines a stakeholder as any individual or group who can affect, or is affected by, the achievement of the organisation's objectives. According to the stakeholder theory, stakeholders are grouped into primary stakeholders – who are the key stakeholders – and secondary stakeholders (Jones *et al.*, 2018). Primary stakeholders, or key stakeholders, are those with a legitimate contractual relationship with the organisation; whereas, secondary stakeholders are those with little influence or power on the organisation but play an important role in the organisational success (Jones *et al.*, 2018). Considering Figure 1.1, stakeholder theory as well as the Mendelow's stakeholder matrix, Table 1.1 shows the primary and secondary stakeholders of the Command Agriculture ISP from the smallholder producers' perspective.



**Table 1.1: Classification of the stakeholders of the Command Agriculture ISP**

Primary stakeholders	Secondary stakeholders
Producers (smallholder producers)	Input suppliers
The government through AGRITEX	AMA
CBZ and Ecobank	Sakunda Holdings

Source: Author's own compilation

As shown in Table 1.1, the study will focus mainly on the key stakeholders of the programme, which are: 1) smallholder producers who are the beneficiaries of the ISP, 2) the government, through AGRITEX, the procurement service provider and 3) the financial facilitators, which are the banks. To examine the ISP as a source of funding for smallholder producers, the research must consider the opinions and perceptions of the stakeholders involved. The stakeholder theory assists by identifying the stakeholders and investigating their perceptions. This study will, therefore, employ the stakeholder theory to examine the Command Agriculture ISP as a source of funding for smallholder producers in Zimbabwe.

## 1.5 LITERATURE REVIEW

A brief literature review on ISPs and agricultural finance for smallholder producers is discussed below.

### 1.5.1 Input Subsidy Programmes

ISPs are schemes developed by the government that assist producers financially and are funded by public resources (FAO, 2013). The ISPs aim to reduce the production cost for smallholder producers because these producers are considered to be financially strained or poor (FAO, 2013; Mazwi *et al.*, 2019). Jayne and Rashid (2013) state that ISPs have become an important tool for agricultural development in Africa. On the other hand, the impact of these programmes has not been rigorously assessed (Jayne & Rashid, 2013). Kato and Greeley (2016) conclude in their study "*Agricultural Input Subsidies in Sub-Saharan Africa*", that these ISPs are successful in increasing grain yields and poverty eradication. Their study, however, focused only on five African countries, namely Tanzania, Zambia, Mozambique, Nigeria and Ghana.

Furthermore, Jayne *et al.* (2018) evaluated the impact of ISPs on the financing decision of smallholder producers, food production and poverty. The study focused on sub-Saharan African (SSA) countries, like Kenya and Tanzania, and they concluded that ISPs are slowly easing the accessibility of agricultural funding for smallholder producers; meaning that more producers can now enter into ISP contracts. However, they also discovered the need for the ISPs officials to cost-effectively achieve the

intended goals of the programmes. ISPs are also prone to government interference, which may be political at times. This is supported by the study of Chigunhah *et al.* (2020) on the political economy of Command Agriculture ISP in Zimbabwe. They found that smallholder producers sometimes hesitate to enter into ISPs because of political interference. In addition to the studies done on the Command Agriculture ISP, the World Bank (2020) conducted a study to quantify the impact of the programme during its first year of implementation, which is 2016. They concluded that the programmes were going to improve grain production and food security in Zimbabwe.

### **1.5.2 Agricultural financing alternatives**

It is not only ISPs that are targeted to improve access to agricultural finance for smallholder producers, but there are also several schemes available that cater to the needs of small-scale producers. As mentioned previously, producers can access agricultural finance from various sources like agricultural companies, DFIs and other private loan providers (Middelberg, 2013). Chisasa (2014) discovered that commercial banks give larger loans to producers as compared to other loan providers. However, there is noticeable evidence on the decreasing levels at which banks are willing to issue credit to producers because of the risks associated with farming, such as climate change (Chigunha *et al.*, 2019). Value chain financing (VCF) is also another alternative source of funding for smallholder producers (Middelberg, 2017). VCF in agriculture can be described as the flow of credit among various players in the supply chain and it has also been embraced by smallholder producers (Miller & Jones, 2010).

### **1.5.3 Knowledge gap**

Various studies have been conducted on agricultural VCF and participation of banks in agricultural finance as well as the impact of ISPs in other sub-Saharan African countries (Chisasa & Makina, 2012; Mazwi *et al.*, 2019; Middelberg, 2017; Ropafadzo *et al.*, 2020; Steinmann, 2014). The review of the available literature reflected that fewer studies have been done on the Command Agriculture ISP as a source of funding for smallholder producers in Zimbabwe. Hence, the research will focus on filling this gap. A more comprehensive literature review of the topic under study will be provided in the Chapter 2 (Literature Review).

### **1.5.4 Relevance of the study to Management Accountancy**

In management accounting, a financial manager, a business owner or a producer has three key decisions to consider in optimising an organisation's finances, namely (1) investment; (2) financing; and (3) dividend decisions (Banerjee, 2012:10). This study is concerned with the financing decision of smallholder producers – a key decision to be taken in the financial and managerial practices of a farming operation. If the financing decision is not optimised through affordable and stable financing,

the farming operation is set up for failure. The research will add to the existing body of knowledge about various low-cost financing schemes that are available and that affect the financing and managerial decisions of smallholder producers.

## **1.6 PROBLEM STATEMENT**

Several factors, such as economic downturn, lack of suitable collateral and the effect of spiked vulnerability to climate changes on farm produce, have resulted in Zimbabwean smallholder producers struggling to secure enough funds for their farming activities. In addition to the already available financial schemes offered to agricultural producers by commercial banks, the government of Zimbabwe reintroduced Command Agriculture ISP to improve the country's food security and the livelihood of producers in general. There is a lack of research on the Command Agriculture ISP of Zimbabwe as a source of funding for smallholder producers (Mazwi *et al.*, 2019). Empirical investigations of ISPs to smallholder producers are important, considering the 70% contribution of smallholder producers to food security as well as how the ISPs affect the financing decisions of these producers (Steinmann, 2014).

This study will aim to address this knowledge gap by examining the Command Agriculture ISP as a source of funding for smallholder producers in Zimbabwe and its progress over the past six years that it has been in operation. Such an analysis will be helpful to determine the extent that improvements have to be made.

## **1.7 RESEARCH OBJECTIVES**

The following main objective, supported by secondary objectives, has been formulated for the study.

### **1.7.1 Main objective**

To examine the perceptions of the Command Agriculture input subsidy programme as a source of funding for smallholder producers in Zimbabwe.

### **1.7.2 Secondary objectives**

The secondary objectives were split between theoretical and empirical objectives.

#### **1.7.2.1 Theoretical objectives**

- To review the literature on ISPs to highlight salient factors influencing Command Agriculture ISP as an important source of funding for smallholder producers (Chapter 2); and

- To identify and assess other alternative sources of agricultural finance that can be considered by smallholder producers (Chapter 4).

### **1.7.2.2 Empirical objectives**

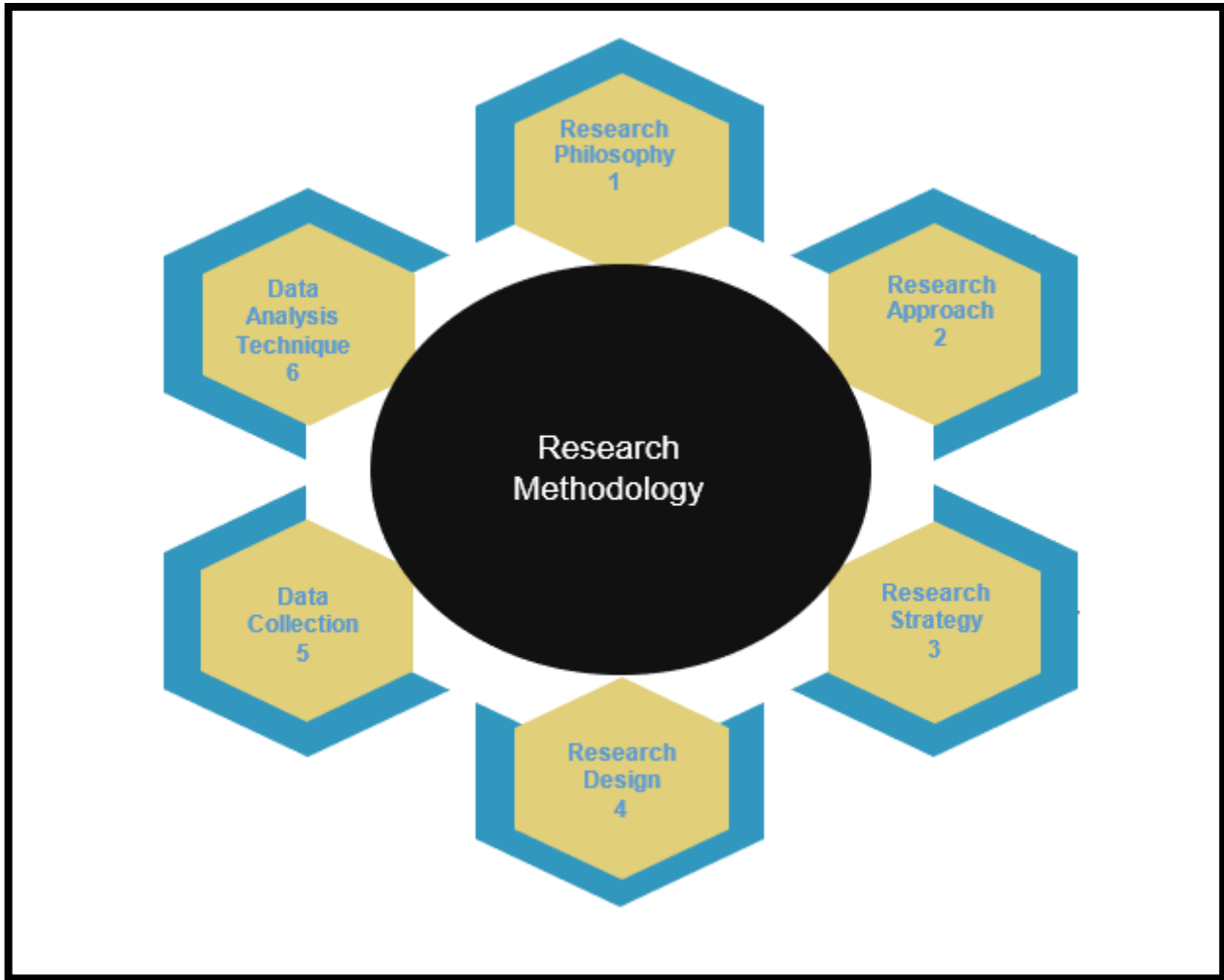
- To examine the influence of demographic factors on qualifying for the Command Agriculture input subsidy programme as a source of funding (Chapter 4 – quantitative);
- To evaluate the benefits and drawbacks of using Command Agriculture ISP as a source of funding and establish the future of the programme from the smallholder producers' perspective (Chapter 4 – quantitative);
- To examine the internal strengths and weaknesses and external opportunities and threats of the Command Agriculture ISP from the officials' perspective (Chapter 5 – qualitative);
- To assess the programme's officials' perception of whether the Command Agriculture input subsidy programme's intended outcome was achieved and obtain their view about the programme's future (Chapter 5 – qualitative).
- To suggest improvements to the Command Agriculture input subsidy programme based on the quantitative and qualitative data collected (Chapter 6).

To successfully carry out this research, the following methodology described in the next section was adopted.

## **1.8 RESEARCH METHODOLOGY**

A research methodology is a contextual framework that is based on beliefs and values that guide the researcher when carrying out a research study by making use of particular methods and philosophies (Creswell, 2007) According to Wilson (2014), there are six elements that make up the research methodology, namely (1) research philosophy; (2) research approach; (3) research strategy; (4) research design; (5) data collection; and (6) data analysis techniques. These elements can be clearly described as the honeycomb of research methodology (Wilson, 2014).

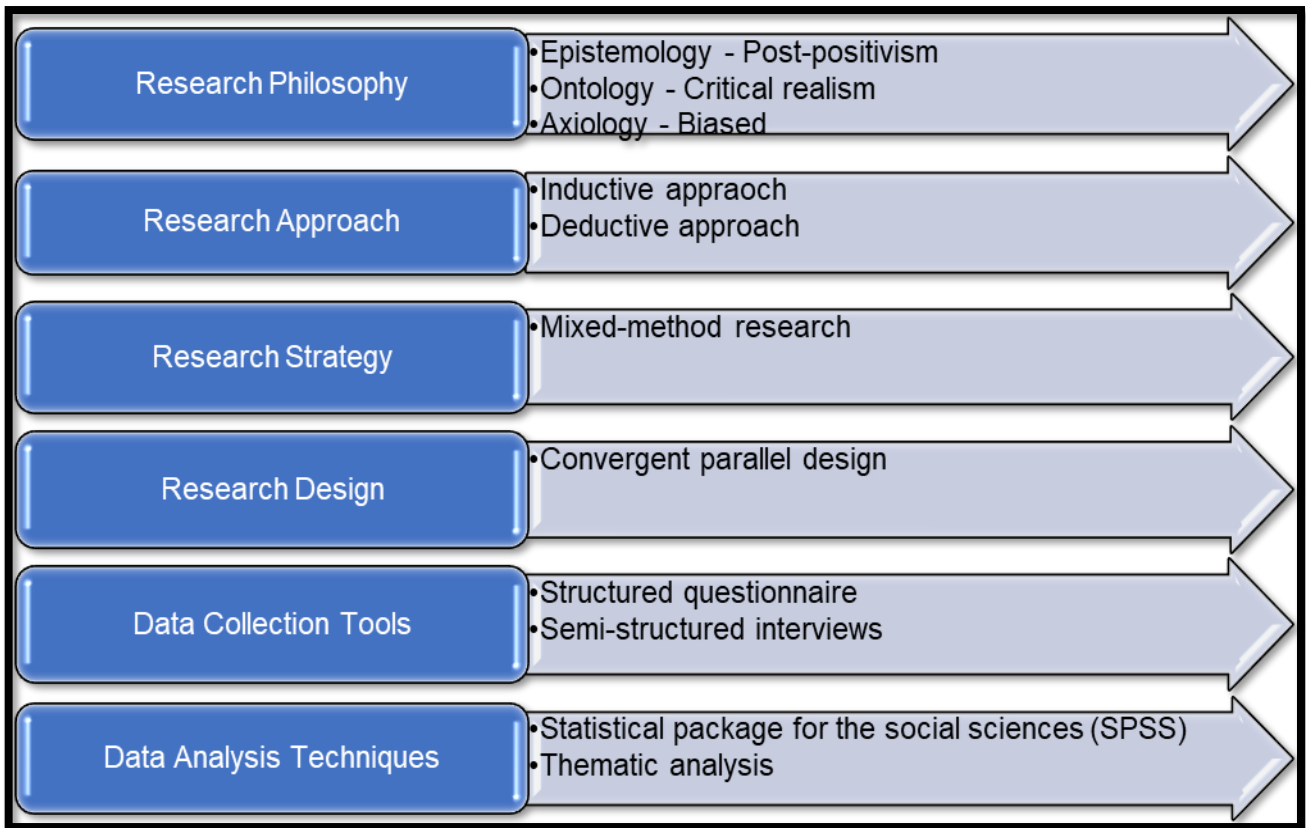
The researcher followed the honeycomb of research methodology to clearly explain the research methodology for this study (Figure 1.2).



**Figure 1.2: The honeycomb of research methodology**

Source: Wilson (2014)

Figure 1.2 shows the elements as numbered segments, but the use of the honeycomb illustrates that the research methodology thought process may not necessarily be linear (Wilson, 2014). The honeycomb shows the six elements combined to form the inner segment, which is the research methodology. These six elements will be used as a framework for the presentation of the research methodology and each will be explained under separate headings in Chapter 3 (Research Methodology). Figure 1.3 shows the corresponding components of the elements in the honeycomb of research methodology.



**Figure 1.3: Honeycomb main elements with their corresponding components**

Source: Author's own compilation

Figure 1.3 indicates the main elements of the honeycomb of research methodology with the corresponding components of the elements applied to this study. The research was nested in the post-positivism, critical realism and bias as the epistemological, ontological and axiological philosophical assumptions respectively. The research approach included both inductive and deductive reasoning as the strategy was a mixed-method research strategy. Mixed method research strategy involves the collection of both qualitative and quantitative data (Wilson, 2014). In order to combine both the quantitative and qualitative data, convergent parallel research design was applied.

Quantitative data were collected by sending online structured questionnaires to smallholder producers whilst semi-structured interviews with CBZ and AGRITEX officials were used to collect the quantitative data. The quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS) with the help of the NWU statistical services. The statistical methods used included frequency distributions, exploratory factor analysis, descriptive statistics, correlation analysis and analysis of variances (ANOVA). Qualitative data were analysed by applying thematic analysis. The full details of these elements are fully explained in Chapter 3 (Research Methodology).

The section below outlines the chapter overview of this study.

## **1.9 CHAPTER OVERVIEW**

The study will be composed of the following chapters:

### **Chapter 1: Introduction**

This chapter introduces the study by providing a detailed background of Command Agriculture ISP and the state of agricultural finance in Zimbabwe. It highlighted the problem statement, the research objectives and the research methodology that the researcher followed.

### **Chapter 2: Input subsidy programmes and other agricultural financing schemes**

This chapter provides an analysis of previous studies that were done concerning ISPs, the models, weaknesses and strengths.

### **Chapter 3: Research methodology and theoretical framework**

This chapter explains in greater detail the research approach that was followed by the researcher by referring to the honeycomb research methodology model. A complete description of the data collection and analysis tools was provided, including the process followed to enhance methodological rigour. The chapter also included the theoretical framework, which guided this research study.

### **Chapter 4: Results and findings of the quantitative study**

Both this chapter and the following chapter addresses the main objective and supporting empirical secondary objectives, which was to examine Command Agriculture ISP as a source of funding for smallholder producers in Zimbabwe. The results collected from the questionnaires were presented, analysed and discussed in this chapter.

### **Chapter 5: Results and findings of the qualitative study**

Chapter 5 complements the findings from the questionnaires (Chapter 4) by presenting, analysing and discussing the results collected from semi-structured interviews.

### **Chapter 6: Summary, Conclusion and Recommendations**

The final chapter provides a summary of the research objectives and findings and a conclusion on the examination of the ISP under study. Recommendations were also outlined in this chapter.

The next chapter will present a literature review of ISPs and other agricultural financing schemes.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 INTRODUCTION**

The previous chapter provided an introduction to the study. The aim of this chapter was to address the theoretical secondary objectives as set in Chapter 1 (page 8) of reviewing the literature on ISPs and agricultural finance for smallholder producers in developing countries and the world over. The study reviewed the literature from books, journals and other publications. Both the theoretical and the empirical literature were synthesised.

This chapter conceptualised ISPs, the historical development in ISPs in Africa, the various models of ISPs, the objectives, strengths and benefits of ISPs, weaknesses and shortcomings of ISPs in Africa and the role of ISPs in providing smallholder producers financing and enhancing the achievement of various economic and social objectives. The chapter concludes with a conceptual framework, which will assist in showing the relationship between the ideas in the literature review and how they relate to this entire research study.

### **2.2 CONCEPTUALISATION OF INPUT SUBSIDY PROGRAMMES**

An agricultural subsidy is a strategic policy instrument that is intended to improve the productivity of the agricultural sector and the overall standard of living in a given country (Wirakusuma, 2020). This policy instrument is used in both developing and developed countries (Kirwan, 2009; Koo & Kennedy, 2006). Theoretically, the allocation of government funds to agricultural activities is expected to result in increased food production, increased income for agricultural producers and robust national food security systems (Ricker-Gilbert & Jayne, 2011). ISPs in agriculture generally take the form of discounted prices on farming inputs such as fertilizers, seeds, machinery, pesticides, or other credit facilities. Such subsidies aim to provide financial support to reduce the financing burden shouldered by producers. In addition to reducing production costs, input subsidies also aim to increase economies of scale and reduce risk, reduce poverty, especially in rural areas, as well as support agricultural-related industrial activities (Wirakusuma, 2020).

ISPs in Africa had been phased out in all but a small number of countries. However, in recent years, the re-emergence of ISPs has been one of the most important agricultural policy developments in Africa. For example, in 2011, ten African countries spent approximately 28,6% of their public expenditures on agriculture. Despite this recent re-emergence of ISPs, there has been limited thorough assessment of their impact on agricultural outcomes to date (Jayne & Rashid, 2013).



The theoretical arguments in support of an ISP in agricultural development focus on promoting agricultural productivity by making the adoption of new technologies more attractive to smallholder producers (Ellis, 1992). The reduced costs of subsidised farming inputs should increase their profitability and reduce the risks perceived by producers with limited knowledge of input benefits and correct usage. With credit and extension services (this is when farmers are offered technical advice and necessary farming inputs to support their production), input subsidies were supposed to help producers implement, benefit from, buy and use farming inputs on their own. Rapid learning about input use and benefits would mean that subsidies should be needed for only a short time and could be rapidly phased out (Chirwa & Dorward, 2013).

### **2.3 HISTORICAL EVOLUTION OF INPUT SUBSIDY PROGRAMMES IN AFRICA**

ISPs have been an integral component of agricultural policy in many African countries since they attained independence (Kherallah *et al.*, 2002). The model, initially supported by international donors such as the World Bank and International Monetary Fund (IMF), was that of universal input subsidies targeted at overcoming market failures on the open input and financial market. The aim was to reduce the price of farming inputs and increase access to finance on the general market without targeting specific households (Jayne & Rashid, 2013). Unfortunately, there is a consensus that the universal approach failed to achieve its objectives (Morris *et al.*, 2007). Shortcomings of the universal approach included: 1) high costs of running the schemes, 2) failure to manage the funds properly and 3) the capture of the schemes by the government elite. In addition, the universal schemes were not easily accessible by the poorer smallholder producers (Jayne & Rashid, 2013). Failure of the schemes was evidenced by the fact that in many cases, the cost of the schemes exceeded the benefits obtained (World Bank, 2007). These challenges negatively contributed to government budget deficits and serious macroeconomic imbalances (Jayne & Rashid, 2013). These budget deficits and macroeconomic imbalances gave leverage to international donors to force many African countries to abandon ISPs. Only a few, such as Malawi and Zambia, continued with the schemes (Jayne & Rashid, 2013).

According to Jayne and Rashid (2013), the attempt by international donors to liberalise agricultural activities failed dismally. Agricultural input use did not improve and poverty alleviation goals failed (Kherallah *et al.*, 2002). This was partly because other long-term policy initiatives to support agricultural activity, such as investing in crop science research, extension programmes and infrastructural development, remained underfunded by both international donors and African governments (World Bank, 2009). These challenges led many to conclude that liberalisation reforms were a failed project and there was, therefore, a need to reintroduce direct government participation in the agricultural market (Dorward *et al.*, 2004).

Macroeconomic and structural adjustment policy changes in Africa in the 1980s and 1990s contributed to economic growth (UNECA, 2012). According to Sala-i-Martin and Pinkovskiy (2010), African poverty rates also started declining steadily from the mid-1990s. This led most international donors to shift their attention from giving conditions in the agricultural sector to providing general budget support. There was a realisation of the fact that sustainable development in Africa could be achieved where there were cordial donor-government relationships rather than conflict-driven relationships. These factors provided a sound environment for the revival of ISPs (Jayne & Rashid, 2013). African governments made a public commitment to increase their support for agricultural activities through the Maputo Declaration of the Africa Union in 2003. The Abuja Declaration was also made in 2006. These declarations emphasised a commitment to increase fertilizer usage and use of smart ISPs (Jayne & Rashid, 2013).

## **2.4 MODELS OF INPUT SUBSIDY PROGRAMMES**

Since the 1960s, African governments have promoted the use of agricultural inputs through universal subsidies. The universal subsidy, as an agricultural policy, provided direct subsidies that reduced the prices of agricultural inputs below the level in the market, for all producers. In addition, the distribution and procurement of agricultural inputs were controlled and managed centrally by the government. Government parastatals had a legal monopoly on importing and distributing agricultural inputs. This was done through agricultural credit schemes that were managed by the government. These policies were often implemented through pan-territorial pricing (Tiba, 2011a).

Pan-territorial pricing refers to the uniform pricing policies implemented on the producer prices and selling prices. This helped to support agriculture in remote and less market-integrated areas (Makuwerere Dube, 2021). For example, in Zimbabwe, producers used to bear the cost of transport to depots while government marketing parastatals would bear any transport costs from depots to zone centres. In addition, millers, processors and food aid organisations would bear any transport costs from zone centres. In addition, there was a uniform selling price at zones. Historically, uniform depot prices meant that producers in the more remote surplus regions were being subsidised by producers in deficit regions and by producers closer to markets (Muir & Takavarasha, 1989). Advocates of pan-territorial prices argue that they increase returns to the more isolated areas and thus increase equity. In addition, they are easier to administer. On the other hand, critics argue that uniform prices harm economic growth and efficiency (Muir & Takavarasha, 1989).

The new generation of input subsidies includes the smart subsidies. These subsidies advocate for market-based solutions that aim to enhance the development of agricultural input markets while targeting and enhancing the welfare of the poor. They have wider objectives than universal subsidies,

which mainly seek to reduce the price of agricultural inputs in the open market. Smart subsidies focus on agricultural development, economic growth, social protection and food security. They are expected to impact on prices of inputs, agricultural output and productivity, prices of crops providing staple foods, farm wages, market growth and development as well as social development. Unfortunately, these smart subsidies can also result in adverse impacts such as market distortions and leakages to wealthier producers (Tiba, 2011a).

In the early 1980s, during structural adjustment programmes under the liberalisation agenda, universal subsidies came under heavy criticisms by donor institutions. The shortcomings levelled against them included: 1) incompatibility with the principles of the free market; 2) very expensive; 3) high implementation and transaction costs involved; and 4) overburdening the government budget. In addition, critics argued that they distorted market and producer incentives, slowed down the development of the private sector and benefited wealthier producers (Xu *et al.*, 2009). As a result, universal subsidies were ceased after donors withheld their support for these programmes. Unfortunately, because of this decision, the cost of fertilizer rose sharply and as a result it restricted access to fertiliser by small-scale producers. Smart subsidies should stimulate demand in private markets through lower prices of farming inputs and benefit private distributors by facilitating entry into input markets and by helping to achieve economies of scale.

Smart subsidies are designed to target the poor, use market-based solutions and promote pro-poor economic growth through increasing competition, supporting the private sector, enhancing economic efficiency and empowerment of producers (Morris *et al.*, 2007). Tiba (2011a) asserts that most ISPs in Africa aim to increase food security, improve the welfare of the poor and increase agricultural production in the respective country. Therefore, to achieve these goals, smart subsidies should encourage the production of food crops.

If an ISP aims to increase food supply, the scheme should target resource-constrained but productive producers who produce food (staple) crops. Thus, there is no economic gain if the subsidy benefits richer producers who would purchase the farming inputs anyway, even without the subsidy. Proponents of targeting the poorest producers argue that poorer farms are generally more efficient in cultivating labour-intensive food crops. On the other hand, wealthier producers with large farms are usually more efficient in producing capital-intensive higher-value cash crops (Kato & Greely, 2016). In addition, there is no clear empirical evidence that larger farms are more efficient in the use of agricultural inputs as compared to smaller farms (Dorward, 2009).

On the contrary, other authors like Ricker-Gilbert and Jayne (2012) support the targeting of producers with larger farms. This is based on the claim that wealthier households are indeed more efficient users

of the farming inputs than poorer households. Thus, poverty-reducing benefits may be sacrificed in favour of increasing food supplies (Jayne & Rashid, 2013). This is supported by Ricker-Gilbert and Jayne (2012) who found that in Malawi, larger producers of maize tended to obtain higher crop response rates to fertilizer than smaller producers. Their study used quantile regression and a correlated random effects estimator to deal with the potential endogeneity of subsidised fertilizer.

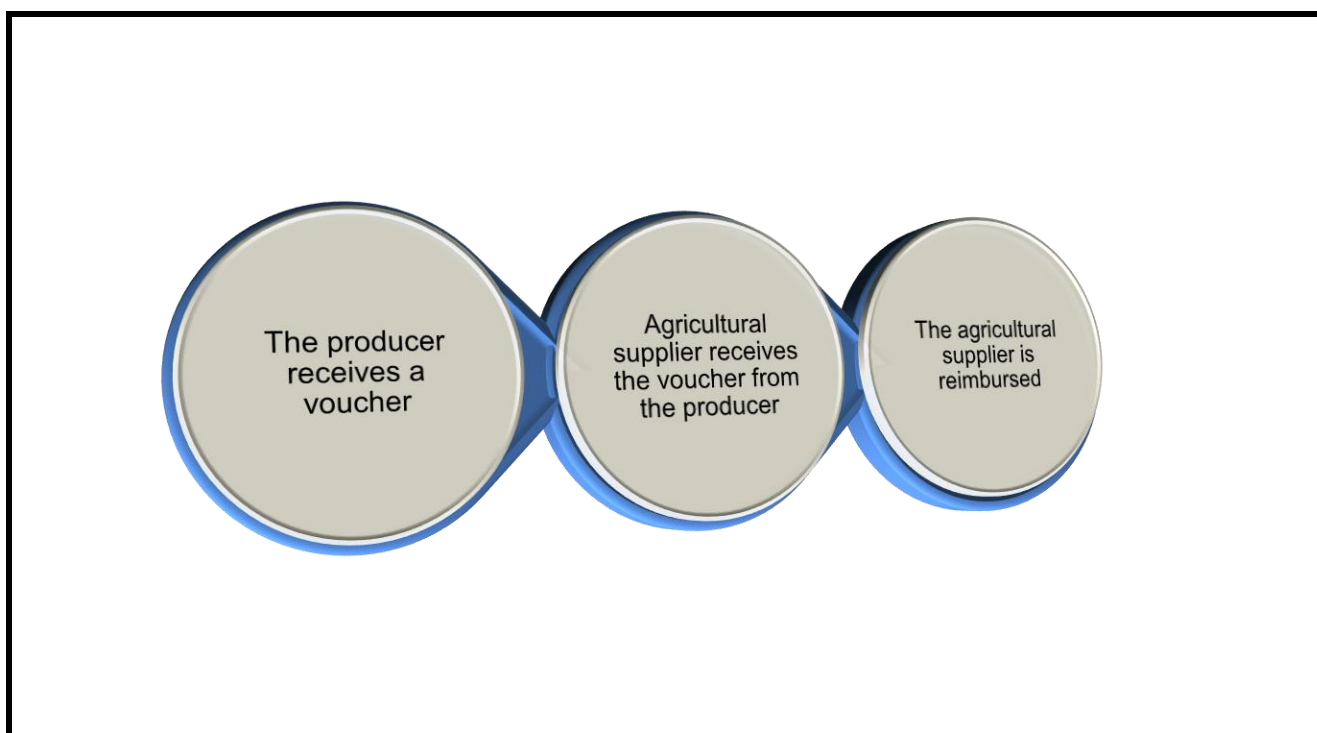
Targeting the appropriate beneficiaries is another critical issue in ISPs. The various targeting methods can be grouped into three categories, namely: 1) assessing eligibility; 2) demographic or geographical targeting; and 3) self-targeting. The first method involves assessing the eligibility of the individual or household in need of assistance based on the status of wealth (measured by means or a proxy) or assessed by the community through community-based targeting. On the other hand, under demographic or geographical targeting, beneficiaries are selected based on age or place of residence. Lastly, self-targeting involves designing the scheme in such a way that it encourages the needy to target themselves while discouraging (but not excluding) the participation of those who are in less need. However, in practice, programmes usually combine the various targeting methods (Tiba, 2011b).

The targeting of households meeting certain criteria under ISPs is considered to be more cost-effective than universal (untargeted) subsidies (Banful, 2011). Targeting is believed to enhance: 1) promotion of economic efficiency; 2) promotion of equity through targeting the poor; and 3) promotion of the development of the private sector (Christiaensen & Pan, 2012). Effective targeting requires the government to define the ISP objectives clearly. This is because of the trade-offs that exist between the objectives. For example, an ISP might have the objective of increasing productivity and income amongst smaller producers. In that case, the input vouchers should target the poorer producers who cannot afford to buy farming inputs at commercial prices. On the other hand, if the objective is to boost aggregate output, targeting should be at producers who could utilise farming inputs more efficiently. These may not necessarily be the poorer producers (Christiaensen & Pan, 2012). For example, in Zambia, the Ministry of Agriculture clarified that the targeting of non-poor producers was deliberate because the relevant programme's primary aim was to increase food supplies (Mason *et al.*, 2013).

Christiaensen and Pan (2012) asserted that decentralised targeting of input vouchers under ISPs aims to ensure that farming inputs more effectively reach their objectives and target population. However, there was always a danger of elite capture. For example, an evaluation of the input voucher programme in Tanzania found that 60% of the voucher beneficiaries were households with village officials. The authors lamented that such elite capture significantly reduced the targeting performance of the ISPs, especially in remote communities. Their study recommended that when targeting the poor

there was a need to concentrate in higher trust settings and adequate scrutiny (Christiaensen & Pan, 2012).

The other important aspect of ISPs is to find ways to get the farming inputs to producers. It is often argued that the best means to deliver smart subsidies is through input vouchers. The voucher system operates as follows: 1) producers receive vouchers; 2) the producers take the vouchers to suppliers to exchange for farming inputs (fertilizer, seed, or pesticides); 3) then the supplier gets reimbursed for the value of the coupon by a bank or any other designated agency. The process is described in Figure 2.1.



**Figure 2.1: The input voucher system used to deliver smart subsidies**

Source: Adapted from Tiba (2011a)

The voucher system encourages private sector participation since it uses private sector suppliers during the targeting process. It further enhances the development of the private sector input market as suppliers get guaranteed demand and profit margins (Tiba, 2011a).

Other instruments that can be used to target smart subsidies include matching grants to producer organisations. This system is used in Mali and Nigeria. Partial loan guarantees to support the establishment of an input dealer system can also be used. These are used in Malawi and Kenya. Direct distributions implemented by government institutions or input suppliers can also be used (Tiba, 2011a). The voucher system is commonly used and it has both perceived benefits and shortcomings.

In addition to supporting the private sector, it is flexible because the voucher can be converted or modified. However, vouchers can be criticised for incurring relatively high administrative costs (printing, management, targeting smallholders). Thus, the opportunity cost of using vouchers may be relatively high compared with investments into infrastructure, education, or health (Mazwi *et al.*, 2019).

Various recommendations have also been made in enhancing the efficiency of ISPs and reducing leakages. These include the following (Tiba, 2011a):

- discouraging the sale of subsidised input by recipients;
- ensuring that input suppliers are situated locally;
- ensuring that the type of farming inputs matches the crops;
- making the system competitive by involving private sector players;
- sustaining the system over time and staying consistent;
- identifying intended beneficiaries;
- introducing control systems;
- increasing targeting efficiency by limiting ration size; and
- minimising political interference in the programme.

Financial support for fertilizer subsidy programmes can be obtained from various sources including the government, local and international donors and aid agencies. For example, in Malawi, ISPs were initially funded by donors, but later donor funding ceased and the government took over financing the scheme (Tiba, 2011a).

In addition, since agricultural inputs are linked to the agricultural production cycle (rains), the *timing* of ISPs is crucial if the programmes are to succeed. The ISPs should be implemented well before the time farming inputs are expected to be applied to field crops. If the programme is implemented too late, the whole purpose of the investment may be completely defeated. Late delivery of farming inputs because of delays in decision-making and budgeting processes has been a frequent problem in various ISPs in Africa (Tiba, 2011b).

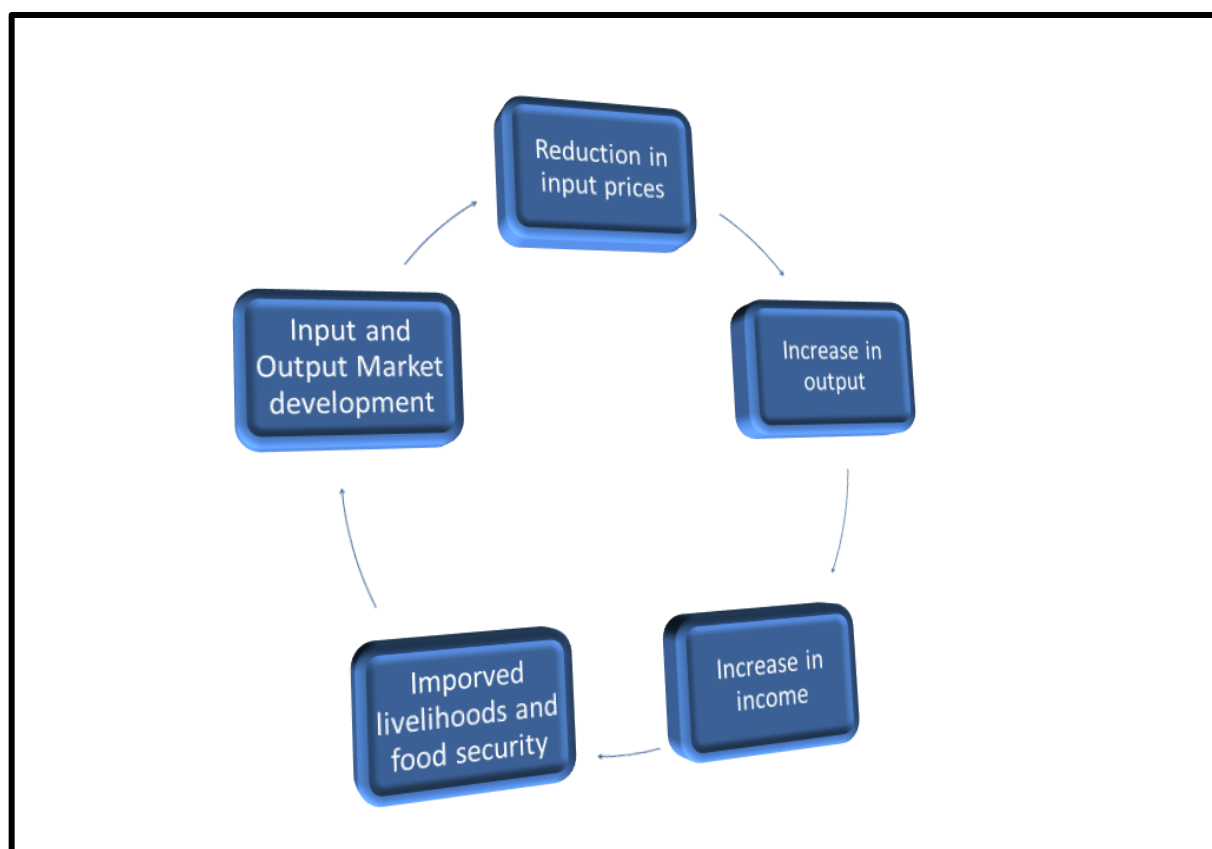
## **2.5 OBJECTIVES, STRENGTHS AND BENEFITS OF INPUT SUBSIDY PROGRAMMES**

ISPs can have several interrelated objectives and can benefit producers in many ways. If properly implemented, subsidies can generate several positive impacts on the economy and many secondary spill over benefits (Tiba, 2011a). For example, Wirakusuma (2020) conducted a study to examine the impact of the disbursement of input subsidies on agricultural productivity in Indonesia. The study adopted propensity score matching analysis on 26,079 rice farm households to examine the impact of input subsidies on the productivity of rice farming. The study found that input subsidies had a

significant effect on the productivity of rice farming. Thus, based on the study's findings, the researcher concluded that the input subsidy policy is an important and relevant instrument to improve the performance of the agricultural sector.

The objectives of ISPs can be grouped into four categories, namely: 1) agricultural policy; 2) economic growth; 3) social protection; and 4) political objectives. For example, Dorward (2009), in a review of 10 subsidy programmes implemented in Africa, found popular programme objectives to include: increasing food production (social protection objective); adoption of farming inputs (agricultural policy objective); and enhancing the welfare of producers (economic growth objective).

In terms of impact, ISPs are expected to positively impact: 1) input prices; 2) output and prices of staple crops; 3) rural wages; 4) input market development; and 5) multiplier effects on other markets (Tiba, 2011a). The positive impacts of ISPs interdependent on each other are depicted the Figure 2.2. The reduction of input prices being the focal point or the first positive impact to be achieved. This means that the achievement of one impact will facilitate the achievement of the other.



**Figure 2.2: The interdependence of ISPs expected positive impacts**

Source: Adapted from Dorward (2009) and Tiba (2011a)

Figure 2.2 shows the expected positive impacts of ISPs as an interdependent cycle. Thus, input subsidies are expected to lower the prices of agricultural inputs. This helps to reduce the production costs of producers, which indirectly increases the income of poorer producers. On the other hand, the policy is financed by richer producers and taxpayers. Availability of farming inputs can further increase the use of the farming inputs by producers which, in turn, is expected to increase agricultural output (Tiba, 2011a). Specifically, input subsidies are expected to improve soil fertility, which is expected to increase the output and productivity of staple crops (Tiba, 2011a). An increase in output is also expected to result in a reduction in the prices of staple crops. In addition, an increase in production is expected to increase the demand for farm labour, which in turn increases the wages paid to farmworkers. This further benefits various stakeholders and households and also producers and suppliers through an increase in the demand for farming inputs (Christiaensen & Pan, 2012). Furthermore, as the market expands and volumes increase, new suppliers, both subsidised and unsubsidised are expected to enter the market. This will result in greater competition, efficiency and economies of scale. Spill-over benefits are expected in the form of expansion in rural markets through a boost in demand for livestock, horticultural crops and non-farm goods and services (Tiba, 2011a). Input subsidies are also expected to provide social protection and strengthen food security at the household and national level by increasing staple crop production and lowering food prices.

Unfortunately, the impacts of ISPs have been difficult to analyse in practice because there is little evidence from implemented subsidy programmes in Africa (Dorward, 2009). It has also been practically challenging to estimate, measure, or collect information on the extent to which subsidy programmes have impacted various economic variables and thus achieved their objectives (Tiba, 2011a). For example, Dorward and Chirwa (2011), based on a Malawian experience, argued that ISPs may reduce food prices and raise agricultural wage rates. They, therefore, suggest that such effects should be incorporated into estimates of ISP benefits. However, research to substantiate these claims is lacking (Jayne & Rashid, 2013).

There were well-publicised initial reports about the success of ISPs that used a targeted input voucher system in Malawi. The president of that country was awarded several prizes after it was claimed that he had turned the country into a food exporter giant. Consequently, other African governments immediately instituted the ISPs (Jayne & Rashid, 2013).

## **2.6 WEAKNESSES AND SHORTCOMINGS OF INPUT SUBSIDY PROGRAMMES**

Similar to other development policies, ISPs can fail to achieve their objectives due to several shortcomings (Wirakusuma, 2020). Various empirical studies have attributed the failure of ISPs to factors such as high distribution and administration costs and inappropriate distribution approaches



to the beneficiaries (Kaur & Sharma, 2012; Nindi, 2020; Shively & Ricker-Gilbert, 2013). In addition, the amount of subsidies distributed usually exceeds the amount needed and this results in misuse and inefficiencies (Kaur & Sharma, 2012; Nindi, 2020). For example, excessive distribution of agricultural inputs can promote an overdose of inputs, which can lead to unnecessary wastages (Wirakusuma, 2020).

Distribution challenges often comprise the quality and quantity of input distributions (Filipski & Taylor, 2012). In addition, input subsidies can adversely affect the performance of agricultural activities in situations where they are accessed by those who have adequate resources to finance their farming activities. In such scenarios, producers with limited resources usually find it difficult to access the subsidised farming inputs (Chirwa & Dorward, 2014).

Additionally, the evaluation of the effectiveness of ISPs has been highly politicised. This explains why these programmes are more popular with politicians and citizens than with those outside the African continent (Jayne & Rashid, 2013). ISPs have been used as a tool through which politicians show their support to their constituencies. This is ideal for the politicians since the beneficiaries of ISPs are identifiable, but the losers are not. Traditionally, the universal subsidy programmes (as explained under Section 2.3) used a system where subsidies were given to producers which would then reduce the price of the farming inputs on the open market. On the other hand, the current system uses a system where input vouchers are distributed directly to household beneficiaries. This distribution of input vouchers has made the beneficiaries more aware of government support as compared to the universal subsidy approach. However, under the direct input vouchers system, the losers are much less visible, and they are usually those who are poorer. Directly purchasing farming inputs for households means that the government has to forgo some other public expenditures on investments. Thus, an opportunity cost occurs if the forgone public expenditures could have provided greater payoffs to agricultural growth and poverty reduction (Jayne & Rashid, 2013).

Fan *et al.* (2008) reviewed the trends in government subsidies and investments in and for Indian agriculture. Their study found that subsidies in credit, fertilizers and irrigation have been crucial for small producers to adopt new technologies during the green revolution in the late 1960s and 1970s. However, currently, investments in agricultural research, education and rural roads are the three most effective public spending items for promoting agricultural growth and reducing poverty. López (2005) also attributed the continued existence and popularity of agricultural subsidy programmes in Latin America to the notion that elites discovered that they are capable of capturing a large part of the benefits of such programmes. This supports the historical assertion by Olson (1965) that under conditions where beneficiaries are organised and losers are dispersed, losers are not easily visible and programmes without technical merit can continue to exist.

ISPs have also been preferred by politicians because of their short-term effects (Jayne & Rashid, 2013). Thus, ISPs can be a powerful tool for raising agricultural production within one crop season. This is however at the expense of public expenditures on crop research and development (R&D) and physical infrastructure which have continuously been found to generate huge benefits to society on a long-term basis (Fan *et al.*, 2008). Politicians the world over tend to prioritise programmes that provide visible payoffs from which they can benefit while still in office (de Mesquita Bruce *et al.*, 2003). As a result, they tend to give more support to ISPs than public investments with long-term payoffs (Jayne & Rashid, 2013). Furthermore, ISPs may also be used by the ruling party to enhance their control over the political process. There is growing evidence that the allocation of input subsidies in terms of local geographical areas is influenced by previous election outcomes (Banful, 2011; Mason & Jayne, 2013). For example, Banful (2011) analysed the effect of politics on voucher allocations in Ghana's 2008 fertilizer subsidy programme. The study found that more vouchers were targeted to districts that the ruling party had lost in the previous presidential elections and more so to districts that had been lost by a higher percentage margin. This evidence showed that a significant threat to the efficiency of fertilizer subsidies remained because of political manipulation (Banful, 2011).

Tiba (2011a) also asserted that the potential shortcomings of ISPs include the following:

- market distortions and stifling private sector investment,
- manipulation for political purposes,
- subsidy not reaching intended beneficiaries because of leakages,
- subsidy not applied to staple crops,
- subsidy not used within the country,
- reliance on exogenous factors and complementary factors and
- high variability of prices.

Thus, subsidies may distort the incentives for private investment in the input market if subsidised sales replace unsubsidised commercial sales. For example, a decline in the demand for commercial fertilizers can discourage the involvement of private sector players. In addition, the targeting and rationing of subsidies may create opportunities for rent-seeking and fraud especially by the politically connected. Furthermore, subsidies might not reach intended beneficiaries (poor producers) due to elite capture and leakages. Also, subsidies might be diverted from the intended staple crops to cash crops (Tiba, 2011a).

Another shortcoming of subsidies is that they might not be used in the country in which the programme is funded. This can happen as a result of syndicates selling the farming inputs outside the country. In addition, any positive impacts of ISPs depend on various external factors such as rainfall patterns and soil fertility. As a result, ISPs become a risky investment. Furthermore, the application of agricultural

inputs requires technical know-how for the programme to succeed. Lack of this knowledge will result in overuse and unnecessary wastages. Also, the fluctuation of input and food crop prices may discourage investment in the input market. This is caused by the seasonal time-lag between the use of the agricultural inputs and the selling of the output. Thus, the economic returns of an ISP depend on how input and output (food crops) prices change during the production cycle (Tiba, 2011a).

The econometric analysis on the characteristics of households receiving farming inputs under ISPs in Malawi, Zambia and Kenya showed that targeted beneficiaries in all three countries were usually richer than non-beneficiaries (Jayne & Rashid, 2013). On the contrary, Liverpool-Tasie and Takeshima (2013) found that in the Kano District of Nigeria, producers who participated in the ISP were poorer than those who did not participate.

## **2.7 INPUT SUBSIDY PROGRAMMES, SMALLHOLDER PRODUCERS' AGRICULTURAL FINANCING AND ECONOMIC AND SOCIAL OUTCOMES**

The effectiveness of an agricultural ISP needs to be assessed concerning its impact on poverty alleviation, ensuring food security and facilitating trade (Cui *et al.*, 2017). Various studies have examined the relationship between input subsidies and agricultural productivity and reached different conclusions (Wirakusuma, 2020). While some studies found that input subsidies increase agricultural output and productivity (Alston & James, 2002; Nasrin *et al.*, 2018), others found that input subsidies significantly reduce farm output and productivity (Blancard *et al.*, 2006; Ciaian & Swinnen, 2009).

Nasrin *et al.* (2018) conducted a study to assess the impact of fertilizer subsidy on farming efficiency on different farm structures under a universal subsidy policy in Bangladesh. Interviews were conducted with 300 farm households located in three districts from the northern part of Bangladesh. Multi-stage purposive sampling and Data Envelopment Analysis (DEA) were used to sample and analyse data respectively. The study found that the fertilizer subsidy had a significant impact on improving farming efficiencies and productivity for marginal and small farms in study areas while leaving an insignificant impact for medium and large farms.

Similarly, Ramli *et al.* (2012) used a system dynamic model approach at national-level data in Malaysia. The study found that subsidies have a significant impact on the rice industries. Fertilizer subsidies were found to increase yields and hence increase rice production while the elimination of fertilizer subsidies reduced rice production and consequently reduced the level of self-sufficiency.

On the contrary, other studies found that subsidies reduced crop yields. For example, Malan and Berkhout (2016) quantitatively assessed the impact of agricultural pricing policies on crop yields by analysing the factors that explain changes in yields of major crops in the 22 largest economies in

Africa, over multiple periods (1961 to 2010). The study found that although agricultural subsidies and higher prices are expected to motivate producers to invest in crop productivity, there was no evidence of such a positive relationship between subsidies and crop yields. The study found that subsidies negatively affected the yield of maize, sugar and wheat. This suggests that subsidies may reduce crop yields. The authors suggested that this was possible because the overinvestment in subsidised farming inputs led to allocative inefficiency, lack of effort and limited competition. Similarly, even from a developed country perspective, Rizov *et al.* (2013) found that subsidies negatively affected farm productivity. Their study investigated the impact of the Common Agricultural Policy (CAP) subsidies on farm total factor productivity (TFP) in the European Union (EU) using a structural semi-parametric estimation algorithm that directly incorporated the effect of subsidies into a model of unobserved productivity.

Mulyadiana *et al.* (2018) also evaluated the fertilizer subsidy policy in Karanganyar District in Indonesia using a descriptive analysis approach and multiple linear regression. The study found that based on four indicators, subsidy distribution was not effective because the distribution of fertilizer subsidies to producers experienced serious shortcomings. However, the regression analysis showed that the effectiveness of the fertilizer subsidy policy had a positive effect on rice production. This indicated that if the subsidy programme is run effectively, it will increase crop yield.

Lunduka *et al.* (2013) critically analysed the studies that evaluated Malawi's Farm Input Subsidy Programme (FISP). The main objectives of the FISP were to increase maize production, promote household food security and enhance rural incomes. Their analyses found that national production estimates suggested dramatic increases in maize output and productivity during the years of the FISP. On the contrary, the farm-level studies found relatively modest increases in maize output and yields over the same period. Only modest maize production increases are supported by the fact that there has been a relative increase in real maize prices during the same period. In addition, the country continued to import maize during most of the subsidy programme years. Still on the maize import issues, Zimbabwe banned import of maize and all maize products in May 2021, because they had a bumper harvest in the 2021 farming season (Timeslive, 2021). Furthermore, there is research evidence that wealthier households in Malawi gained substantially more than poorer households when they participated in the programme. This compromised the FISP's ability to reduce food insecurity and poverty (Lunduka *et al.*, 2013).

Reaching a consensus on the effectiveness of ISPs in achieving national policy objectives has been very difficult. Fertilizer subsidy programmes remain one of the most debatable policy initiatives in Africa. This is further exacerbated by the fact that the literature on these programmes has been sharply divided (Jayne & Rashid, 2013). For example, Dorward (2009) asserted that the majority of

subsidy programmes implemented in Africa have been quite significant and have subsidised farming inputs prices by at least 50 percent to make the inputs affordable for producers (Dorward, 2009).

Evaluating the effectiveness of ISPs depends on the initial objectives and justifications such as those discussed under Section 2.5. Indicators of impact can be grouped into four categories, namely: 1) programme characteristics and impact on 2) economic development, 3) production and 4) input market. Evaluating programme characteristics include assessing the timing of input distribution, ways to monitor performance and conducting a cost-benefit analysis. On the other hand, the economic impact can be assessed through changes in the prices of agricultural inputs and outputs, the impact of the ISP on wages and salaries and the impact on market growth and consumer welfare. Impact on production will usually assess an increase in production and productivity and replenishing of soil fertility. Lastly, when evaluating the effect of the ISPs on the input market, assessors usually check for leakages of the subsidy, displacement of commercial sales (private sector sales) and increase in input use (Tiba, 2011a).

Mason *et al.* (2013) reviewed the ISP in Zambia since the structural adjustment which happened in 1992. Their study also synthesised existing programmes – and presents new empirical evidence on the programmes' outcomes and effects. The study found that the majority of the ISP fertilizer beneficiaries were households that cultivated larger areas. In addition, holding other factors constant, richer households received more subsidised agricultural inputs than poorer ones. Furthermore, as a result of low maize-fertilizer response rates, poor targeting, crowding out (crowding out is defined by Al-Majali (2018) as the rising of public sector spending, which drives down or even eliminates private sector spending) and diversion of fertilizer intended for the programme; the financial cost-benefit ratios for the ISPs were very low. As a result, the authors recommended that the scheme should be downsized and its savings invested in pro-poor agricultural support activities.

In other countries, the results for the impact of ISPs on various outcomes have been mixed. For example, Chibwana *et al.* (2014) conducted a study to measure the farm-level impacts of Malawi's FISP on fertilizer use and maize yields in central and southern Malawi. The FISP was intended to benefit both the most vulnerable farm households, as well as those having sufficient land to make use of the subsidised seed and fertilizer. Their study used multiple rounds of panel data and an instrumental variable regression strategy. The findings indicated a positive result, i.e. that participation in the ISP resulted in significantly increased fertilizer use intensity (Chibwana *et al.*, 2014). However, on the downside, the study found that the most vulnerable people in the communities were not the main recipients of the input vouchers. In addition, although female-headed households were intended to be targeted, they were less likely to benefit from the programme than male-headed households. Similarly, poor households were less likely to participate in the FISP compared to richer households.

The selection of beneficiaries appeared mainly to have reflected other factors, such as; whether a household received coupons in the previous year, length of residency and whether the village had been established for long (Chibwana *et al.*, 2014). The author suggested a conservative approach to targeting where the focus would be on those producers with capabilities to produce, while at the same time providing safety nets for those most vulnerable and least likely to make productive use of the farming inputs (Chibwana *et al.*, 2014). In addition, the study observed that the ISP placed too much emphasis on fertilizer use, ignoring other farming inputs such as improved seed. However, given the differences in yield between seed varieties, the study recommended shifting emphasis to the promotion of the use of hybrid seed in the subsidy programme (Chibwana *et al.*, 2014).

Similarly, Holden and Lunduka (2013) assessed the extent of leakages of coupons and fertilizers and the targeting efficiency of Malawi's fertilizer and seed ISP. On a positive note, the study found that the programme enhanced food production and food security. However, it did not target the poor better than a programme that distributes inputs randomly. Corruption and targeting errors led to local frustration and conflicts. The other challenges experienced included difficulties in establishing a credible population base, developing clear targeting criteria and establishing a system for beneficiary selection and targeting. In addition, leakages of coupons, failure to ensure cost-efficient imports and timely distribution of the agricultural inputs and illegal markets for coupons and fertilizers were also detrimental (Holden & Lunduka, 2013).

Jayne *et al.* (2013) assert that another crucial determinant of ISPs effects on the achievement of national policy goals is the extent to which they raise total input use amongst producers. They conducted a study to synthesise the literature on how the new generation of smart subsidies has affected national fertilizer use in Kenya, Malawi and Zambia. The study found that the diversion of ISPs fertilizers was significant and greatly overstated estimates of how ISPs affected total fertilizer use and programme impacts. Results showed that at least one-third of the programme's farming inputs were diverted before being received by intended beneficiary producers. In addition, the incremental value of maize output produced from these ISPs was considerably less than their costs in most years. The authors recommended that greater attention to programme design and implementation details to reduce problems of crowding out and diversion can substantially raise the returns to ISPs.

Smart ISPs are also expected to support private sector input distribution systems and not displace them. Results in this regard have been mixed. The estimates of crowding out and diversion have shown that private sector input sales have been depressed by ISPs using survey data in countries where the analysis was done (Jayne & Rashid, 2013). On the other hand, some private firms have indeed benefited greatly from ISPs. For example, Dorward *et al.* (2008) reported that in Malawi,

importers/distributors who were allowed to distribute fertilizers on behalf of the government experienced increased fertilizer sales from the ISP. Similarly, evidence from Kenya indicated that many private retailers experienced increased business resulting from producers' beneficiaries under the ISP redeeming subsidy vouchers at their stores (Jayne & Rashid, 2013). In addition, Liverpool-Tasie and Takeshima (2013) reported that private sector retailers experienced increased sales resulting from the new subsidy programme in Nigeria.

In some countries the results were mixed. For example, in Zambia, Xu *et al.* (2009) conducted a study, to measure the contemporaneous crowding in and crowding out effects of ISP on private sector fertilizer sales. The study used a double hurdle model and nationally representative rural household panel data in Zambia. The study found that where the private sector is active and the community generally richer, subsidies displaced commercial input sales. In some cases, this happened to the point that such ISPs could lower overall fertilizer use. On the other hand, in poorer areas where the private sector is relatively inactive, subsidies helped to generate demand which in turn created opportunities for private sector retailers. The evidence of ISPs impacts on private sector input sales, therefore, seemed to vary greatly by the way the programmes were implemented. The main variables included whether authorities allowed vouchers to be redeemable at private dealers' shops and in the case of importers and wholesalers, whether they were chosen to distribute government owned farming inputs (Jayne & Rashid, 2013).

Empirical evidence in support of the positive effect of ISPs on agricultural growth and poverty alleviation is far from being convincing (Jayne & Rashid, 2013). For example, EIU (2008) conducted a study to estimate the contribution of various types of public investments and strategies to agricultural growth and poverty alleviation in six Asian countries, namely China, India, Indonesia, South Korea, Taiwan and Vietnam. The study found that producers' incentives, agricultural output growth and private investment in agriculture were significantly improved by policies on land and output ownership and rights and agricultural market liberalisation. In addition, investment in crop science R&D, rural roads, electricity, health and education were also found to have higher returns in terms of agricultural returns and poverty alleviation. On the other hand, public investment in ISPs showed very modest returns. The success of these schemes was further dependent on a combination of other factors such as water control, improved seed varieties and fertilizer application (EIU, 2008).

Similar results were obtained in India (Fan *et al.*, 2008). The Indian study carried out an in-depth analysis of India to identify the returns to various types of public expenditures over 40 years. The findings indicated that in the initial stages, most public investments in agriculture generated higher returns in terms of both agricultural growth and poverty alleviation. Even so, the highest returns were obtained on public investments in roads and education. This was followed by investment in agricultural

research, irrigation, fertilizer and credit subsidies. Power and irrigation subsidies generated the lowest returns during the initial periods. However, with time, the returns on most of the subsidy programmes began to decline. Even so, investments in agricultural research and development, irrigation, roads and education still provided the highest returns. On the contrary, credit, power and input subsidies began to have negative net returns (Fan *et al.*, 2008).

There is consensus on the empirical evidence in Africa that ISPs raised national food production (Liverpool-Tasie & Takeshima, 2013; Lunduka *et al.*, 2013; Mason *et al.*, 2013). However, the effects of ISPs are not uniform across farms of different sizes and producers of different wealth. It has been observed that poorer farmers received proportionately fewer subsidies than wealthier farmers (Jayne & Rashid, 2013). In addition, many households at the bottom of the income distribution seem to be unable to generate a substantial response from the subsidised fertilizers acquired (Jayne & Rashid, 2013). Thus, although national production has increased, the increase has been concentrated in the hands of a smaller number of wealthier producers. This has derailed the drive towards a reduction in rural poverty rates in general (Jayne & Rashid, 2013).

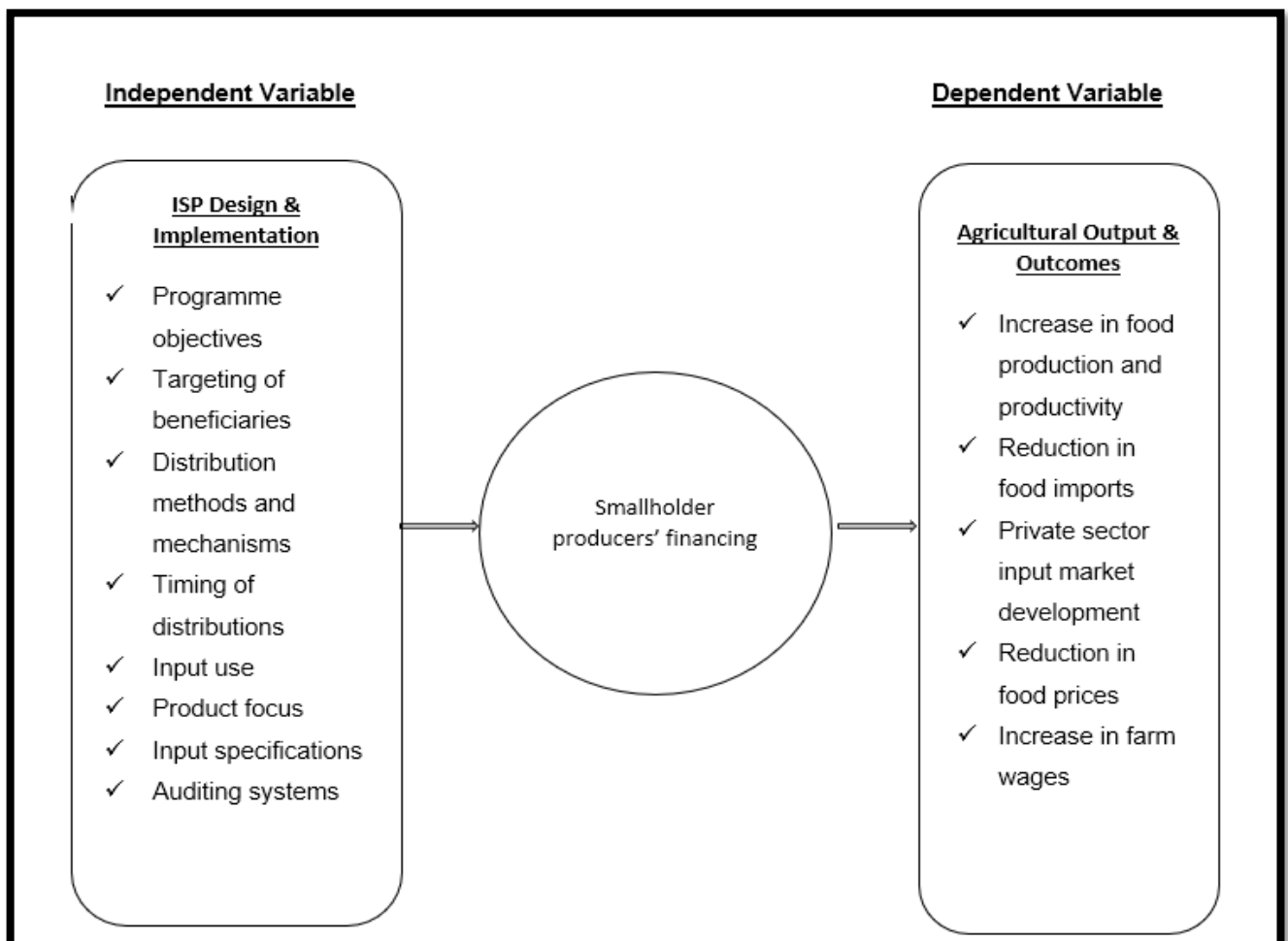
The findings on the effect of ISPs on the prices of crops and wages have not been very encouraging. For example, Ricker-Gilbert (2013) examined the impact of the fertilizer subsidy programme on agricultural labour supply, labour demand and wage rates in Malawi. The study found that the ISP had a small negative effect on household labour supply and a small positive effect on labour demand. The study also found that non-beneficiaries of subsidised fertilizer may have gained some small spill-over benefit from the subsidy programme in the form of slightly higher agricultural wage rates (Ricker-Gilbert, 2013). However, the study did not quantify these indirect benefits from ISPs, which would have provided a complete picture of their effects (Jayne & Rashid, 2013).

On the other hand, Ricker-Gilbert *et al.* (2013) assert that an important hypothesised benefit of large-scale ISPs in Africa was that by raising maize production, the subsidies should result in a decrease in the retail price of maize. This would benefit urban consumers and the poorer in the rural areas which were net food buyers. They carried out a study to estimate the effects of fertilizer subsidies on retail maize prices in Malawi and Zambia. Their study used to market or district-level panel data covering 2000/2001 to 2011/2012 maize marketing years. The findings indicated that, although increasing the amount of the ISP reduced maize prices, the magnitude of the reduction was very small, minimal and disproportionate.



## 2.8 CONCEPTUAL FRAMEWORK

A conceptual framework is a means of explaining why a research topic is important both practically and theoretically as well as detailing how the research method will answer the research questions in a study (Ravitch & Riggan, 2016). Ravitch and Riggan (2016) further explained that a conceptual framework is simply the current version of the researcher’s map of the territory being investigated, in this case, exploring Command Agriculture ISP. Figure 2.3 shows a conceptual framework mapping the independent and dependent variables of the Command Agriculture ISP in relation to the literature review findings in the above sections and the research questions in the research instruments. The conceptual framework is strongly influenced by sections 2.2 to 2.7 of this chapter. Both the literature review and the conceptual framework were used to design the research instruments in Appendix I and II. This was done to show how the literature and the current study can be corroborated to bring out informative research results.



**Figure 2.3: Conceptual framework**

Source: Author’s own compilation

This study assessed the effectiveness of the Command Agriculture scheme (an ISP) as a tool to provide financing to smallholder producers in Zimbabwe. As shown in Figure 2.3 above, the success or failure of an ISP assumed to depend on the programme design and implementation. The components of ISP design and implementation include programme objectives, targeting methods, distribution methods and mechanisms, the timing of distributions, input use, product focus, input specifications and auditing systems.

On the other hand, if an ISP has been effective in providing financial support to smallholder producers, that is expected to result in a positive effect on agricultural output and outcomes. Such outputs and outcomes include: increase in food production and productivity, a reduction in food imports, private sector input market development, a reduction in food prices and an increase in farm wages.

## **2.9 SUMMARY**

The main objective of this chapter was to address the theoretical secondary objective (Chapter 1), which was to review the relevant literature on input subsidy programmes and other agricultural financing schemes for smallholder producers. The chapter started by explaining the historical conceptualisation of ISPs in Africa and the rest of the world. The historical conceptualisation of the ISPs shows how the programmes started and evolved overtime. It also showed how some of these schemes failed or thrived. Some of the subsidies failed because sometimes the cost of the schemes exceeded the benefits obtained and also how these challenges negatively contributed to government budget deficits and macroeconomic imbalances. Some of the subsidies thrived because there will be cordial donor-government relationships.

The chapter also outlined various models of ISPs such as the old universal subsidies and smart subsidies which are operated using the voucher system. Universal subsidies were used in the nineties and eighties and they target mostly the large-scale producers whilst smart subsidies are more modern and they are mainly tailor made to accommodate smallholder producers. In addition, some authors gave recommendation on how the current smart subsidies can be improved. These recommendations included, reducing leakages by discouraging the resale of subsidised farming inputs and introducing strict control and audit systems.

The chapter further presented the extant literature on the objectives, strengths and weakness of ISPs. Most ISPs aim to achieve objectives like agricultural policy, economic growth, social protection and political influences whilst they are prone to weaknesses like distribution challenges, climate changes and manipulation for political purposes. Economic and social outcomes of providing agricultural financing for smallholder producers through ISPs were also outlined.

In conclusion, the chapter ended with a conceptual framework to indicate the study's relationship with the ideas found in the literature review and how they relate to this study as a whole. The conceptual framework mapped the independent and dependent variables of the Command Agriculture ISP with reference to the literature review findings and the research objectives or research questions.

The next chapter articulates the research methodology followed in carrying out this study.

## CHAPTER 3: RESEARCH METHODOLOGY

### 3.1 INTRODUCTION

The previous chapter provided a comprehensive literature review on the ISPs and other smallholder producers agricultural financing schemes. The main objective of this study is to examine the Command Agriculture ISP as a source of funding for smallholder producers in Zimbabwe. To give credible results on the topic under study, there is a need to present the research methodology followed by the researcher, which is the main aim of this chapter. The research methodology was described using the honeycomb of research methodology by Wilson (2014). Hence, the chapter will describe the following elements of the honeycomb: (1) research philosophy; (2) research approach; (3) research strategy; (4) research design; (5) data collection; and (6) data analysis techniques. Additional to the elements of the honeycomb, the chapter will then end with the process of recruiting participants, the imperatives of ethical considerations during this study and the chapter summary.

#### 3.1.1 Purposes and goals of research methodologies

A research methodology is a contextual framework that is based on beliefs and values that guides the researcher when carrying out a research study by making use of particular methods and philosophies (Creswell, 2007). Venable and Baskerville (2012) demarcated the purposes of research methodologies into primary purposes and practical purposes. They further articulated those primary purposes of research methodologies to include both general purposes and goals that are specific to the study with rigour and relevance being the general primary goals of research methodology. Both the primary and practical goals are described below under separate headings.

**Primary goals:** As mentioned above, primary goals consist of general goals (rigour and relevance) and those that are specific to the study. Research methodologies should seek to answer or give credible results on the main objectives of the studies being carried out (Venable & Baskerville, 2012). These are the goals being referred to as those that are specific to the study. Rigour is concerned with the reliability of research, which means that properly following a research method should ensure that the research findings are true and the probability of finding false results is sufficiently low (Venable & Baskerville, 2012). On the other hand, relevance is concerned with whether the findings are useful either to theory or further research. This study focused on contributing to the existing body of knowledge on the various forms of funding that can be used by smallholder producers worldwide and then more specifically in Zimbabwe.

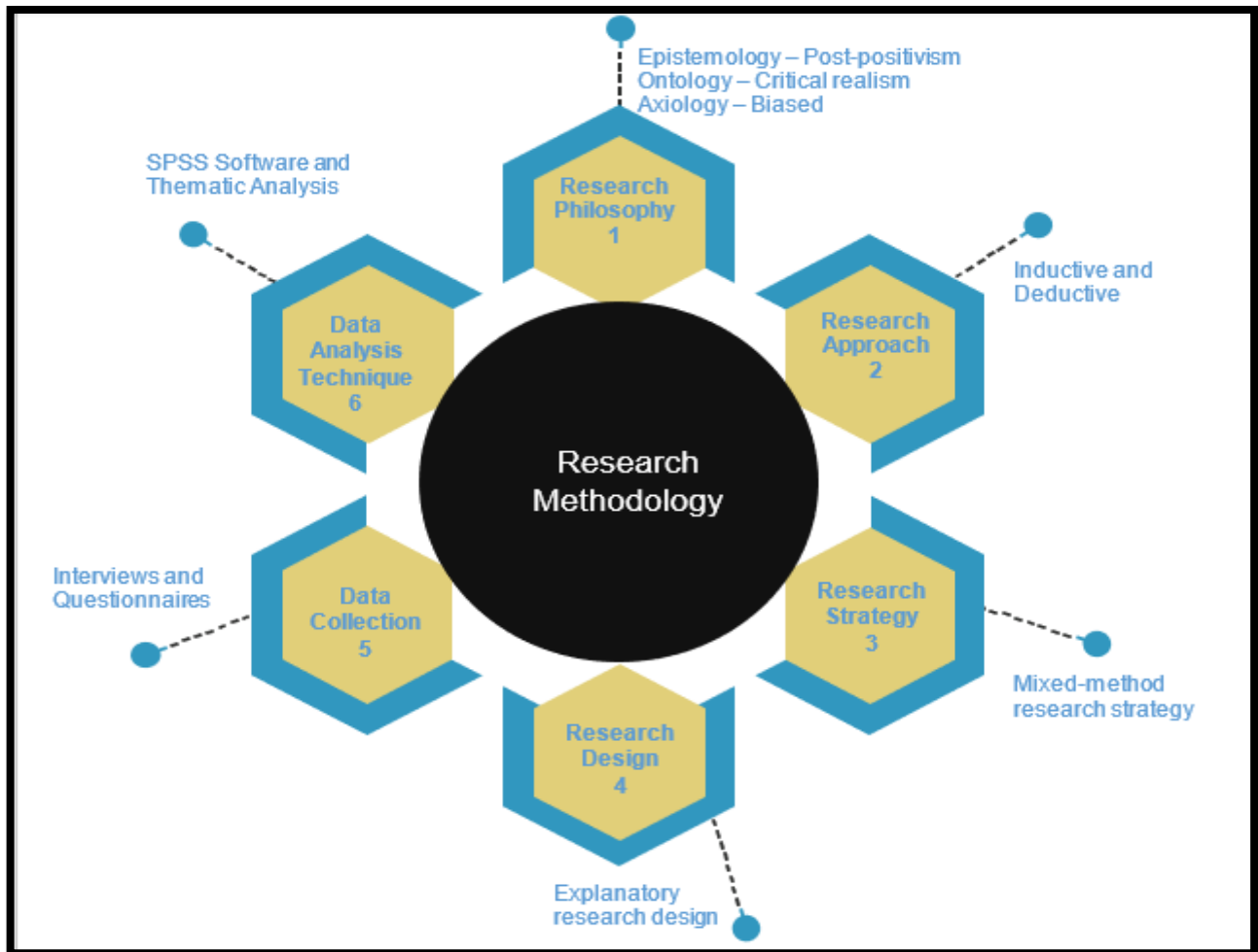
In line with this study, the primary goal is to examine the Command Agriculture ISP as a source of funding for smallholder producers in Zimbabwe. To give true and fair results the researcher applied

the honeycomb of research methodology which clearly defines the steps taken in attaining reliable data. In addition, this study focused on contributing to the existing body of knowledge on the various forms of funding that can be used by smallholder producers worldwide and then focused on Zimbabwe.

**Practical goals:** According to Venable and Baskerville (2012) there are various practical goals of research methodologies, which can be applied and assist in reaching the above-mentioned primary goals. These goals may include: 1) ease of learning; 2) ease of use; 3) the ability to deal with people and research subjects; and 4) depth of engagement with research subjects.

The practical goal of this study is to add to the body of existing knowledge on the use of ISPs as a source of agricultural funding for smallholder producers and other various forms of agricultural financing schemes.

The research methodology followed in this study is described below, applying the honeycomb of research methodology developed by Wilson (2014) and is presented in Figure 3.2.



**Figure 3.1: The honeycomb of research methodology**

Source: Adapted from Wilson (2014)

Figure 3.2 shows the elements as numbered segments, but the use of the honeycomb illustrates that the research methodology thought process may not necessarily be linear (Wilson, 2014). The honeycomb shows the six elements combined to form the inner segment which is the research methodology. These six elements were used as a framework for the presentation of the research methodology and each is explained below under separate headings.

### **3.2 RESEARCH PHILOSOPHY AND PARADIGMATIC ASSUMPTIONS**

Research philosophy is linked to the researcher’s view on the development of knowledge (Wilson, 2014). The research paradigms are important as they define a researcher’s philosophical orientation and they influence every decision made throughout the research process including the choice of research methods and methodology (Kivunja & Kuyini, 2017).

According to Davies and Fisher (2018), to better understand research methodology, researchers need an understanding of the research philosophies and paradigms. Paradigms are described as different ways of viewing the world and often form the foundation from which research is undertaken (Davies & Fisher, 2018). Davies and Fisher (2018) further explained that paradigms and philosophies consist of a set of assumptions about what is reality, how knowledge is created and what is valuable to learn.

The following paradigmatic assumptions were followed under this study:

### **3.2.1 Epistemological assumptions**

Epistemology is defined as the way of understanding and explaining how people know what they know (Crotty, 1998; Guba & Lincoln, 1982). Crotty (1998) further explained that epistemology provides philosophical grounds about the kind of knowledge that is possible and how to ensure that it is legitimate and adequate. Epistemology has various stances namely interpretivism, positivism, post-positivism and pragmatism (Wilson, 2014). Interpretivism involves the extraction of knowledge through human interaction, while positivism means that the mind of the investigator is separate from the world of objects of what is being investigated (Crotty, 1998). Post-positivist paradigm evolved from the positivist. It is concerned with the subjectivity of reality and moves away from the purely objective stance used by the logical positivists (Ryan, 2006:17). Pragmatism is described by Wilson (2014) as an epistemological stance that recognises the importance of both the physical and social world and it does not align itself with anyone philosophical stance (interpretivism or positivism).

This research study adopted the post-positivistic stance of epistemology to construct knowledge of the effectiveness of the Command Agriculture ISP. According to Ryan (2006), post-positivism is generally viewed as the most popular paradigm for mixed methods research. Mixed methods research is the fusion of both numerical and non-numerical ways of collecting research data (Maarouf, 2019). Post-positivist emphasise placing the research problem and the research question at the centre of the research and also, focus more on solving real world problems (Ihuah & Eaton, 2013).

This research aimed at solving a real-world problem which is the lack of financing for smallholder producers in Zimbabwe. The research problem was placed at the centre of the research and made use of structured questionnaires and semi-structured interviews to provide meaningful insights for the study. The use of these methods is considered as mixed-method research (Wilson, 2014). The data collection methods are described comprehensively later in this chapter (Section 3.6).

### 3.2.2 Ontological assumptions

Ontology is defined by Scotland (2012) as a branch of philosophy that is focused on the nature of being or reality. It helps the researcher to conceptualise the form and nature of reality as well as what is believed to be known about that reality (Scotland, 2012). According to Guba and Lincoln (1982), ontology has two stances, objectivism and subjectivism. Subjectivism is when a researcher believes that the actions and perceptions of participants create a social phenomenon whilst objectivism is when a researcher believes that the world is external to social actors. However, Sayer (2004) stated that with the increased use of mixed-method research, critical realism can be used by a researcher as an ontological position. Critical realism is defined as a philosophical approach that combines both objectivism and subjectivism and it allows a researcher to collect the widest possible range of views and interpretations (Cohen *et al.*, 2011).

Table 3.1 clearly shows the characteristics of both the subjectivism and the objectivism ontological stances.

**Table 3.1: Characteristics of objectivism and subjectivism**

Objectivism	Subjectivism
<ul style="list-style-type: none"> <li>Independent – beyond the participants’ and researcher’s influence</li> </ul>	<ul style="list-style-type: none"> <li>Participants’ and researcher’s experiences and their meanings are continually adapted (dependent)</li> </ul>
<ul style="list-style-type: none"> <li>Existing facts, which can be measured and analysed</li> </ul>	<ul style="list-style-type: none"> <li>Constant revision of reality</li> </ul>
<ul style="list-style-type: none"> <li>Independent of researcher’s experience</li> </ul>	<ul style="list-style-type: none"> <li>Influenced by researcher and stakeholder perceptions</li> </ul>

Source: Adapted from Cohen *et al.* (2011)

Table 3.1 describes the characteristics of both objectivism and subjectivism ontological stances. Objectivism reflects independence from the research topic. Existing facts are measured and analysed while the researcher is not directly involved and, therefore, the research study is not part of the researcher’s experience. Subjectivism, on the other hand, shows the close involvement of the researcher with the research study. The research experiences are continually adapted and re-evaluated by the researcher (Bryman, 2008). When a researcher is both objective and subjective when carrying out a study it is referred to as critical realism (Sayer, 2004).



According to Sayer (2004), critical realism is believed to be closely linked to the pragmatic epistemological stance discussed above. It allows the researcher to collect the widest and possible range of views and interpretations (Cohen *et al.*, 2011). As a result of using a pragmatic epistemological stance due to mixed methods, critical realism was used as the researcher's ontological position or stance.

### **3.2.3 Axiology**

Axiology, along with epistemology and ontology forms part of the first element of the honeycomb of research methodology (Figure 3.2). Axiology refers to the role of value inquiry in research (Wilson, 2014). Axiology goes hand in hand with ethical considerations, which will also be discussed later in Section 3.9 of this chapter. According to Biddle and Schafft (2015), the values of the researcher play an important role throughout the entire research process. This is the role that the researcher's perceptions play in the research. Axiology can either be value-free or biased. The axiology for this study was biased, meaning that the researcher's values and morals were considered throughout this study and the researcher was committed to producing credible results.

## **3.3 RESEARCH APPROACH**

The second element of the honeycomb model is the research approach. The research approach can either be inductive or deductive (Wilson, 2014). The inductive approach was defined by Hyde (2000) as a theory-building process that starts with observation of specific instances and seeking to provide generalisation about the topic under study. This approach is referred to as theory-building because it allows researchers to start with an observation and then end as a theory by analysing data collected during the research process (Wilson, 2014). On the other hand, a deductive approach is an approach that tests an existing theory by mostly formulation a hypothesis i.e., testing the participants' perspectives on the use of Command Agriculture ISP as a source of agricultural finance (Wilson, 2014). This research adopted the inductive research approach as the use of ISPs as a source of funding for smallholder producers has already been under observation. Through conducting both a literature review and an empirical study, the results created a platform through which this dissertation can contribute to the body of knowledge that already existed.

## **3.4 RESEARCH STRATEGY**

The research strategy for this study included both of the existing research strategies, these being qualitative and quantitative. The quantitative method of research is associated with numerical analysis and numerical data collection tools such as questionnaires (Creswell & Creswell, 2005). The qualitative research method is deemed to be subjective and it involves data collection methods such

as interviews and focus groups (Creswell & Creswell, 2005). Wilson (2014) noted that researchers are increasingly using mixed method research because it assists in maximising the advantages and minimising the disadvantages of qualitative and quantitative research strategies. Also, pragmatism as described above, allows the mix of research strategies that are needed to complete the research on exploring Command Agriculture ISP as a source of funding for smallholder producers.

The relationship between the research strategy, research approach and research philosophies described above is presented in Table 3.2, with those applied in this study highlighted in bold.

**Table 3.2: Relationship between research philosophies, strategies and approaches**

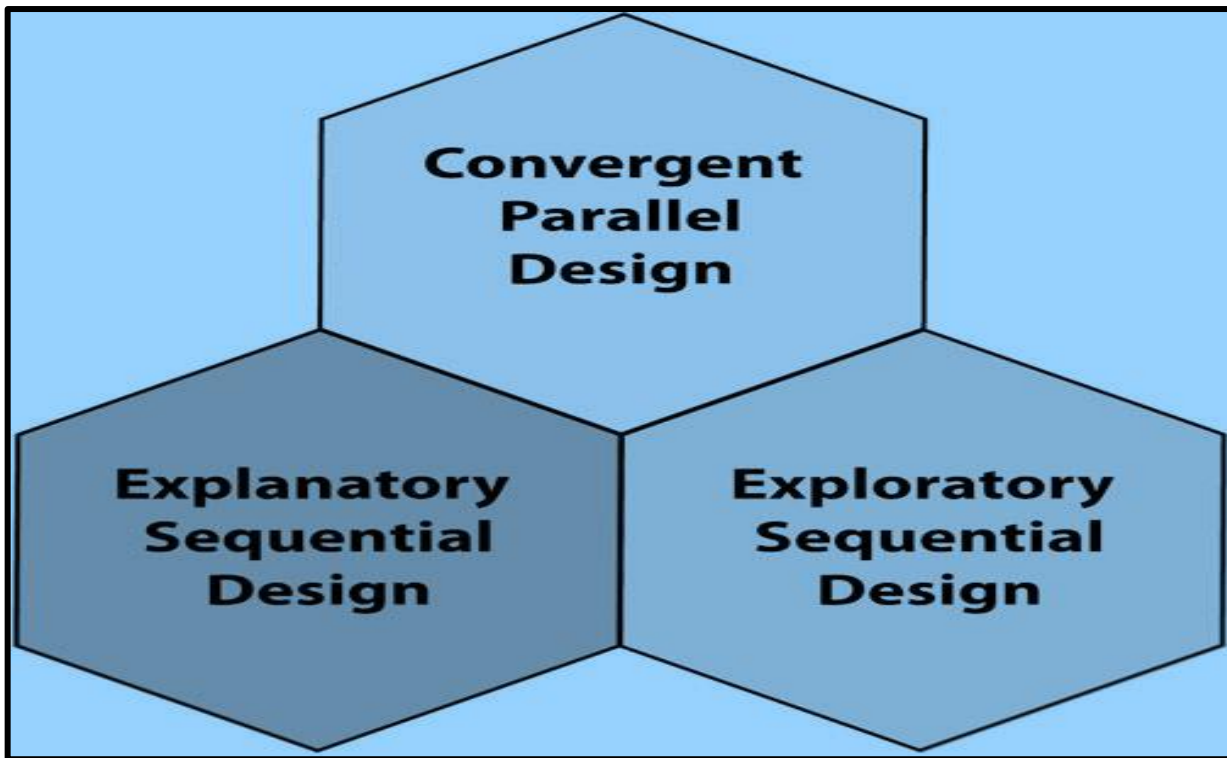
<b>Epistemology</b>	<b>Research approach</b>	<b>Ontology</b>	<b>Axiology</b>	<b>Research strategy</b>
Positivism	Deductive	Objective	Value-free	Quantitative
Interpretivism	Inductive	Subjective	Biased	Qualitative/Mixed methods
Post-positivism	Inductive	Objective and subjective (critical realism)	Biased	Quantitative and qualitative

Source: Adapted from Wilson (2014:19)

Table 3.2 shows the link between epistemology, ontology, axiology with the research strategies and approaches. Those applicable to this study are highlighted. These form part of the first elements of the honeycomb model in Figure 3.2. This study followed an inductive research approach supported by the post-positivistic epistemological stance and critical realism ontological stance making use of the mixed-method research strategy.

### 3.5 RESEARCH DESIGN

Research design is the fourth element of the honeycomb of research methodology. The honeycomb shows several research designs that can be followed. It also lists some designs that do not apply to this study, including case study, experimental and longitudinal. When using the mixed methods research strategy, three research designs can be applied to integrate both the qualitative and quantitative data. This is depicted in Figure 3.2.



**Figure 3.2: Three ways to combine qualitative and quantitative (mixed-methods) research**

Source: Sauro (2015)

Figure 3.2 shows three research designs in which qualitative data and quantitative data can be combined or collected. According to Sauro (2015), the data can be collected using:

- Convergent parallel design – that is when the interviews and questionnaires are administered to the participants concurrently.
- Explanatory sequential design – that is when quantitative data are collected first before collecting qualitative data.
- Exploratory sequential design – that is when the qualitative data collection process precedes the quantitative data collection process.

As per Section 1.5.3, there are limited studies concerning the use of Command Agriculture ISP as a source of funding for smallholder producers in Zimbabwe. A convergent parallel research design was therefore followed (Creswell, 2007:71; Ivankova *et al.*, 2020:336). Quantitative and qualitative data were collected con-currently, i.e. as questionnaires were being answered online, interviews were also being carried out. Quantitative data provided an overview of the research problem whilst qualitative data refined and extend the quantitative data collected (Ivankova *et al.*, 2020:336). The researcher used structured questionnaires (quantitative) and semi-structured interviews (qualitative) to examine the Command Agriculture ISP. The questionnaires were structured using an online survey tool

(QuestionPro) and the link to the questionnaire was then sent to the smallholder producers. The semi-structured interviews were conducted both telephonically and in person in line with the Covid-19 protocols.

### **3.6 DATA COLLECTION**

This section will describe the development of the data collection tools used for this study.

#### **3.6.1 Data collection tools**

As mentioned previously, this study collected both quantitative and qualitative data. Quantitative data were collected using questionnaires while qualitative data were collected by carrying out interviews. The interviews were semi-structured and the questionnaires consisted of Likert-scales and closed-ended questions. Chauhan (2019) averred those semi-structured interviews allow the researcher to obtain a comprehensive picture of the participant's opinions and perceptions leaving room for new issues that may emerge during the interview. According to Barua (2013), a questionnaire with Likert-scales and closed-ended questions allows respondents to specify their level of agreement or disagreement on a symmetric agree or disagree scale for a series of statements. Hence, the researcher made use of these tools to research the topic under study.

#### **3.6.2 Development of data collection tools**

The development of data collection tools along with the data collection process for mixed-method research can either be concurrent or sequential (Creswell & Creswell, 2005). When both the interviews and questionnaires are carried out at the same time, the process is believed to be concurrent and if they are carried out at different times the process is deemed to be sequential. The questionnaires, as well as the interview questions, were developed based on the detailed literature review of the topic under study. However, the interview questions were mainly based on the literature as well as data or trends derived from answered questionnaires. The reason being that data were collected sequentially starting with sending closed-ended questionnaires to the smallholder producers and then conducting interviews with relevant officials of the Command Agriculture ISP.

#### **3.6.3 Questionnaire design**

The questionnaire was rigorously developed in line with Babbie's (2020) guidelines who also emphasised that careful planning is required when formulating a questionnaire so that high-quality relevant data can be obtained. Additionally, a questionnaire is a more useful data collection method

if the participants know what they are being asked and the targeted participants can be easily identified (Babbie, 2020).

The researcher followed the following guidelines provided by Babbie (2020) in the preparation of the questionnaire:

- Ensuring that the questions are clear and understandable;
- Use of short and precise sentences;
- Staying clear of double-barrelled questions or statements; and
- Convenient type of questions, i.e. closed-ended questions.

The smallholder producers were asked questions such as to scale the advantages and disadvantages of using the Command Agriculture ISP as a source of funding, as well as rating the effects of the programme on the production costs.

The questionnaire guide consists of the following headings and the structure thereof can be accessed under Appendix I.

- General questions and demographics
- Advantages of using Command Agriculture ISP as a source of funding
- Disadvantages of using Command Agriculture ISP as sources of funding
- Future and outcome of the Command Agriculture ISP

Table 3.3 shows the questions in the questionnaire and how they relate to both the study and the literature reviewed.

**Table 3.3: Reference of the questionnaire to the study and the literature**

Question	Reference to the literature and the study
<i>Section A: General questions and demographics</i>	
1. How long have you been using Command Agriculture ISP as a source of funding? (1-5 years)	To determine the producer’s experience with the Command Agriculture ISP.
2. Can you please indicate whether you are a landowner or a manager?	Land ownership has been identified as one of the factors determining access to credit facilities for farmers (Mbugua, 2013).

<p>3. According to the Zimbabwean Government, can you please indicate the size of your farm/land (<i>Below 6 hectares; A1 (6 hectares); and A2 (Above 6 Hectares)</i>)</p> <p>4. Can you please specify your gender?</p> <p>5. Can you please specify your educational level? (<i>Primary school level, Ordinary level, Advanced level, or Tertiary level</i>)</p> <p>6. Can you please indicate your age? (<i>Less than 30 years Between 30 and 50 years Above 50 years</i>)</p>	<p>Land size, cooperative, fixed assets and registered business had a significant positive influence on smallholder farmers' accessing agricultural credit from the Commercial Banks (Mayowa, 2015).</p> <p>To determine the gender of the producers. The literature portrays females in agriculture as being deprived of essential services such as access to credit (Isaya <i>et al.</i>, 2018).</p> <p>To determine the producer's level of literacy. Some of the agricultural credit providers consider the educational background of the farmers in determining their creditworthiness (Bai <i>et al.</i>, 2019:27).</p> <p>To determine the level of experience the producers have in producing farm products in the country.</p>
<p><i>Section B: Perceived benefits of using Command Agriculture ISP as a source of funding. {1. Not at all; 2. To a small extent; 3. To a moderate extent; 4. To a large extent; 5. To a very large extent}</i></p>	
<p>To what extent have you experienced the following benefits of using Command Agriculture ISP as a source of funding?</p> <ul style="list-style-type: none"> <li>• Obtaining contracts</li> <li>• Access to farming inputs (seed, fertilizers, herbicides and fuel)</li> <li>• Low farming costs</li> <li>• Readily available buyers</li> <li>• Higher selling prices</li> <li>• Profitability</li> </ul>	<p>The available recent literature suggests several benefits that the farmers have experienced by using Command Agriculture ISP as a source of funding (Chisango, 2018; FAO, 2013; Dorward, 2009; Mazwi <i>et al.</i>, 2019; Miller &amp; Jones, 2010; Tiba, 2011a; The Herald, 2017; Wirakusuma, 2020; World Bank, 2020).</p>

<p><i>Section C: Perceived drawbacks of using command agriculture ISP as a source funding.</i></p> <p><b>{1. Not at all; 2. To a small extent; 3. To a moderate extent; 4. To a large extent; 5. To a very large extent}</b></p>	
<p>To what extent have you experienced the following drawbacks of using command agriculture ISP as a source funding?</p> <ul style="list-style-type: none"> <li>• Delayed input distribution</li> <li>• Inadequate inputs (seed, fertilizers, herbicides and fuel)</li> <li>• Government and political involvement</li> <li>• Penalties if contract terms are breached</li> <li>• The current country's economic downturn</li> <li>• One buyer (The government through the Grain Marketing Board (GMB))</li> <li>• Delayed payments from the GMB</li> </ul>	<p>The literature suggests several drawbacks associated with the use Command Agriculture ISP as a source of funding by smallholder producers (Chisango, 2018; Chronicle, 2021; FAO, 2013; Filipskil &amp; Taylor, 2012; Nindi, 200 ; World Bank, 2020).</p>
<p><i>Section D: The future of the Command Agriculture ISP. {1. Not at all; 2. To a small extent; 3. To a moderate extent; 4. To a large extent; 5. To a very large extent}</i></p>	
<p>1. To what extent do you think the following factors will affect the future and outcome of the Command Agriculture input subsidy programme (ISP)?</p> <p>(i) The ISP will reduce the levels of hunger in the long run</p> <p>(ii) The ISP might be phased out because of the country's poor economic conditions</p>	<p>This question is to determine the producers' opinion on the future and their trust in the continuation of the Command Agriculture input subsidy programme (Chigunhah <i>et al.</i>, 2019; Chisango, 2018; Mazwi <i>et al.</i>, 2019; UNECA, 2012).</p>
<p>2. Would you consider looking for alternative sources of funding? (Yes/No)</p>	<p>This question is to determine whether the producer is satisfied with the ISP since there</p>

	are other schemes that they can use to finance their production processes (Middelberg, 2013).
<p>3. Which of the following schemes would you consider as a source of agricultural funding?  <b>{1. Not at all; 2. To a small extent; 3. To a moderate extent; 4. To a large extent; 5. To a very large extent}</b></p> <ul style="list-style-type: none"> <li>• Commercial Banks</li> <li>• Microfinance</li> <li>• Agricultural companies</li> <li>• Development Finance Institution</li> </ul>	<p>The purpose of this question is to determine an alternative source of funding the producer may consider, if not satisfied with the Command Agriculture ISP (Chisasa, 2014; Jayne &amp; Rashid, 2013; Middelberg, 2013; Miller &amp; Jones, 2010; Chigunha <i>et al.</i>, 2020).</p> <p>The sources were ranked in accordance with the participants' responses.</p>

Source: Author's own compilation

The next section will explain the development of the questions in the interview guide.

### 3.6.4 Interview questions design

The interview questions will be formulated based on trends identified from the literature review and data collected from questionnaires since data will be collected sequentially. These questions will be carefully and cautiously developed in line with what Kallio *et al.* (2016) justified, namely that rigorous development of an interview guide contributes to the objectivity and trustworthiness of studies and makes the results more plausible.

The interview guide was made up of questions such as the key issues the officials have noticed and which have been reported as part of the Command Agriculture ISP and their opinion on the current relationship between the producers and the programme. The interview guide was prepared under the following headings:

- General questions
- SWOT analysis
- The future and outcome of the Command Agriculture ISP.

The interview guide can be accessed under Appendix II.

Tables 3.3 and 3.4 indicate how the questions in the interview guide relate to the literature and the study. Interviews were carried out with the members of the AGRITEX and the CBZ bank.



**Table 3.4: Reference of the interview guide questions to the study and the literature**

Interview Question	Reference to the study and the literature
<i>General Questions</i>	
1. How long have you been dealing the Command Agriculture ISP issues?	To determine the interviewee's experience with the Command Agriculture ISP.
2. Can you please shed some light on the origins of the input subsidy programme (ISP) and your relationship with it?	To assess whether the interviewees have an idea of the Command Agriculture's origins and their relationship thereof.
3. In your own opinion, what does your department aim to achieve as far as the Command Agriculture ISP is concerned and have these aims been met?	The purpose is to determine awareness of the existence and progress of departmental goals as far as Command Agriculture ISP is concerned.
4. In your own opinion, how do you perceive the relationship between the facilitators of the ISP and the smallholder producers?	This question is specific to this study.
5. How has the Command Agriculture ISP helped the smallholder producers of Zimbabwe, in terms of food security and reduction of production costs?	Specific to this study.
<i>SWOT Analysis</i>	
1. Which strengths do you perceive the Command Agriculture ISP have?	This question serves as an instrument in exploring the Command Agriculture input programme by determining and assessing various strengths of the programme (Chisango, 2018; Chronicle, 2021; Jayne & Rashid, 2013; Kuar & Sharma, 2012; The herald, 2017).
2. Are there any weaknesses that are associated with the ISP?	This question serves as an instrument in exploring the Command Agriculture ISP by determining and assessing various weaknesses of the programme (Chisango, 2018; Chronicle, 2021; Jayne & Rashid, 2013;

	Kuar & Sharma, 2012; The Independent, 2019).
3. Which opportunities do think the facilitator of the programme should pursue?	This question serves as an instrument in exploring the Command Agriculture programme by determining and assessing various opportunities of the programme (Chisango, 2018; Chronicle, 2021.
4. Are there any threats that may hinder the progress of the Command Agriculture input subsidy programme?	This question serves as an instrument in exploring the Command Agriculture ISP by determining and assessing various threats of the programme (Chisango, 2018; Chibwana <i>et al.</i> , 2014; Chronicle, 2021; Mason <i>et al.</i> , 2013).
<i>Outcome and future of Command Agriculture ISP</i>	
1. What would you say has been the influence of the Command Agriculture ISP programme on both the country's food security and the smallholder producers' production costs?	This question is specific to this study as it measures whether the Command Agriculture ISP has achieved its set objectives.
2. What are some of the influences of targeting smallholder producers?	The literature suggests that the officials of various ISPs face both positive and negative influences as a result of targeting smallholder producers (Jayne & Rashid, 2013).
3. How has the ISP changed overtime (2016 to date)? What are the factors that have been fuelling the change? Can those factors be linked to smallholder producers and why?	To determine whether the changes in the Command Agriculture ISP are because of targeting smallholder producers (Jayne & Rashid, 2013; Nkhoma, 2016).
4. Have you experienced grievances about the programme from the producers? If so, how have you been handling those?	To determine the interviewee's opinion on whether the smallholder producers are satisfied or not with the Command Agriculture ISP services that they offer as far as disadvantages are concerned (Chisango T 2018; FAO 2013; World Bank, 2020).

<p>5. What do you see as the future of the ISP? Will the government phase it out, given the history of other ISPs?</p>	<p>This question is to determine the possible future of the ISP, concerning the phasing out of other previous ISPs (Kherallah <i>et al.</i>, 2002; Mazwi <i>et al.</i>, 2019; Moyo &amp; Chambati, 2013).</p>
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Source: Author's own compilation

The data collected from interviews and questionnaires will be analysed as described in the following section.

### 3.7 DATA ANALYSIS TECHNIQUE

Data analysis, being the last element on the honeycomb of methodology (Figure 3.2), represents techniques or ways in which the research findings were analysed and presented. According to Saunders *et al.* (2015), meaningful and understandable data analysis is one of the characteristics of good research. The data were analysed using the SPSS software for the quantitative data and thematic analysis for the qualitative data. These techniques are explained below under separate headings.

#### 3.7.1 Quantitative data analysis: SPSS software

Data collected from the questionnaires were analysed quantitatively using the SPSS software with the expertise of the North-West University statistical services. In order to reach the research objectives, the 100 questionnaire responses on the QuestionPro were verified and transferred to a Microsoft Excel sheet. The Excel sheet was submitted to a statistician for statistical analysis. The Excel sheet was imported to the SPSS software where it was coded and analysed using various statistical techniques. With the promoter's guidance on the appropriate statistical methods to use for this study, the SPSS software analysed the data on frequency distribution, exploratory factor analysis, descriptive statistics, analysis of variances and finally sample t-tests.

Frequency distributions were applied on the demographic data in Section A of the questionnaire (refer to Appendix I). The use of frequency distribution assist in simplifying the background data of the participants and summarising data for individual variables (Maseko, 2018). The exploratory factor analysis is a technique used to derive relationships between constructs (Maree, 2019). This technique was used to assess the opinions of the participants on the use of the Command Agriculture ISP as a source of funding.

According to Martelli and Greener (2018), descriptive statistics aim to describe the phenomena as it exists and it focuses on the questions inquiring about what, who, when, how, where, how much, or how often. Descriptive statistics are used to present quantitative results in a way that is easily understandable and manageable (Trochim, 2020). According to Trochim (2020), descriptive statistics include frequencies also called counts, percentages, ranks, measures of central tendency (e.g. median, mean and mode as well as measures of variability like range and standard deviation).

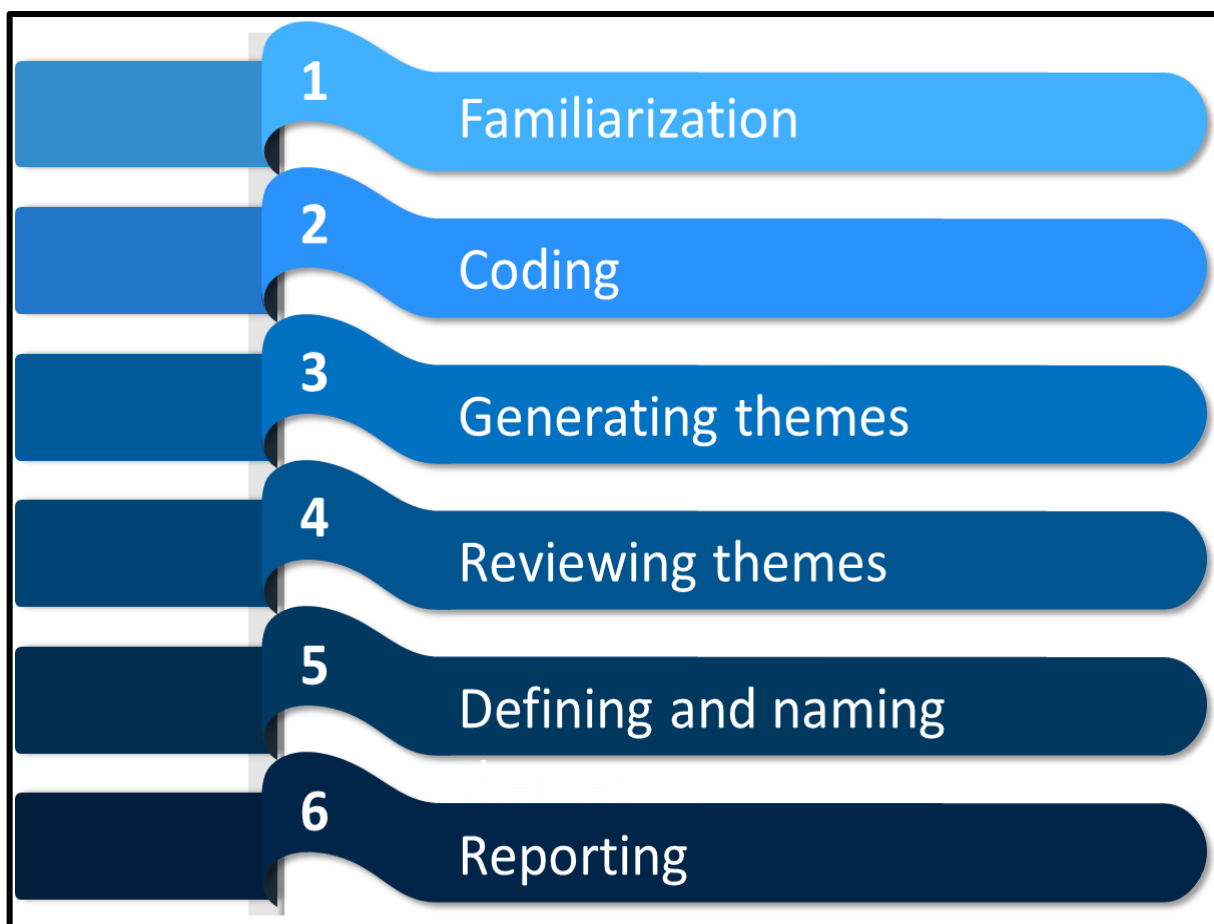
Correlation analysis was applied in order to assess the relationships between variables whilst ANOVA and independent samples t-test were used to test for significant differences between the means of the variables (Piertersen & Maree, 2021). These techniques were used in analysing the relationship among the opinion constructs from the smallholder farmers and the association between demographics and these opinion constructs. Chapter 4 (Quantitative data analysis) comprehensively describes the application of all the above-mentioned statistical techniques.

The following paragraph will describe how the qualitative data were analysed using thematic analysis.

### **3.7.2 Qualitative data analysis: thematic analysis**

Data from interviews was analysed using thematic analysis. This analysis technique allows the researcher to apply codes based on reoccurring patterns within the obtained data and this facilitates the identification of themes relevant to the research aim (Bendassolli, 2013). For instance, it will allow for rich comprehension and analysis of each interview as well as the development of themes on the use of Command Agriculture ISP as a source of agricultural funding.

The process of analysing qualitative data using thematic analysis consists of six stages, which are visually described in Figure 3.3.



**Figure 3.3: The six-point thematic analysis process**

Source: Adapted from Braun and Clarke (2006)

According to Braun and Clarke (2006), thematic analysis follows a six-stage process. The elements are described below.

The first stage required the researcher to familiarise herself with the contents of the data from the interviews with the AGRITEX officers and CBZ bank officials, whether they were recorded audios or written notes. The audios might need to be transcribed and the written notes to be read and re-read again (Braun & Clarke, 2006).

The second stage required the researcher to code the interesting features of the data systematically across the entire data set. This was done by collating data relevant to each code and to the primary research objective which is to explore the use of Command Agriculture ISP as a source of funding for smallholder producers.

Thirdly, the researcher had to collate data into potential themes by gathering all data relevant to each potential theme. It is at this stage where the researcher could identify if the codes generated in stage

two are vague or not (Braun & Clarke, 2006). Braun and Clarke (2006) also mentioned that the generation of themes can also be done with the assistance of the trends found in the literature review and the kind of questions in the interview guide.

Reviewing themes is the fourth stage. In this stage, the researcher has to compare the themes with the code and the entire set of the data to assess and correct inconsistencies (Braun & Clarke, 2006). This means that there will be the generation of a thematic map of the analysis. The themes are required to be useful and accurate to the representations of data from the interviews with the officials of the Command Agriculture ISP.

After reviewing the themes, the researcher must then define and name each theme. This stage helps both the researcher and the reader of the study to understand the data. It is an ongoing analysis to refine the specifics of each theme and the overall story the analysis tells. In this study, the aim is to tell a story about the use of the Command Agriculture ISP as a source of agricultural funding for smallholder farmers in Zimbabwe.

The last stage of Braun and Clarke's (2006) six-stage thematic analysis process is to report and present the research findings. It is the selection of vivid, compelling extract examples relating back to the primary research objective and the literature and then produce a report. The report for this study will be done thoroughly in the next chapter (Chapter 4).

### **3.7.3 Triangulation**

Triangulation in research is a strategy used to test validity through the convergence of information from different sources. It is more valuable when using a mixed-method research strategy where both quantitative and qualitative data are collected to support a phenomenon (Flick, 2018:5). According to Mertens and Hesse-Biber (2012), triangulation provides a more in-depth nuanced understanding of the research findings. It is done by comparing the results found in one method with another method.

Additionally, triangulation cross-examines the truthfulness of participants' responses and reduces researcher's bias (Ahmadani, 2020:60). It also determines the reliability and validity of responses by establishing the extent to which similar questions yield the same results and if responses appear to support the same phenomenon. On the other hand, Fielding (2012:126), argues that triangulation focuses only on discovering how the results complement each other without considering the differences in the research findings.

In this study, triangulation was used to obtain convergence, corroboration and correspondence of the results collected from smallholder producers through the questionnaire and CBZ and AGRITEX

officials through the interviewees. Table 6.1 in Chapter 6 will provide an in-depth comparison of the quantitative and qualitative data applying triangulation.

### **3.8 POPULATION AND SAMPLING**

#### **3.8.1 Population**

A population is a group of potential people from who the researcher will obtain raw data or information (Saunders *et al.*, 2007). The respondents consisted of the key stakeholders of the Command Agriculture ISP as depicted in Figure 1.1 (Chapter 1).

The smallholder producers formed the population to collect quantitative data from, i.e. they completed the questionnaire. On the other hand, officials from Agriculture Research Extension (AGRITEX) – a government-controlled department that works closely with producers and the CBZ – the finance facilitator of the programme, formed the population to draw qualitative data from and they participated in semi-structured interviews.

#### **3.8.2 Sampling**

Sampling is the process of selecting a segment that is representative of the chosen population in research (McCombes, 2019). Onwuegbuzie and Collins (2017) stated that sampling is an important stage in research because it assists in explaining the inferences made by the researcher from the results and findings of the study. The following procedures were followed for a justified sample for the study.

##### **Sampling technique**

A sampling technique is a method that is used when selecting a sample (Adams *et al.*, 2007). According to Adams *et al.* (2007) and Onwuegbuzie and Collins (2017), there are two sampling techniques namely probability- and non-probability sampling. Under probability sampling, respondents in a research population have an equal chance of being selected, while under non-probability sampling respondents are selected according to personal judgments.

For the quantitative study, snowball non-probability sampling technique will be used. Snowball sampling, also referred to as referral chain sampling, is most applicable when there are some difficulties in constructing a research population list (Kirchherr & Charles, 2018). This means that the first few respondents, in other words, smallholder producers, recruited the next and the wave continued like that.

A non-probability purposive sampling technique was utilised for the selection of the interviewees. This is because under non-probability sampling respondents are considered for selection if they are information-rich (Patton, 1990). Concerning Table 1.1, the researcher managed to identify the key stakeholders of the Command Agriculture ISP scheme where relevant data can be collected from.

### **Sampling size**

The sample size of the research is usually determined by the research methodology being used (Onwuegbuzie & Collins, 2017). The sample size of both the quantitative study and the qualitative study are described below.

#### ***Quantitative study***

When following the quantitative approach, the sample size is much larger and the respondents will generally be over 50 (De Villiers & Fouché, 2015). A suitable and valid number of questionnaires that assisted in extracting meaningful results was determined after consulting the NWU statistical services. The number of questionnaires responded to were 100.

#### ***Qualitative study***

According to De Villiers and Fouché (2015), when following a qualitative approach, an interview can take about thirty minutes to one hour and the sample size is relatively small. The sample size can consist of one to 50 interviewees. The interviewees consisted of three members from each of the following: officials from AGRITEX – a government-controlled department that works closely with producers and the CBZ – the finance facilitator of the programme. That is six interviews in total.

### **3.8.3 Recruitment of participants**

Roulston and Choi (2018) state that the best and convenient way of recruiting research participants is to start with those that are already known to the researcher. However, this may also be referred to as convenience sampling which is deemed the weakest form of sampling. On the other hand, Gelinis *et al.* (2017) mention that participants can be recruited via personal and professional circles or via face-to-face interactions where the researcher had to visit participants without prior notice. However, this may not be suitable because of the current COVID-19 pandemic. Participants may also be recruited via social media or internet channels (Roulston & Choi, 2018).

In this study, the researcher recruited participants via personal and professional circles, referrals and internet connections. According to Denscombe (2008) and Creswell (2012), the use of personal and



professional contacts to recruit participants and the courtesy to treat them with integrity and respect is very important.

### **3.9 ETHICAL CONSIDERATIONS**

Ethical considerations are required to support the values of synergetic work which includes reciprocal respect and fairness amongst participants (Connelly, 2014). The researcher also has to carry out the study ethically and with integrity. The research was ethically approved by the North-West University's Economic and Management Sciences Research Ethics Committee (EMS-REC). The ethical clearance number is NWU-00883-21-A4. The following ethical principles by Kane and Trochim (2009) were followed in carrying out the study:

#### **3.9.1 Permission and informed consent**

It is required that all research participants must give their permission to be part of a study – both for the interviews and questionnaires – and they must also be provided with pertinent information to make informed decisions about participating in a research study. A written form must be provided to the participants and it must contain a language easily understood by participants to reduce the possibility of coercion or even undue influence (Manti & Licari, 2018). For this study, informed consent letters were prepared and they contained the following terms as depicted by Manti and Licari (2018). The full copy of these letters can be accessed in Appendix III and IV.

- A clear outline of the duties of the participant, the purpose of the study and for whom; that is, the name of the university (North-West University) and the researcher's details.
- Any risks that may arise during the study, which may affect the participant.
- A clear outline of the rights of the participant.
- A clear confidentiality clause.
- An outline of how the results are going to be disseminated and the benefits thereof.
- An indication that participants are free to participate or not without prejudice.
- A signature section as proof of agreement.
- A formal gesture to ask for the permission of the participants to be part of the study was exercised.

All participants were made aware of the purpose of the study and that they will be part of this study as respondents.

#### **3.9.2 Anonymity**

The personal information and identity of the participants will not be disclosed (Kane & Trochim, 2009).

### **3.9.3 Confidentiality**

Any information participants feel should not be disclosed will be kept confidential and will not be part of this study (Kane & Trochim, 2009).

### **3.9.4 Methodological rigor**

Methodological rigor is defined by Allen (2017) as the degree to which research methods are scrupulously and meticulously carried out in order to recognise important influences occurring in the process of conducting research. Methodological rigor in quantitative research refers to reliability and validity in data analysis, whilst in qualitative research it refers to the trustworthiness and credibility of the data collected (Maree, 2021).

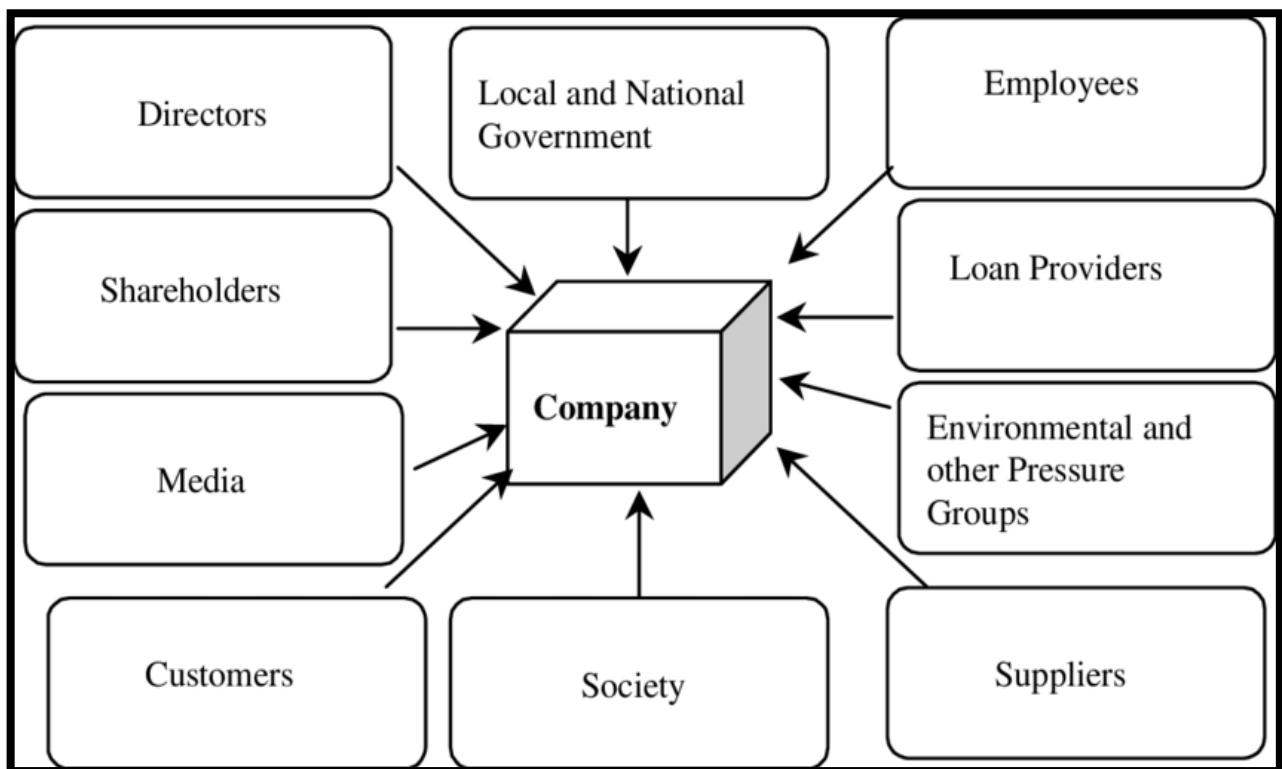
This study made use of the mixed method research which is a combination of quantitative and qualitative research data collection methods. In order to show the reliability, validity, trustworthiness and credibility of the researcher outlined the details of each and every step taken in carrying out this research as recommended by Harrison *et al.* (2020) in their study “methodological rigor for mixed methods research”.

## **3.10 THEORETICAL FRAMEWORK**

The aim of this section is to discuss the stakeholder theory as the theoretical framework that guided this study. The stakeholder theory was initially developed by R.E Freeman in 1984 but it has been improved and being edified over the years (Ward, 2021). Theories are used by organisations to describe, explain and understand business relationships and their challenges (Ward, 2021:45). Theories in research, have different purposes, validity standards and implications (Harrison *et al.*, 2019). In this study, the stakeholder theory was used to identify the stakeholders of the Command Agriculture ISP and how they influence the operation of this ISP.

The stakeholder theory is based on the principle that all stakeholders must be considered in every decision-making process and they are all important and need to benefit from the project (Freeman, 2010). It is through this principle that, primary and secondary stakeholders were identified in Chapter 1, Table 1.1. The stakeholder theory clarifies the duties, responsibilities and needs of various stakeholders. The stakeholder approach also identifies and models the groups which are stakeholders of an organisation and describes and recommends methods by which management or people in authority can give due regard to the needs of those groups (Ward, 2021). Harrison *et al.* (2019), described stakeholders as any group which can affect or is affected by the achievement or failure of an organisation’s objectives.

Figure 3.4 provides a general overview of a company set up and its stakeholders. This was named by Freeman in 1984 as the stakeholder relationship model.



**Figure 3.4: Stakeholder theory relationships model**

Source: Adapted from Freeman (2010)

The stakeholder theory relationships model identifies how an organisation, a scheme or an ISP is set up considering the surrounding stakeholders. It shows that a stakeholder can be anyone who is affected by the operation of an organisation (Harrison *et al.*, 2019). In this study, the model was consulted through the use of Figure 1.1 in Chapter 1, which shows all the stakeholders of the Command Agriculture ISP. The stakeholders were then narrowed down in Table 1.1 to primary stakeholders and secondary stakeholder with the former being the most influential and information rich stakeholders as far as this study was concerned. The stakeholder approach was also used in Chapter 6, Section 6.6 to give recommendations to each of those primary stakeholders who also took part in answering questionnaires and interviews.

In conclusion, the stakeholders of the Command Agriculture ISP are to benefit from the insights derived from the research findings of this study.

### **3.11 CHAPTER SUMMARY**

This chapter addressed the second secondary theoretical objective, which was to identify and apply the appropriate research methodology suitable for the study by making use of the honeycomb of research methodology.

The chapter discussed the research paradigms applied for the study and their relationship with the research approach and strategy used in this study. The paradigms adopted in relation to the epistemological, ontological and axiological assumptions were post-positivism, critical realism and biased values, respectively. The research approach was inductive and the research strategy was a mixed-method research strategy which is a combination of both quantitative and qualitative strategies.

The chapter also outlined how the participants were recruited, in other words, via social and professional circles and the sampling methods used were purposive sampling for the interviewees and snowball sampling for the smallholder producers. Quantitative data were collected using structured questionnaires whilst qualitative data were collected using semi-structured interviews.

Several questions were also asked regarding the use of Command Agriculture ISP as a source of funding for smallholder producers. Data analysis consisted of descriptive statistics for the quantitative data and thematic analysis for the qualitative data. Rigorous ethical principles followed in this study in order to produce fair and true results were also outlined. In conclusion, the chapter described the stakeholder theory as the theoretical framework to this study and how it was applied.

The next chapter will address the primary objective and the third secondary objective, which is to explore the use of Command Agriculture ISP as a source of funding by presenting the quantitative results.

## **CHAPTER 4: QUANTITATIVE DATA ANALYSIS**

### **4.1 INTRODUCTION**

The previous chapter addressed the research methodology and theoretical framework used in this study. The aim of this chapter was to address the second theoretical objective as set out in Chapter 1, Section 1.7.2.1. This was to assess the smallholder producers' perspectives on other sources of agricultural finance. This chapter also considered the quantitative secondary empirical objectives as set out in Chapter 1 (Section 1.7.2.2). These included: (i) demographic variables such as to examine the influence of land ownership, size of the farm and producer's gender, education and age on qualifying for the Command Agriculture ISP as a source of funding; and (ii) to evaluate the benefits and drawbacks of using Command Agriculture ISP as a source of funding and establish the future of the programme from the smallholder producers' perspective. This chapter presented the findings and empirical analysis drawn from the quantitative data as informed by the literature review in Chapter 2.

The chapter, therefore, focused on addressing the stated research objectives based on the research methodology and the literature review done for the study. The chapter starts by discussing the pilot study and then an analysis of the main study, which was split into demographics, perceptions, association between opinions and association between opinion constructs and demographics

As mentioned in Chapter 3 (Section 3.6.2), the quantitative data were obtained by the distribution of online questionnaires and captured using QuestionPro and Microsoft Excel (refer to Appendix I for the questionnaire). The data from Excel were transferred to the SPSS, for the purpose of analysing the data with the help of the NWU Statistical Consultation Services. This chapter presented: the frequency distributions to become familiar with the data; exploratory factor analysis to reduce the questions in the questionnaire into sensible groups (factors); descriptive statistics to explain the factors; correlation analysis to establish the relationship between factors; and analysis of means (ANOVA and t-test) to establish the differences in constructs of participants' perceptions and differences between constructs of participants and demographic variables.

### **4.2 PILOTING THE QUESTIONNAIRE**

A pilot study was conducted using a sample with characteristics similar to the targeted group and was completed by five participants. With reference to Maseko (2018), the purposes of the pilot study were as follows:

- To determine the feasibility of the study;
- To establish how appropriate, understandable and practical the research instrument is;

- To address any problems prior to the main study, and;
- To check and measure the time required to complete the questionnaire.

The questionnaire comprised items structured based on five-point Likert-type scales. The Likert scales consisted of a number of statements, which expressed the range of the extent of agreement from; not at all (1), to a small extent (2), to a moderate extent (3), to a large extent (4) and to a very large extent (5), towards the given constructs to which the participant was asked to respond (Batterton & Hale, 2017).

The feedback from the five participants confirmed that they did not encounter any problems with the questionnaire and they found it understandable. They also commented that the time taken to complete the questionnaire was conducive enough. Therefore, no amendments were made to the questionnaire and all the aims of the pilot study were positively achieved.

### **4.3 RESULTS OF THE MAIN SURVEY**

After the pilot testing of the measuring instrument, 100 questionnaires were distributed to the identified sample of farmers of which 99 responded. Snowball sampling was also incorporated in distributing the questionnaire, where farmers would refer other farmers to respond to the questionnaire. The researcher strongly encouraged the producers to forward the link to other producers. The results were reported according to valid response percentages, excluding missing figures.

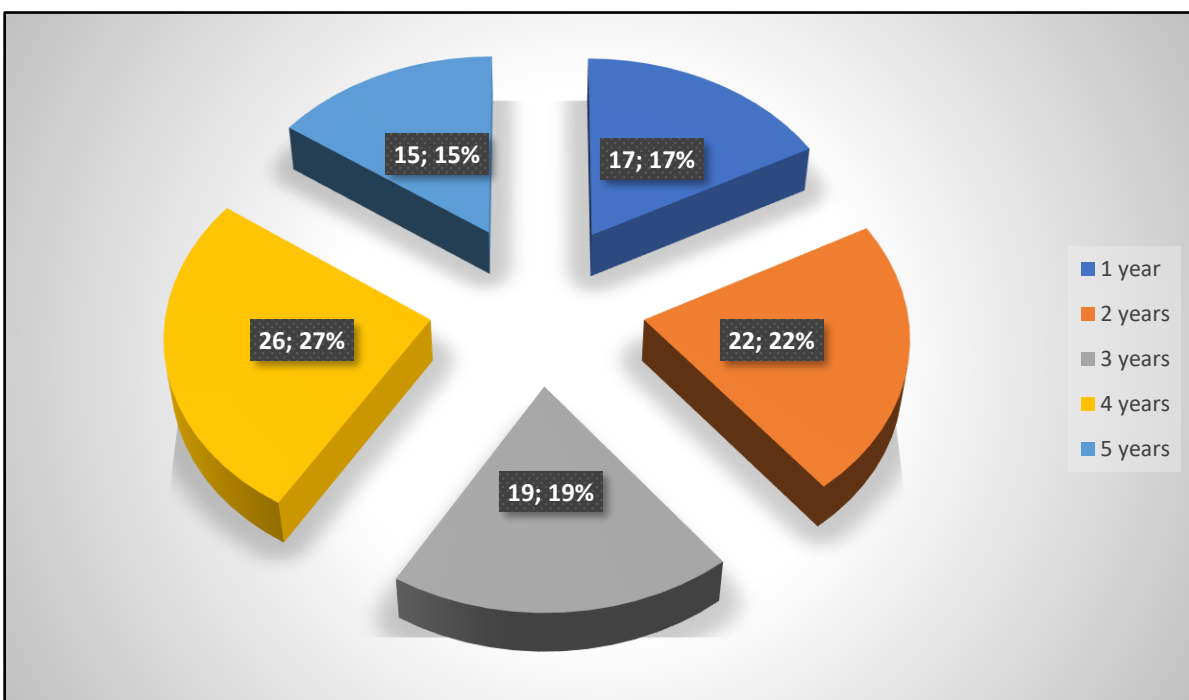
The results of the questionnaire are presented in two sections. The first (4.3.1) focuses on the seven demographic variables (Section A of the questionnaire). The frequency distribution of how the questions were answered is presented. Pie and bar diagrams are included to enhance the readability of this section. The second (4.3.2) focuses on the opinions of the participants as per sections B, C, D and E (benefits, drawbacks, alternative sources of finance and factors that will affect the future of Command Agriculture ISP, respectively). An exploratory factor analysis was conducted in an effort to reduce the opinions within the four above sections (B to E). From each section, constructs were identified of which some descriptive analysis was computed to explain them better (4.3.3).

#### **4.3.1 Demographic variables: frequency distributions**

Section A requested the participants to provide their personal information, which consisted of experience with the Command Agriculture ISP (A1), land ownership (A2), size of farm/land (A3), gender (A4), educational level (A5), age (A6) and whether they consider an alternative form of funding (7). These demographic patterns are discussed in the subsections below.

### **Experience with Command Agriculture ISP**

The number of years of experience with the Command Agriculture ISP is depicted in Figure 4.1. Of the participants in the sample, the majority had been using the scheme as a source of funding for four years (26.27%). This was followed by those who used the scheme for two years (22.22%), followed by those who used the scheme for three years (19.2%). The least proportion had been using the scheme for five years (15.15%) and 1 year (17.17%). The Command Agriculture ISP has only been in operation for about five years. These findings indicated that most of the participants had benefited from the scheme during most of those years. In addition, the high level of experience with the programme increased the validity of the responses.



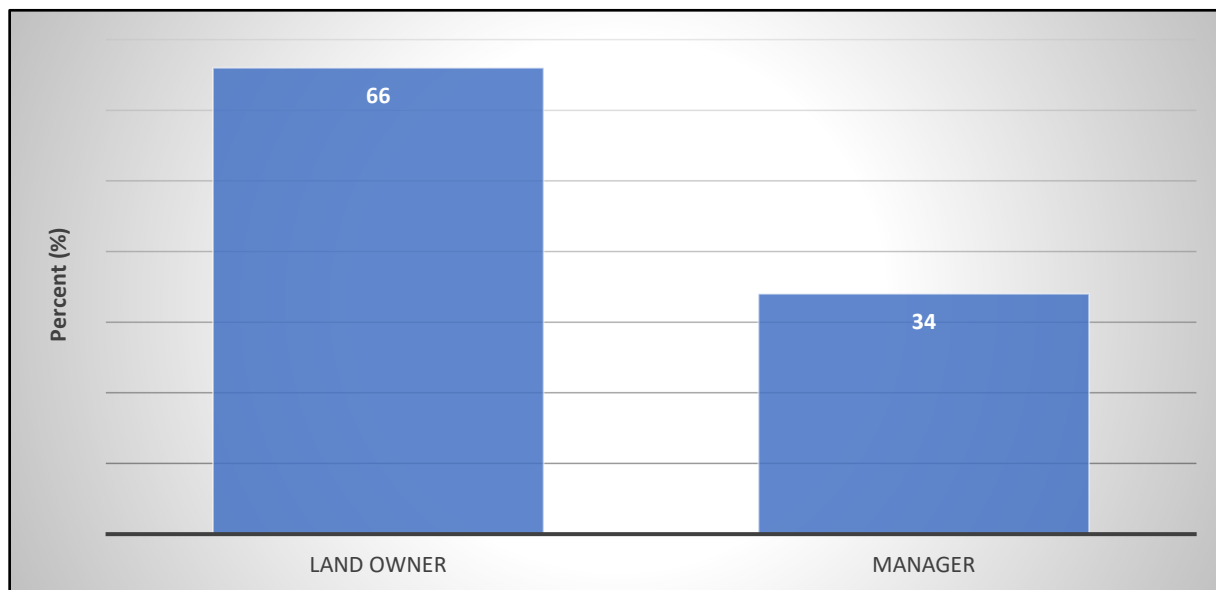
**Figure 1.1: Experience with Command Agriculture ISP**

Source: Author's own compilation

### **Land ownership**

The participants were asked to indicate whether they were landowners or managers on a farm. The results are depicted in Figure 4.2. The majority of the participants were landowners (66%), while the remainder was made up of managers (34%). These results indicated that most of the farmers had been empowered by the government to be landowners through the A1 and A2 land reform programme. Also, since the majority of the participants were landowners, this enhanced the validity of their responses since they had a more direct experience with the programme. However, the

inclusion of managers also enhanced the diversity of perceptions of those who interacted with the programme.



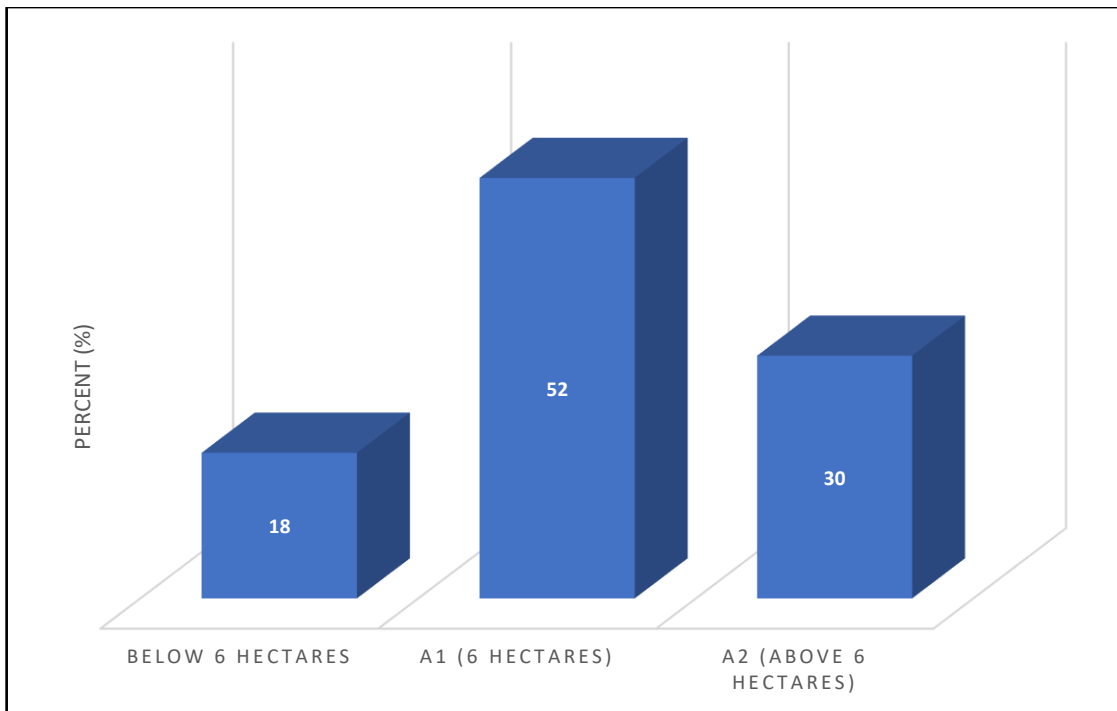
**Figure 4.2: Land Ownership**

Source: Author's own compilation

***Size of farm/land***

The majority of the participants indicated that the size of their land/farm was about six hectares-A1 farmers (52%), followed by those whose land size was above six hectares-A2 farmers (30%). The remaining participants (18%) had a land size of below six hectares. This is depicted in Figure 4.3. These findings showed that the majority of the participants were smallholder farmers (combined 70%). However, the inclusion of a few larger scale farmers also added an important perspective to the study.



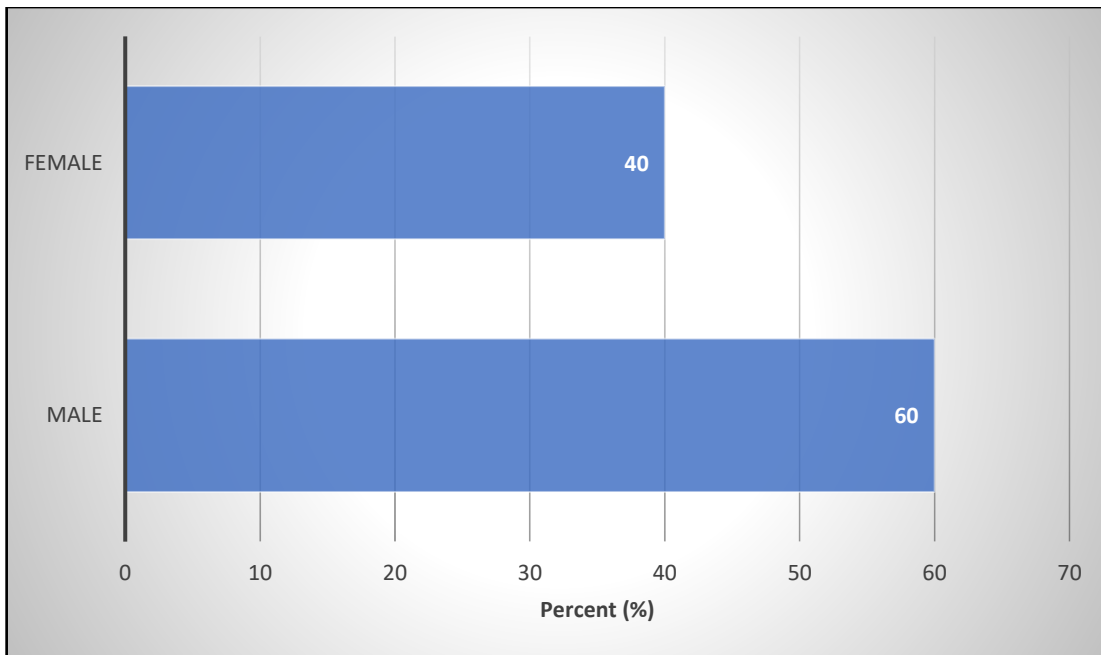


**Figure 4.3: Size of Farm/land**

Source: Author's own compilation

### ***Gender***

The majority of the remaining participants were male (60%) while remaining participants (40%) were female. This is shown in Figure 4.4. These results indicated that the majority of the beneficiaries were male. However, a considerable number of females also benefited from the programme, which further ensured the representation of both sexes in the study.

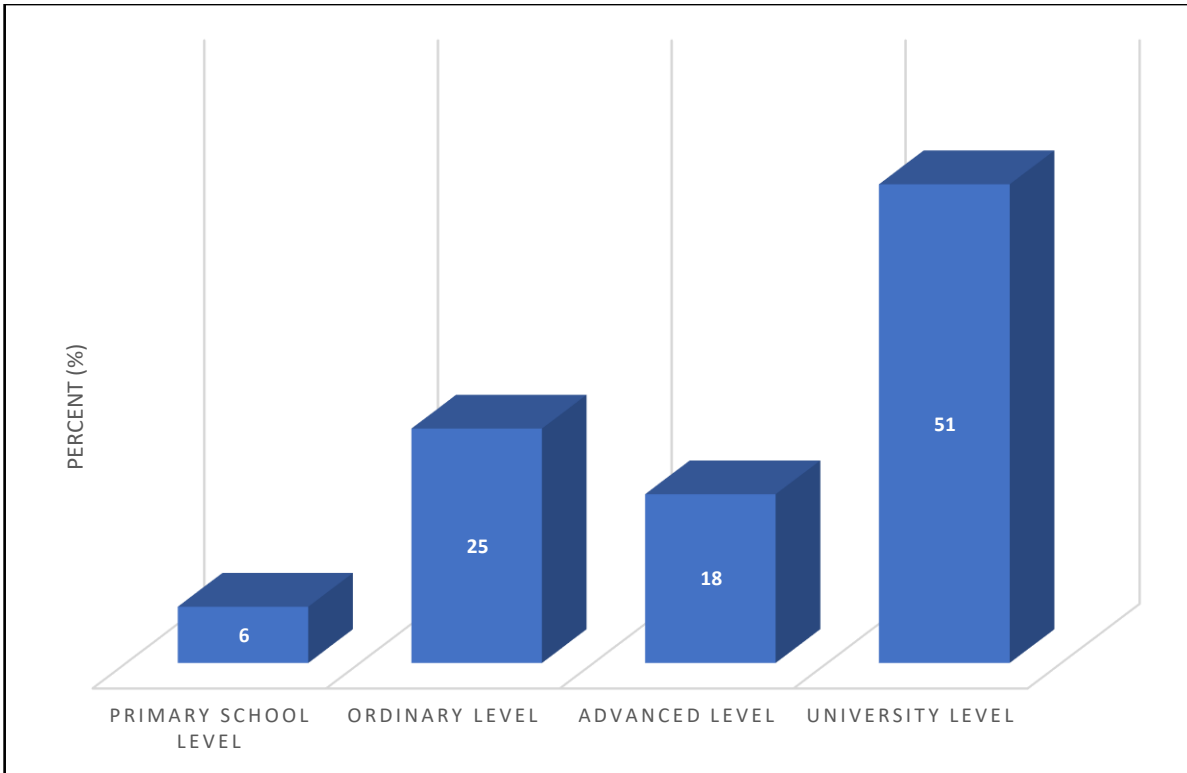


**Figure 4.4: Gender**

Source: Author's own compilation

***Educational level***

Most of the participants had attained a university qualification (51%), followed by those with ordinary level (25%), then advanced level (18%) and the least proportion (6%) had attained only primary school level education. This is depicted in Figure 4.5. These findings indicated that either most farmers had advanced their education or more educated persons were now joining the farming business. This also enhanced the quality of the responses since most participants are highly literate.

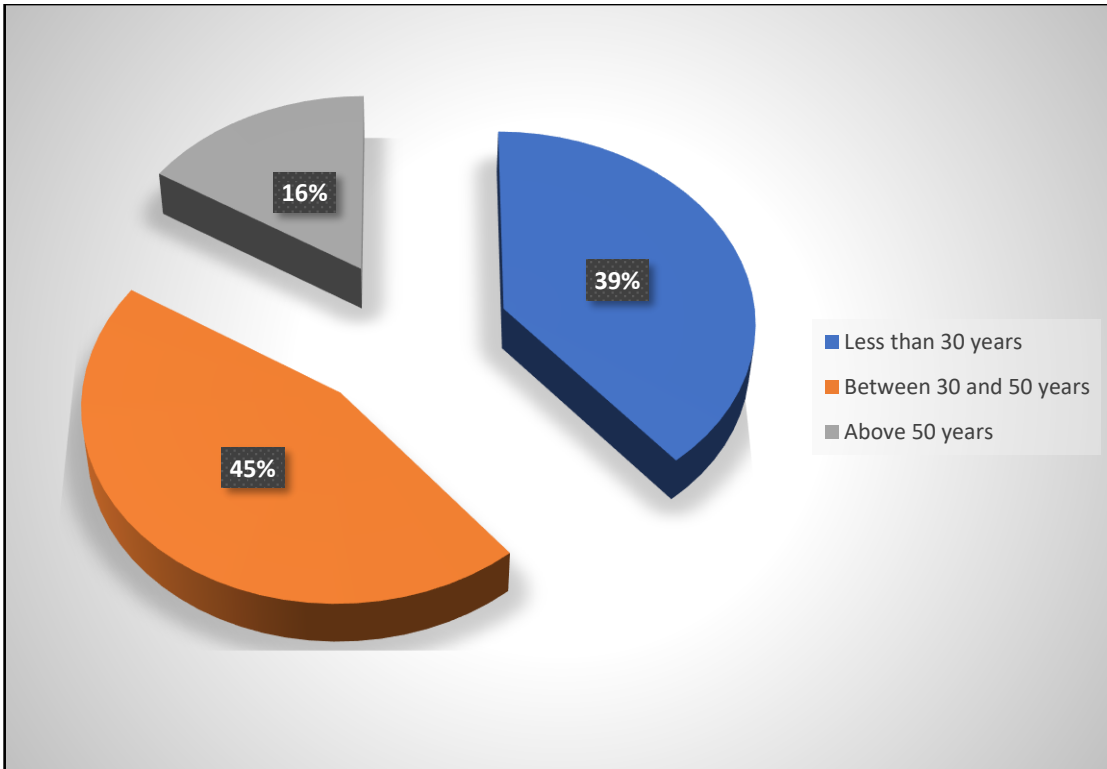


**Figure 4.5: Level of Education**

Source: Author's own compilation

***Participants' age***

The majority of the participants were aged between 30–50 years (45%), followed by those less than 30 years (39%). Only 16% of the participants were above 50 years. This is depicted in Figure 4.6. These findings indicated that participants of various age groups were represented in the study.

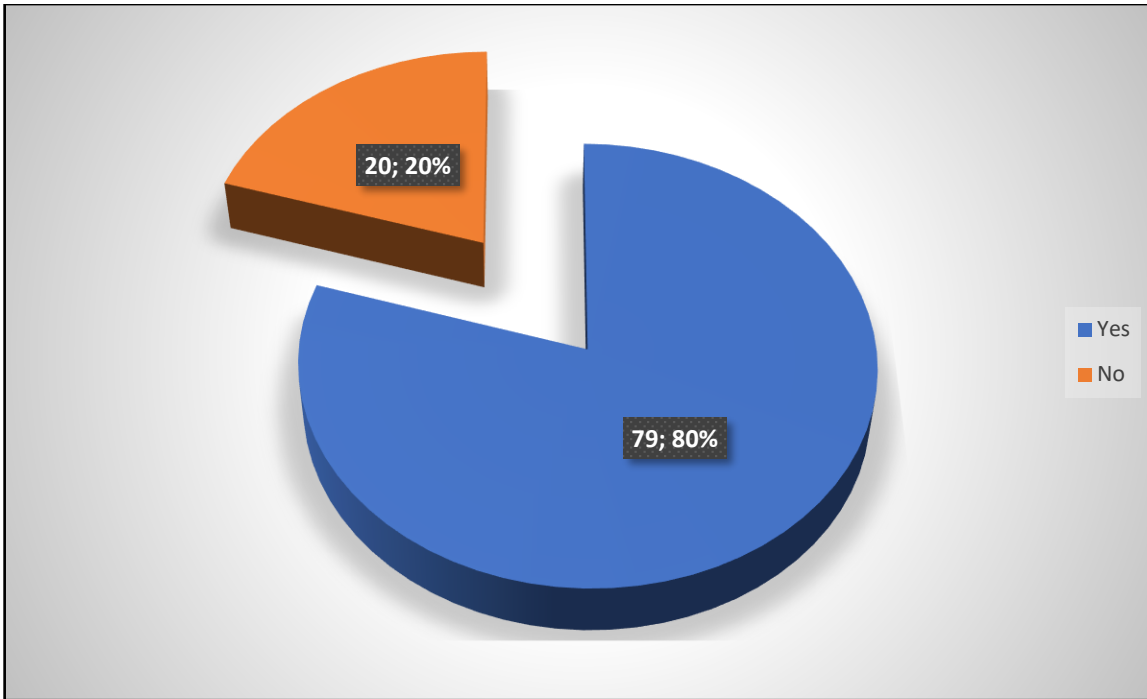


**Figure 4.6: Age of Participant**

Source: Author's own compilation

***Considering an alternative source of funding***

The participants were asked whether they would consider an alternative source of funding. The results are shown in Figure 4.7.



**Figure 4.7: Participants' opinion on considering an alternative source of funding**

Source: Author's own compilation

Figure 4.7 shows that the majority of the participants (79.8%) would consider an alternative source of funding, while the remainder (20.2%) would not consider an alternative source of funding.

This concludes the results of Section A (demographic variables) of the questionnaire. The next section reports on the participants' perceptions statements presented in sections B, C D and E of the questionnaire.

### 4.3.2 Opinions of participants: exploratory factor analysis

Factor analysis is a multivariate statistical procedure that is used to: (i) reduce a large number of variables into a smaller set of variables (factors); and (ii) to establish underlying dimensions between measured variables and latent constructs, thereby allowing the formation and refinement of theory. It is also used to provide construct validity evidence of self-reporting scales in questionnaires (Williams *et al.*, 2010). In exploratory factor analysis (EFA), the investigator has no expectations of the number or nature of the variables. This allows the researcher to explore the main dimensions to generate a theory, theoretical constructs, or a model from a relatively large set of latent constructs often represented by a set of items (Williams *et al.*, 2010). Furthermore, Pietersen and Maree (2021), asserted that factor analysis is also used to determine which items belong together in the sense that the questions were answered similarly and therefore measure the same dimension or factor. In this

regard, EFA was used to condense the number of variables to a smaller number of dimensions named factors. These factors explained what is common among the original set of variables. This section is going to factorise the questions and statements in sections B, C, D and E of the questionnaire (refer to Appendix I). Section B of the questionnaire contained questions regarding the benefits of Command Agriculture ISP as a source of finance, while Section C comprised questions about drawbacks of Command Agriculture ISP as a source of finance, Section D encompassed questions concerning schemes to consider as a source of agricultural funding and Section E included questions regarding the future and outcome of the Command Agriculture ISP.

According to Smit (2018), the statistical detail is often presented in a factor pattern matrix where detail about the items belonging together is also displayed. These items, per factor, have boundaries and scores that are deemed to be acceptable. The items and the boundaries are as follows.

- The factor means are measured on a five-point scale from one “not at all” to five “to a very large extent”, just as indicated in the questionnaire’s Likert scale.
- The standard deviation is a standardised measure how the observations are spread around the factor means. This is the square root of the variance, which measures the spread of the data around the mean value (Pietersen & Maree, 2021).
- Eigenvalues spread on scree plots assist with factor extraction and they show substance importance of factor with scree plots making an inflection below the number of factors that should be effectively included (Field, 2009; Maree, 2019). Maree (2021) emphasised on eigenvalues, which are greater than one and they are the ones which are acceptable.
- The percentage of variance explained, which is a function of the eigenvalues relative to the total number of variables, should be greater than 50% (Maree, 2021).
- Cronbach’s alpha values and inter item correlations are used to gauge reliability and internal consistency of the data. The acceptable Cronbach’s alpha value should at least be above 0.6, however, values above 0.7 and even above 0.8 are more appropriate (Maree, 2021; Maseko, 2018).
- According to Field (2009), the average inter-item relation should be between 0.2 to 0.4, which indicates that although the factors are reasonable homogenous they do contain sufficiently unique variance so as to not be isomorphic with each other.
- The Kaiser-Meyer-Olkin test was conducted to determine whether the data were appropriate for factor analysis (Anders *et al.*, 2020; Hair *et al.*, 1995). This test measures the sample adequacy which is an estimate of the “proportion of variance among variables that might be common variance.” The authors alluded to the fact that the KMO should be more than 60% to be acceptable (Hair *et al.*, 1995; Thompson, 2004; Williams *et al.*, 2010).

- The Bartlett's test of sphericity was used to test for equality of variances across groups or factors against the alternative that variances are unequal for at least two factors and whether the data are suitable for factor analysis (Garcia-Santillan *et al.*, 2012). Therefore the significance must be less than 0.05 ( $p < 0.05$ ) (Maseko, 2018).

### Factor extraction procedure

Table 4.1 to Table 4.5 provide the results after rotating all the variables. The attained factor matrix was rotated using the varimax rotation using Kaiser normalisation. Only those factors with loadings higher than 0.5 were retained for analysis. Furthermore, the items that loaded on more than one factor were allowed to represent the factor with the highest loading provided the loading was  $> 0.50$  (Costello & Osborne, 2005; Thompson, 2004; Williams *et al.*, 2010).

#### 4.3.2.1 Factor loadings for the benefits of Command Agriculture ISP as a source of finance

Table 4.1 provides the rotated factor loadings for the benefits of the Command Agriculture ISP as a source of finance. The five statements in Section B of the questionnaire (refer Appendix I) are ranked in order of importance measured by the factor loading.

**Table 4.1: Factor loadings for the benefits of Command Agriculture ISP as a source of finance**

<b>Benefits of Command Agriculture as a source of finance</b>		
		<b>Factor loading</b>
1	Obtaining input contracts	0.799
2	Access of farming inputs (seed, fertilizer, herbicide and fuel)	0.761
5	Profitability	0.755
3	Low farming cost	0.752
4	Readily available buyers	0.672
<b>Factor mean</b>		<b>3.232</b>
<b>Standard deviation</b>		<b>0.752</b>
<b>Eigenvalue</b>		<b>2.803</b>
<b>Percentage of variance explained</b>		<b>56.070</b>
<b>Cronbach's alpha</b>		<b>0.801</b>
<b>Inter-item correlations</b>		<b>0.449</b>
<b>Kaiser-Meyer-Olkin test</b>		<b>0.771</b>
<b>Bartlett's chi-square</b>		<b>150.586</b>
<b>Significance</b>		<b>0.000</b>

Source: Author's own compilation

Table 4.1 shows the factor loadings of the benefits of Command Agriculture ISP. The factor loadings of the five items were all greater than 0.5 with obtaining input contracts having the highest loading at 0.799 and readily available buyers having the least at 0.642. The other items on that factor included access to farming inputs (0.761), profitability (0.755) and low farming cost (0.752). These factor loadings resulted in a factor mean of 3.232, which is slightly above average of the one to five scale. This shows that merely above half of the participants have experienced these benefits of using the Command Agriculture ISP. The standard deviation of 0.752 shows that the observations are significantly spread around the factor mean.

Table 4.1 also shows 56.07% of the variance explained. This was above the 50% threshold as recommended by Maree (2021) and Streiner and Canadian Psychiatric Association (2020) and therefore ideal to retain the factor and its components. In addition, the eigenvalue was also  $2.803 > 1$  as recommended by Maree (2021). Furthermore, this factorisation resulted in an acceptable Cronbach's alpha of 0.801, KMO of 0.771, which was above 0.6 as alluded by Maseko (2018) and the Bartlett's significance of 0.000, which is less than the 0.05 threshold.

This factor and the related items were important in exploring the nature of the Command Agriculture ISP. It is because of these perceived benefits that such programmes are undertaken (Crawford *et al.*, 2005; Dorward, 2009; Minot & Benson, 2009). However, critics also question whether these benefits are not merely theoretical and not achieved in practice (Jayne *et al.*, 2013). Since the above statistics are all acceptable, these five statements can be reduced to a single factor namely "the benefits of using Command Agriculture ISP as a source of funding".

#### **4.3.2.2 Factor loadings for the drawbacks of Command Agriculture ISP as a source of finance**

The drawbacks of using Command Agriculture ISP as a source of funding can be accessed in Section C of the questionnaire (Appendix I). The drawbacks are ranked according to the factor loading in Table 4.2.

Table 4.2 provides the rotated factor loadings for the drawbacks of the Command Agriculture ISP as a source of finance.



**Table 4.2: Factor Loadings for the drawbacks of Command Agriculture ISP as a source of finance**

<i>Drawbacks of Command Agriculture as a source of finance</i>		
		<b>Factor loading</b>
2	Inadequate inputs (seed, fertilizer, herbicide and fuel)	0.827
7	Delayed payments from Grain Marketing Board	0.816
1	Delayed input distribution	0.804
3	Government and political involvement	0.772
6	One buyer (government through the Grain Marketing Board)	0.762
5	The current economic downturn	0.753
4	Penalties in contract terms are breached	0.460
<b>Factor mean</b>		<b>3.331</b>
<b>Standard deviation</b>		<b>0.897</b>
<b>Eigenvalue</b>		<b>3.952</b>
<b>Percentage of variance explained</b>		<b>56.459</b>
<b>Cronbach's alpha</b>		<b>0.865</b>
<b>Inter-item correlations</b>		<b>0.478</b>
<b>Kaiser-Meyer-Olkin test</b>		<b>0.875</b>
<b>Bartlett's chi-square</b>		<b>288.095</b>
<b>Significance</b>		<b>0.000</b>

Source: Author's own compilation

As shown in Table 4.2, the drawbacks of the Command Agriculture ISP were the second items to be factorised. The factor loadings of the six out of the seven items were all greater than 0.5 with 'inadequate inputs' having the highest loading at 0.827 and 'the current economic downturn' having the least at 0.642. The other items on that factor included 'delayed payments from the Grain Marketing Board' (0.816), 'delayed input distribution' (0.804), 'government and political involvement' (0.772) and 'one buyer' (0.762). However, the breaching of penalties in contract terms had a loading less than 0.5 (0.460) which suggested that it was not very important in exploring the drawbacks of the programme.

The factor mean of 3.331 and the standard deviation of 0.897 were all acceptable in the sense of combining the stated drawbacks as a single factor. The eigenvalue was also  $3.952 > 1$  as recommended (Maree, 2019; Maseko, 2018; Streiner & Canadian Psychiatric Association, 2020). The results in the table also explained 56.459% of the total variance. This was above the 50% threshold as recommended by Streiner and Canadian Psychiatric Association (2020). The Cronbach's alpha

(0.865), inter-item correlations (0.478), KMO (0.875) and the Bartlett's test of sphericity significance (0.000) all met the recommended thresholds.

Therefore, the researcher found it ideal to retain the factor and its components. In addition, this factor and the related items were important in exploring the nature of the Command Agriculture ISP because it is such drawbacks that hinder the attainment of the objectives and outcomes of ISP (Holden & Lunduka, 2013; Jayne & Rashid, 2013; López, 2005). The statistics are acceptable therefore the seven statements were considered as a single factor which is the drawbacks of using the Command Agriculture ISP as a source of funding for smallholder farmers in Zimbabwe.

#### **4.3.2.3 Factor loadings for the schemes to consider as a source of agricultural funding**

The various schemes to consider as a source of a source of agricultural funding mentioned in this section are accessible in Section D of the questionnaire (Appendix I).

Table 4.3 provides the rotated factor loadings for the schemes to consider as alternative sources of agricultural funding.

**Table 4.3: Factor loadings for the schemes to consider as a source of agricultural funding**

<b>Schemes to consider as a source of agricultural funding</b>		
1	Commercial banks	0.827
4	Development finance institutions	0.816
3	Agriculture companies	0.804
2	Micro finance	0.772
<b>Factor mean</b>		<b>3.108</b>
<b>Standard deviation</b>		<b>0.891</b>
<b>Eigenvalue</b>		<b>1.940</b>
<b>Percentage of variance explained</b>		<b>48.505</b>
<b>Cronbach's alpha</b>		<b>0.638</b>
<b>Inter-item correlations</b>		<b>0.305</b>
<b>Kaiser-Meyer-Olkin test</b>		<b>0.672</b>
<b>Bartlett's chi-square</b>		<b>42.740</b>
<b>Significance</b>		<b>0.000</b>

Source: Author's own compilation

Table 4.3 shows the factor loadings of the alternative sources of agricultural financing. The factor loadings of all the four items were greater than 0.5 with 'commercial banks' having the highest loading at 0.827 and 'microfinance' having the least at 0.772. The other items on that factor included 'development finance institutions' (0.816) and 'agriculture companies' (0.804). The factor mean was slightly above half of the one to five scale and this shows that the producers moderately agreed to considering other sources of funding opting mostly for commercial banks and less preferences on micro finances because of high interest costs associated with micro finances (Lüddemann, 2016). The constructs are also significantly spread around the factor mean because of a standard deviation on 0.891.

The percentage of variance explained was 48.505%. This was slightly less than the 50% threshold as recommended (Maree, 2021; Maseko, 2018; Smit, 2018; Streiner, 2020), however, it was still ideal to retain the factor and its components. This is because, the eigenvalue was  $1.940 > 1$  as recommended. The Cronbach's alpha score of 0.638 is slightly above the 0.6 threshold and the Bartlett's test of sphericity significance is  $0.000 < 0.05$ .

This factor and the related items were important in exploring the nature of the Command Agriculture ISP because if the ISP programme fails to provide adequate finance, alternative sources of finance will be required. In addition, Isuekebhor (2014) argued that traditional methods of agricultural financing are inefficient and therefore innovative financing methods are required.

According to the statistics, this is a marginal case with special emphasis on the percentage of variance explained of 48.505 (less than 50%) and the Cronbach's alpha of 63.8 (less than 70% but more than 60%). Therefore, these four factors were not combined into a single factor. Thus, they were separately dealt with in further analysis.

#### ***4.3.2.4 Factor loadings for the future and outcome of Command Agriculture ISP***

Table 4.4 provides the unrotated factor loadings for the future and outcome of the Command Agriculture ISP. These factors can be found in the last section of the questionnaire (Appendix I, Section E). The factor could not be rotated because it had only two items.

**Table 4.4: Factor loadings for the future and outcome of Command Agriculture ISP**

<b><i>The future and outcome of the Command Agriculture input subsidy programme (ISP)</i></b>		
1	ISP will reduce the levels of hunger in the long run	0.725
2	ISP might be phased out because of the country's poor economic conditions	-0.725
<b>Factor mean</b>		-
<b>Standard deviation</b>		-
<b>Eigenvalue</b>		<b>1.052</b>
<b>Percentage of variance explained</b>		<b>42.588</b>
<b>Cronbach's alpha</b>		<b>0.098</b>
<b>Inter-item correlations</b>		<b>0.052</b>
<b>Kaiser-Meyer-Olkin test</b>		<b>0.500</b>
<b>Bartlett's chi-square</b>		<b>0.259</b>
<b>Significance</b>		<b>0.611</b>

Source: Author's own compilation

As shown in Table 4.4, the opinions concerning the future and outcome of the Command Agriculture ISP were the fourth constructs to be factorised. The factor loadings both items on the scale were greater than 0.5 (at 0.752). However, the loadings for the two items had opposite signs. This is explained by the fact that there were only two items on the scale, which were directly contradicting each other. All the statistics in the table from the factor mean to the Bartlett's significance did not meet the recommended thresholds mentioned in Section 4.3.2 above except for the eigenvalue of 1.052 which was greater than one. The other results were as follows: percentage of variance explained 42.588% < 50%, the Cronbach alpha of 0.098 < 0.6, the KMO of 0.50 < 0.6 and the significance of 0.611 > 0.05.

This factor and the related items were important in exploring the nature of the Command Agriculture ISP because, achieving the targeted outcomes was the main requirement of the programme. In addition, perspectives about the performance and future of the programme were also essential. Furthermore, there was no consensus based on the empirical and theoretical evidence on these issues (Chibwana *et al.*, 2014; Chirwa & Dorward, 2013; Ricker-Gilbert *et al.*, 2013; Wirakusuma, 2020). As proven by the statistics in the table above, these two statements could not be combined as a single factor. Therefore, they were dealt with separately in further analysis.

### 4.3.3 Descriptive statistics of constructs

In this subsection, descriptive statistics were used to describe the basic features of data in this study by establishing the participants' different level of agreement and disagreement for each construct. This was achieved through the use of measures of central tendency and dispersion such as means, standard deviations of the constructs, factors and the whole sample.

Statements in sections B, C, D and E in the questionnaire employed a five-point Likert scale where the extreme points were "1-Not at all", which indicated that the participants "strongly disagreed" and "5-To a very large extent", which indicated "Strongly Agree". Given that the mean scores contain fractions, the following scales were used to help in interpreting the mean scores of individual items or scores.

- Mean score  $< 2$ , = strongly disagree
- $2 \leq$  Mean score  $< 3$ , = moderately disagree
- $3 \leq$  Mean Score  $< 4$ , =moderately agree
- Mean score  $\geq 4$ , = strongly agree

Table 4.5 provides summaries about the sample and the measures of each construct as identified in Section 4.3.2 above. This includes the participant's perceptions on (1) the benefits of Command Agriculture ISP as a source of finance; (2) the drawbacks of Command Agriculture ISP as a source of finance; (3) alternative sources of agriculture financing; and (4) the future and outcome of Command Agriculture ISP. As per the previous section the five benefits were included in one factor, namely the benefits of using Command Agriculture ISP and the drawbacks were also included in one factor namely the drawbacks of Command Agriculture ISP. On the other hand, the four sources of finance and the two statements concerning the future of Command Agriculture ISP were respectively kept separate because the statistics were not acceptable for them to be kept as single factors. Therefore, eight constructs in total were identified (as shown in Table 4.5).

**Table 4.5: Descriptive statistics on the participants' views**

	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std. Deviation</i>
Benefits of CA funding	99	1	5	3.23	0.725
Drawbacks of CA funding	98	1	5	3.33	0.897
Commercial Banks	83	1	5	3.17	1.238
Microfinance	82	1	5	2.34	1.239
Agricultural companies	93	1	5	3.62	1.160
Development Finance	84	1	5	2.83	1.260
The ISP will reduce hunger	99	1	5	3.08	0.976
The ISP might be phased out	99	1	5	2.66	1.061

Source: Author's own compilation

As shown in Table 4.5, the participants moderately agreed (mean score of 3.23) that the Command Agriculture ISP provided various benefits as a source of finance. These benefits included obtaining input contracts, access of farming inputs (seed, fertilizer, herbicide and fuel), improved farm profitability, lower farming costs and readily available buyers. The standard deviation was also less than one (at 0.725), which indicated that the participants were generally consistent in their perceptions.

Similarly, the participants moderately agreed (mean of 3.33) that the Command Agriculture ISP also presented some drawbacks as a source of agriculture financing. Such drawbacks included inadequate inputs (seed, fertilizer, herbicide and fuel), delayed payments from Grain Marketing Board, delayed input distribution, government and political involvement, having one buyer (government through the Grain Marketing Board), the current economic downturn and the breaching of penalties in contract terms. The standard deviation was also less than one (at 0.897), which indicated that the participants were, generally, consistent in their perceptions.

With regard to the alternative sources of agriculture financing, the findings were mixed. The participants moderately agreed that commercial banks (mean of 3.17) and agricultural companies (mean of 3.62) could be considered as alternative sources of agriculture financing. On the other hand, the participants moderately disagreed that microfinance firms (mean of 2.34) and development finance (mean 2.83) could be considered as an alternative source of agriculture financing. However, the standard deviations were all greater than one, at 1.238 for commercial banks, 1.239 for

microfinance, 1,160 for agricultural companies and 1.260 for development finance. This indicated that there was a greater variation in the participants' perceptions.

Pertaining to the outcome and future of the Command Agriculture ISP, the participants moderately agreed (mean of 3.08) that the programme will reduce hunger in the long run. In addition, the standard deviation was also less than 1 (at 0.976), which indicated that the participants were generally consistent in their perceptions. In contrast, the participants moderately disagreed (mean of 2.66) that the programme will be phased out. Also, the standard deviation was greater than one (at 1.061), which indicated that the participants showed greater variability in their perceptions.

In order to determine how the eight perceptions constructs (as per Table 4.5) relate to each other and how they relate to the demographic variables, an in-depth association analysis was conducted in the next section.

#### **4.4 ASSOCIATION BETWEEN THE PARTICIPANTS' PERCEPTION CONSTRUCTS AND BETWEEN THE CONSTRUCTS AND DEMOGRAPHIC VARIABLES**

##### **4.4.1 Analysis of the association between the participants' perception constructs**

In order to examine the association between the constructs, a relationship analysis was conducted. This analysis contains a correlations analysis, which were computed using Spearman rank order correlations. This was meant to establish the strength and direction of the relationships between the constructs. A cautious consideration with regard to the comparison between Pearson and Spearman correlation methods was made in order to select the appropriate method.

Murray (2013) provided empirical evidence to support the assertion that both Spearman's rho and Pearson's correlation coefficient reached the same conclusion in hypothesis testing when applied to Likert scale data. However, in this study, Spearman's rank order correlation was used because of its merits over Pearson's correlation coefficient. The Spearman coefficient can be considered to be parametric since it uses rank values. The Pearson correlation coefficient was calculated with the ranks of the values instead of their actual values. This is because ordinal data (like Likert scale data) can also be ranked, the use of a Spearman coefficient can be applied to ordinal data as well and not restricted to continuous variables, as is the case with Pearson's correlation coefficient. Moreover, the use of ranks makes a Spearman coefficient relatively more robust against outliers (Schober *et al.*, 2018).

The size of the effect was as observed by Schober *et al.* (2018) which is outlined as follows: 0.00–0.10 Negligible correlation; 0.10–0.39 Weak correlation; 0.40–0.69 Moderate correlation; 0.70–0.89

Strong correlation and 0.90–1.00 Very strong correlation. According to Steyn and Ellis (2003), these effect sizes are used to determine the strength of association between variables.

The results of the correlation analysis are reported in Table 4.6.

**Table 4.6: Correlation matrix among constructs**

		The ISP will reduce hunger	The ISP might be phased out	Commercial Banks	Microfinance	Agricultural companies	Development Finance	Benefit of CA funding	Drawbacks of CA funding
The ISP will reduce hunger	r	1.000							
	Sig.								
	N	99							
The ISP might be phased out	r	-0.058	1.000						
	Sig.	0.566							
	N	99	99						
Commercial Banks	r	-0.162	0.123	1.000					
	Sig.	0.143	0.267						
	N	83	83	83					
Microfinance	r	-.252*	.254*	.270*	1.000				
	Sig.	0.022	0.021	0.015					
	N	82	82	81	82				
Agricultural companies	r	-0.149	-0.083	.307**	0.108	1.000			
	Sig.	0.154	0.429	0.005	0.333				
	N	93	93	82	82	93			
Development Finance	r	-0.013	.322**	.496**	.221*	.252*	1.000		
	Sig.	0.906	0.003	0.000	0.047	0.022			
	N	84	84	80	81	83	84		
Benefit of CA funding	r	.255*	-0.141	-.217*	-.353**	-0.025	-0.181	1.000	
	Sig.	0.011	0.163	0.049	0.001	0.812	0.099		
	N	99	99	83	82	93	84	99	
Drawbacks of CA funding	r	0.051	-0.078	0.071	-0.210	0.118	0.140	-.260**	1.000
	Sig.	0.619	0.447	0.525	0.058	0.265	0.204	0.010	
	N	98	98	83	82	92	84	98	98

\* Correlation is significant at 0.05 level (two-tailed)

\*\* Correlation is significant at 0.01 level (two-tailed)

Source: Author's own compilation

As shown in Table 4.6 above, there was a significant negative correlation ( $r=-.252^*$ ) between (i) considering microfinance as a source of alternative agriculture finance and the perception that the (ii) Command Agriculture ISP will reduce hunger in the long run. On the other hand, there was a



significant positive correlation, between (i) considering microfinance as an alternative source of agriculture finance and (ii) the perception that the ISP might be phased out ( $r=0.254^*$ ) and (iii) the perception that commercial banks might be considered as a source of alternative agriculture financing ( $r=0.270^*$ ). These findings signified that those participants who believed in microfinance financing also believed in commercial bank funding. They also believed that the ISP might be phased out because of economic challenges. On the other hand, those who believed in microfinance funding did not perceive that the ISP would reduce hunger in the long run. This indicated that those participants who believed in private financing doubted the efficiency and future of the Command Agriculture ISP.

The study found a highly significant positive correlation ( $r=0.307^{**}$ ) between (i) considering agricultural companies as a source of alternative funding and (ii) considering commercial banks as a source of alternative funding. This indicated that those participants who believed in commercial bank financing also believed in financing from agricultural companies.

The study also found a highly significant positive correlation ( $r=0.322^{**}$ ) between (i) considering the use of development finance and (ii) the perception that the ISP might be phased out. This means that those participants who believed in the use of development finance, had less faith in the efficiency and future of the ISP. Similarly, the study also found a highly significant positive correlation ( $r=0.496^{**}$ ) between (i) considering development financing and (ii) considering commercial bank financing. This indicated that proponents of the use of development financing also highly concurred with the use of commercial bank financing. On the other hand, the study found a significant positive correlation between (i) considering the use of development finance and (ii) considering the use of microfinance funding ( $r=0.221^*$ ) and (iii) considering the use of funding from agricultural companies ( $r=0.252^*$ ). This indicated that the participants somewhat concurred with the use of different forms of private financing to agriculture.

With regard to the benefits of Command Agriculture ISP, the study found a significant positive correlation ( $r=0.255^*$ ) between (i) the benefits of the ISP and (ii) the perception that the ISP will reduce hunger in the long run. This showed that those participants who were of the opinion that the ISP realised numerous benefits were also of the perception that it would reduce hunger in the long run. On the other hand, a significant negative correlation ( $r=-0.217$ ) and a highly significant negative correlation ( $r=0.353^{**}$ ), was found between (i) the benefits of Command Agriculture ISP on one hand and (ii) considering the use of microfinance funding and (iii) considering the use of agricultural companies funding, on the other hand, respectively. This showed that those participants who believed in the benefits of the ISP did not believe in the efficiency of private financing.

The study also found a highly significant negative correlation ( $r=-.260^{**}$ ) between the benefits of the ISP and the drawbacks of the ISP. This indicated that generally, those participants who believed in the benefits of the programme had less emphasis on the programme's drawbacks.

This concludes the section that analysed the association between the eight perceptions constructs. The next section is a further analysis to determine the association between the eight constructs and the seven demographic variables.

#### **4.4.2 Analysis of the association between the participants' perception constructs and the demographic variables**

Several statistical analyses were conducted to determine the association between the eight opinions constructs (as discussed in section 4.3.2 and 4.3.3) and the seven demographic variables (as discussed in Section 4.3.1). Spearman's rank order correlation was chosen to determine whether there is a relationship between the opinion constructs and the two demographic variables, years of experience in Command Agriculture ISP and education (Section 4.4.2.1). This is because the years of experience and education are categorical data which is ordinal with quite a number of categories. The categorical variables, the age of the participants and the size of the farm, are categorised into three large categories. According to advice from the NWU Statistical Consultation Services, an analysis of means was preferred as they felt that we might see differences between those three large categories easier as with correlation analysis. Since there are more than two categories, an analysis of variance (ANOVA) was conducted (Section 4.4.4). An analysis of means, in the form of t-tests, were also conducted between the opinion constructs and the demographic variables, land ownership, gender and consider an alternative source of finance.

#### **4.4.3 Analysis between opinion constructs and demographic variables: Correlation analysis**

For the same reasons as in Section 4.4.1 (analysis of association between constructs), Spearman's rank order correlation was also preferred to analyse the relationship between the opinion constructs and demographic variables. Table 4.7 shows the correlation results between the participants' opinions and the categorical demographic variables (i) years on the programme and (ii) education.

**Table 4.7: Correlation results between the participants' opinions and the categorical demographic variables**

		How long have you been using CA funding?	Educational level
The ISP will reduce the levels of hunger	r	0.08	0.14
	Sig.	0.41	0.18
	N	99	98
The ISP might be phased out	R	-0.13	-0.04
	Sig.	0.22	0.69
	N	99	98
Commercial Banks	R	0.15	0.04
	Sig.	0.18	0.69
	N	83	82
Microfinance	R	-0.04	-0.10
	Sig.	0.75	0.37
	N	82	81
Agricultural companies	R	0.17	-0.09
	Sig.	0.11	0.40
	N	93	92
Development Finance	R	0.17	0.10
	Sig.	0.13	0.38
	N	84	83
Benefits of CA funding	R	.262**	0.00
	Sig.	0.01	0.97
	N	99	98
Drawbacks of CA funding	R	0.07	0.07
	Sig.	0.51	0.52
	N	98	97

\*\* Correlation is significant at 0.01 level (two-tailed)

Note: CA = Command Agriculture

Source: Author's own compilation

The study found a highly significant positive correlation ( $r=0.262^{**}$ ) between (i) the benefits of the ISP and (ii) the duration the participant had been under the scheme. This indicated that those participants who had used the scheme for a longer period perceived more benefits. There was no significant correlation found between the level of education and the participants' opinions.

#### 4.4.4 Analysis between opinion constructs and demographic variables: ANOVA

The analysis of variances (ANOVA) is a statistical technique used where there are more than two independent variables that need to be compared with a single dependent variable (Roberts & Russo, 2014). The purpose of ANOVA is to test for significant differences between the means of three or more groups (Watkins & Gioia, 2015). The *F* ratio or *F* statistic represents these differences between the means. If the likelihood of any difference between groups occurring by chance alone is low, this will be represented by a large *F* ratio and a probability of less than 0.05 (Kim, 2014). ANOVA was computed to detect whether there are any statistically significant differences between the participants' opinions and (i) the size of their farm/land and (ii) their age. Table 4.8 provides the level of significance values for the mean differences between the participants' opinions and the size of farm/land.

**Table 4.8: ANOVA mean differences between the participants' opinions and size of farm/land**

Opinions	Significance
The ISP will reduce the levels of hunger	0.325
The ISP might be phased out	0.694
Commercial banks	0.373
Microfinance	0.142
Agricultural companies	0.665
Development finance	0.616
Benefits of CA funding	0.694
Drawbacks of CA funding	0.361

Source: Author's own compilation

As shown in Table 4.8, all the significant values were greater than the cut-off point of 0.05. This revealed that there were no significant differences found between the participants' perceptions and the size of their farm/land.

Table 4.9 provides the level of significance values for the mean differences between the participants' opinions and their age.

**Table 4.9: ANOVA mean differences between the participants' opinions and age**

	Significance
The ISP will reduce the levels of hunger	0.553
The ISP might be phased out	0.841
Commercial banks	0.144
Microfinance	0.196
Agricultural companies	0.262
Development finance	0.695
Benefits of CA funding	0.006**
Drawbacks of CA funding	0.123

\*\*Significant level at 1% (2-tailed)

Source: Author's own compilation

Table 4.9 shows that the significant values for the future and outcome of Command agriculture ISP, alternative sources of agricultural funding and the drawbacks of Command Agriculture ISP were all greater than the cut-off of point of 0.05. This showed that there were no significant differences found between the participants' perceptions regarding the future and outcome of the ISP, alternative sources of agricultural funding, the drawbacks of the ISP and the participants' age.

On the other hand, a significant difference (at  $0.006 < 0.05$ ) was found between the participants' perceptions on the benefits of the Command Agriculture ISP and the participants' age. Table 4.10 shows the Tukey post-hoc test results for the mean differences between the participants' perceptions of the benefits of the ISP and their age.

**Table 4.10: Tukey post-hoc test results for the mean differences between perceptions on benefits and age**

<b>Benefits of Command Agriculture ISP</b>			
Tukey B <sup>a,b</sup>			
Can you please indicate your age?	N	Subset for alpha = 0.05	
		1	2
30-50	44	3.055	
< 30	38	3.268	
>50	16		3.710

Source: Author's own compilation

As shown in Table 4.10, a Tukey post hoc test showed that the participants older than 50 years had more positive perceptions on the benefits of the Command Agriculture ISP as compared to other groups (at 3.710 as compared to 3.055 and 3.268). There was no statistically significant difference in perceptions between the <30 years age group and the 30-50 years age group.

#### 4.4.5 Analysis between opinion constructs and demographic variables: Independent samples t-test

In order to assess the effect of (i) land ownership (owner/manager), (ii) gender (male/female) and (iii) the propensity to look for alternative funding on the participants' opinions, an independent t-test was conducted. The independent samples t-test is a parametric test that compares the means of two independent groups in order to determine whether there is statistical evidence that the associated population means are significantly different (Kim, 2015). This was ideal since there were two categorical independent variables, which means that unequal variances were assumed.

Table 4.11 shows the t-test results for the effect of gender on the participants' opinions. Effects are considered to be small when Cohen's d is between 0.2 or 0.3, medium effects are assumed for values around 0.5 and values of Cohen's d larger than 0.8 would depict large effects (Peng & Chen, 2014).

**Table 4.11: T-test results for the effect of gender on the participants' opinions**

Gender						
	Male		Female		Significance (p)	Effect size
	n	Mean	N	Mean		
The ISP will reduce the levels of hunger	59	3.19	40	2.93	0.176	0.27
The ISP might be phased out	59	2.51	40	2.88	0.092	0.35
Commercial banks	50	3.10	33	3.27	0.537	0.14
Microfinance	49	2.06	33	2.76	0.012*	0.58
Agricultural companies	57	3.60	36	3.67	0.778	0.06
Development finance	51	2.76	33	2.94	0.538	0.14
Benefits of CA funding	59	3.28	40	3.16	0.385	0.18
Drawbacks of CA funding	58	3.50	40	3.08	0.021*	0.48

\* Significance at 5% level (2-tailed)

Source: Author's own compilation

As shown in Table 4.11, >0.05, which is our chosen significance level ( $\alpha = 0.05$ ) for the participants' perceptions on whether (i) the ISP will reduce the levels of hunger ( $p=0.176$ ), (ii) the ISP might be phased out ( $p=0.092$ ), (iii) commercial banks can be considered as a source of alternative source of

finance ( $p=0.537$ ), (iv) agricultural companies can be considered as a source of alternative source of finance ( $p=0.778$ ), (v) development finance can be considered as a source of alternative source of finance ( $p=0.538$ ) and on (vi) benefits of Command Agriculture ISP ( $p=0.385$ ). The study, therefore, accepted the abovementioned conjectures and concluded that the perceptions of males and females were not statistically significantly different.

On the other hand, Table 4.11 also shows that ( $\alpha p<0.05$ ) for the participants' perceptions on whether: (i) microfinance can be considered as a source of alternative funding ( $p=0.012$ ) and on (ii) the drawbacks of the Command Agriculture ISP ( $p=0.021$ ). In addition, Cohen's  $d$  effect size measures also showed a medium effect (0.58 for microfinance and 0.48 for drawbacks).

The study, therefore, from the derived opinions concluded that the perceptions of males and females on whether microfinance can be considered as a source of alternative funding and on the drawbacks of the Command Agriculture ISP are statistically significantly different. Based on the results, the study concluded that; male participants generally disagreed to a greater extent (mean =2.06) than female participants (mean=2.76) on the use of microfinance as a source of alternative funding. Similarly, males' participants generally agreed to a greater extent (mean=3.50) with the drawbacks of the Command Agriculture ISP than female participants (mean=3.08).

Table 4.12 shows the t-test results for the effect of land ownership on the participants' opinions.

**Table 4.12: t-test results for the effect of land ownership on the participants' opinions**

Landowner vs manager						
	Owner		Manager		Significance	Effect size
	n	Mean	N	Mean		
The ISP will reduce the levels of hunger	65	3.11	34	3.03	0.707	0.08
The ISP might be phased out	65	2.66	34	2.65	0.949	0.01
Commercial banks	52	3.23	31	3.06	0.557	0.13
Microfinance	52	2.21	30	2.57	0.213	0.29
Agricultural companies	59	3.76	34	3.38	0.129	0.33
Development finance	54	2.83	30	2.83	1.000	0.00
Benefits of CA funding	65	3.22	34	3.25	0.839	0.04
Drawbacks of CA funding	65	3.42	33	3.16	0.186	0.28

Source: Author's own compilation

As shown in Table 4.12,  $p>0.05$ , which is our chosen significance level ( $\alpha = 0.05$ ) for the participants' perceptions on all the issues asked with regards to the Command Agriculture ISP. The study therefore

accepted the conjecture and concluded that the perceptions of land owners and managers on the Command Agriculture ISP were not statistically significantly different.

Table 4.13 shows the t-test results for the effect of looking for alternative sources of funding on the participants' opinions.

**Table 4.13: T-test results for the effect of looking for alternative sources of funding on the participants' opinions**

Looking for alternative sources of funding						
	Yes		No		Significance	Effect size
	n	Mean	N	Mean		
The ISP will reduce the levels of hunger	79	3.04	20	3.25	0.388	<b>0.22</b>
The ISP might be phased out	79	2.65	20	2.70	0.839	<b>0.05</b>
Commercial banks	70	3.31	13	2.38	0.058	<b>0.78</b>
Microfinance	68	2.37	14	2.21	0.676	<b>0.12</b>
Agricultural companies	78	3.78	15	2.80	0.025*	<b>0.89</b>
Development finance	69	3.00	15	2.07	0.008**	<b>0.77</b>
Benefits of CA funding	79	3.13	20	3.62	0.007**	<b>-0.69</b>
Drawbacks of CA funding	78	3.47	20	2.77	0.010*	<b>0.82</b>

\* Significant level at 5%

\*\*Significant level at 1%

Source: Author's own compilation

As shown in Table 4.13 above,  $p > 0.05$ , which is our chosen significance level ( $\alpha = 0.05$ ) for the participants' perceptions on whether (i) the ISP will reduce the levels of hunger ( $p=0.388$ ), (ii) the ISP might be phased out ( $p=0.839$ ), (iii) commercial banks can be considered as a source of alternative source of finance ( $p=0.058$ ) and on whether (iv) microfinance can be considered as a source of alternative source of finance ( $p=0.676$ ). The study, therefore, accepted the conjecture and concluded that the perceptions of those who would consider an alternative source of funding and those who would not consider an alternative source of funding were not statistically significantly different.

On the other hand, Table 4.13 also shows that  $p < 0.05$  for the participants' perceptions on whether (i) agricultural companies ( $p=0.025$ ) and (ii) development finance ( $p=0.008$ ) can be considered as a source of alternative funding and on (iii) the benefits ( $p=0.007$ ) and (iv) the drawbacks of the Command Agriculture ISP ( $p=0.010$ ). In addition, Cohen's d effect size measures also showed a medium effect (0.77) for development finance and benefits of Command Agriculture ISP (0.69) and a large effect on agricultural companies (0.89) and drawbacks of Command Agriculture ISP (0.82).



The study, therefore, concluded that the perceptions of those who would consider an alternative source of funding and those who would not consider an alternative source of funding on whether (i) agricultural companies and (ii) development finance can be considered as a source of alternative funding and on the (iii) benefits and (iv) drawbacks of the Command Agriculture ISP were statistically significantly different.

Based on the results, the study concluded that those participants who would consider an alternative source of finance generally considered agricultural companies to a relatively larger extent (mean=3.78) than those who would not consider an alternative source of finance (mean=2.80). Similarly, those participants who would consider an alternative source of finance generally considered development finance to a relatively larger extent (mean=3.00) than those who would not consider an alternative source of finance (mean=2.07).

In addition, those participants who would not consider an alternative source of funding generally agreed to a relatively larger extent with the benefits of the Command Agriculture ISP (mean=3.62) as compared to those who would consider an alternative (mean=3.13). Similarly, those participants who would consider an alternative source of funding agreed to a relatively larger extent with the drawbacks of the Command Agriculture ISP (mean=3.47) as compared to those who would not consider an alternative source of funding (mean=2.77).

#### **4.6 CHAPTER SUMMARY**

This chapter addressed the second theoretical objective as set out in Chapter 1. This was to assess the smallholder producers' perceptions on the use of Command Agriculture ISP as a source of agricultural funding. It also considered the quantitative secondary empirical objectives as set in Chapter 1. This chapter presented the findings and empirical analysis drawn from the quantitative data as informed by the literature review in Chapter 2. The findings were presented under the headings pilot study and results of the main study, which were further divided into analysis of demographics, association between perception constructs and association between perception constructs and demographics. Details were provided with regard to the identification and naming of factors, description analysis, correlation analysis and analysis of means (ANOVA and t-test) in order to establish any significant relationships.

Exploratory factor analysis indicated that Command Agriculture ISP provided various benefits as a source of finance. These benefits included obtaining input contracts, access of farming inputs (seed, fertilizer, herbicide and fuel), improved farm profitability, lower farming costs and readily available buyers. Similarly, the Command Agriculture ISP also presented some drawbacks as a source of agriculture financing. Such drawbacks included inadequate inputs (seed, fertilizer, herbicide and fuel),

delayed payments from Grain Marketing Board, delayed input distribution, government and political involvement, having one buyer (government through the Grain Marketing Board), the current economic downturn and the breaching of penalties in contract terms. The participants were generally consistent in their perceptions on the benefits and drawbacks of the ISP.

Descriptive analysis found that commercial banks and agricultural companies could be considered as alternative sources of agriculture financing. On the other hand, microfinance firms and development finance were less preferred. There was however a greater variation in the participants' perceptions. Pertaining to the outcome and future of the Command Agriculture ISP, the participants generally consistently and moderately agreed that the programme will reduce hunger in the long run. In contrast, the participants moderately disagreed that the programme will be phased out, although the perceptions were generally more varied.

Correlational analysis reviewed that those participants who believed in microfinance financing also believed in commercial bank funding. They also believed that the ISP might be phased out because of economic challenges. On the other hand, those who believed in microfinance funding did not perceive that the ISP would reduce hunger in the long run. This indicated that those participants who believed in private financing doubted the efficiency and future of the Command Agriculture ISP. In addition, those participants who believed in commercial bank financing also believed in financing from agricultural companies. Proponents of the use of development financing also highly concurred with the use of commercial bank financing and participants somewhat concurred with the use of different forms of private financing to agriculture.

Correlational analysis also revealed that those participants who were of the opinion that the ISP realised numerous benefits were also of the perception that it would reduce hunger in the long run. Similarly, those participants who believed in the benefits of the ISP did not believe in the efficiency of private financing and those participants who believed in the benefits of the programme had less emphasis on the programme's drawbacks. Correlation results also indicated that those participants who had used the scheme for a longer period perceived more benefits. There was, however, no significant correlation found between the level of education and the participants' opinions.

The analysis of means through ANOVA analysis revealed that there were no significant differences found between the participants' perceptions and the size of their farm/land. Similarly, there were no significant differences found between the participants' perceptions regarding the future and outcome of the ISP, alternative sources of agricultural funding, the drawbacks of the ISP and the participants' age. On the other hand, the participants older than 50 years had more positive perceptions on the benefits of the Command Agriculture ISP as compared to other groups. There was, however, no

statistically significant difference in perceptions between the <30 years age group and the 30-50 years age group.

The analysis of means through the independent t-test analysis revealed that the perceptions of males and females on whether: the ISP will reduce the levels of hunger; the ISP might be phased out; commercial banks, agricultural companies and development finance can be considered as a source of alternative source of finance and on the benefits of Command Agriculture ISP were not statistically significantly different. On the other hand, male participants generally disagreed to a greater extent than female participants on the use of microfinance as a source of alternative funding. Similarly, male participants generally agreed to a greater extent with the drawbacks of the Command Agriculture ISP than female participants. In addition, t-test results revealed that the perceptions of landowners and managers on the Command Agriculture ISP were not statistically significantly different.

T-test results also indicated that the perceptions of those who would consider an alternative source of funding and those who would not consider an alternative source of funding on whether: the ISP will reduce the levels of hunger; the ISP might be phased out; commercial banks and microfinance can be considered as a source of alternative source of finance were not statistically significantly different. On the other hand, those participants who would consider an alternative source of finance generally considered agricultural companies to a relatively larger extent than those who would not consider an alternative source of finance. Similarly, those participants who would consider an alternative source of finance generally considered development finance to a relatively larger extent than those who would not consider an alternative source of finance.

Similarly, those participants who would not consider an alternative source of funding generally agreed to a relatively larger extent with the benefits of the Command Agriculture ISP as compared to those who would consider an alternative. Similarly, those participants who would consider an alternative source of funding agreed to a relatively larger extent with the drawbacks of the Command Agriculture ISP as compared to those who would not consider an alternative source of funding.

The next chapter (Chapter 5) presents the results and analysis of the qualitative data collected.

## **CHAPTER 5: QUALITATIVE DATA ANALYSIS**

### **5.1 INTRODUCTION**

In the previous chapter, quantitative data were presented and analysed in detail. In this chapter, qualitative data were presented and analysed based on the research objectives set in Chapter 1 and the methodology detailed in Chapter 3. Data were collected using a semi-structured interview guide (Appendix II) as data collection instrument. Semi-structured interviews were considered the appropriate data collection technique because it enabled the researcher to explore the significance of the similarities and differences in perspectives between the participants. In addition, semi-structured interviews allowed the interviewer to do in-depth questioning on the phenomenon under study while maintaining the same order of questioning for all the interviewees. This enhanced the credibility and comparability of the study findings.

After the interviews were conducted, themes and sub-themes were developed from the transcribed interviews through a process of open, axial and selective coding (refer Chapter 3). Theme 1 focused on the familiarity of the participants with the Command Agriculture ISP. It is linked to the first qualitative empirical objective (Section 1.8.2) of the study which was to examine the internal strengths and weaknesses and external opportunities and threats of the Command Agriculture ISP from the CBZ and AGRITEX officials' perspective. Theme 2 covers the internal strengths and weaknesses and external opportunities and threats of the Command Agriculture ISP. This is also linked to the first qualitative empirical objective of the study as stated above. Theme 3 reflects on the outcome and future of the Command Agriculture ISP. This is linked to the second qualitative empirical objective (Chapter 1, Section 1.8.2), which was to assess the CBZ and AGRITEX officials' perception of whether the Command Agriculture ISP's intended outcome was achieved and obtain their view about the programme's future.

Data collected through the semi-structured interviews were analysed and interpreted in connection with the literature reviewed in Chapter 2. The discussion also elaborated on how the data collected and analysed related to the main objective and empirical objectives of the study. Each main theme and sub-theme generated from the interviews was also discussed in greater detail and supported by specific comments made by the participants. The sub-themes that were identified from the codes formed the basis of the discussion in this chapter.

### **5.2 DATA COLLECTION PROCESS**

Semi-structured interviews for the three CBZ officials were conducted at the CBZ Agroyield Offices in Harare – the capital city of Zimbabwe. On the other hand, one of the planned three interviews with

AGRITEX officers was done at the AGRITEX offices in Harare, while the other two were conducted telephonically from South Africa. This was necessitated by the fact that these AGRITEX officers are rarely in the office, but rather out in the field visiting customers most of the time. All the planned six interviewees were successfully conducted. The planned number was originally a guide on the minimum number of interviewees expected, however, the adequacy of the sample size was based on the point of saturation. Data saturation was reached with participant number five as similar responses were recorded. However, since the last participant was accessible, the researcher decided to complete the last interview. The results affirmed the position that saturation had indeed been reached since no additional themes were generated from this final participant.

Of the six interviews conducted, two interviews with AGRITEX officers were voice-recorded using a digital tape recorder with the permission of the interviewees. The other four participants did not consent to be recorded because to them the topic was politically sensitive. For these, extensive field notes were taken during the interviews. Before the interviews were conducted, an interview schedule was drawn up indicating the time and venue of the planned interviews taking into account the COVID-19 regulations. For the face-to-face interviews, office space was booked and secured. Concerning the telephonic interviews, the participants were asked to confirm that they were in a comfortable place to speak before the interview commenced. All participants confirmed that they were comfortable and ready to provide answers to the interview questions without any disturbances. Digital tape recordings and the field notes from the interviews were listened to, reviewed and transcribed using Microsoft Excel. The latter was utilised as it enabled easier question-by-question comparison between the responses.

### **5.3 DATA ANALYSIS**

Data were analysed using thematic analysis as described in Chapter 3 (Section 3.7). Data saturation was reached as described in Section 5.2. Each transcript was carefully reviewed repeatedly and interrogated to obtain a clearer understanding of the context that each participant was conveying and elaborating upon.

The researcher started by reading each transcript and then focused on each response to the interview question. Thematic analysis was utilised by applying manual coding to ensure a true reflection of responses and to avoid considering out-of-context phrases. Based on the literature review and research objectives, each theme was deduced from the interview transcripts. Through induction, sub-themes were generated from these main themes. As mentioned previously, a spreadsheet using Microsoft Excel was developed and updated to transcribe, analyse and code the interviews.

Pseudo names were used to identify the participants to preserve anonymity. Additional columns containing verbatim quotes from each participant were inserted. These verbatim responses corresponded to the themes generated by the researcher. A horizontal reflection of the verbatim responses across participants enabled the researcher to compare their views on each theme and sub-theme.

A coding frame was provided using an additional column that provided the number of verbatim comments that arose for each theme. With reference to Williams and Moser (2019), a combination of coding and content relevance evaluation was used to explore the significance of each sub-theme through the verbatim quotes. In the next section, each predetermined theme and sub-theme generated from the semi-structured interviews was discussed in detail. The total number of predetermined themes was three, each having various generated sub-themes, which are discussed in detail in the following section.

#### **5.4 ANALYSIS OF THEMES AND SUB-THEMES**

Three main themes were predetermined, while sub-themes were generated based on the interview guide and the semi-structured interviews conducted. The sub-themes share the same main concept with the theme. The interview guide was organised into three sections based on the research objectives. As this is a post-positivistic study, the various questions were interpreted using thematic analysis. Predetermined themes comprised the three main themes in the interview guide. Instead of discussing responses to individual questions, sub-themes were generated during the coding process. To explore the participants' experiences and perspectives, the following themes and sub-themes in Table 5.1 were developed from the research objectives, interview guide and participants' responses.

**Table 5.1: Themes and sub-themes generated from the semi-structured interviews**

Transcription of tape-recorded audio interviews and field notes	
Themes	Sub-themes
<p><u>Theme 1</u> The familiarity of the officials with the Command Agriculture ISP (Section A: Question 1, 2, 3 and 4).</p>	<ul style="list-style-type: none"> <li>• The familiarity of the officials with the objectives of the Command Agriculture ISP; and</li> <li>• The nature of the relationships among key programme stakeholders.</li> </ul>
<p><u>Theme 2</u> The internal strengths and weaknesses and external opportunities and threats of the Command Agriculture ISP (Section B: Question 1, 2, 3 and 4).</p>	<ul style="list-style-type: none"> <li>• Programme strengths and opportunities; and</li> <li>• Programme weaknesses and threats.</li> </ul>
<p><u>Theme 3</u> The outcome and future of the Command Agriculture ISP (Section C: Question 1, 2, 3, 4 and 5).</p>	<ul style="list-style-type: none"> <li>• Achievements of the Command Agriculture ISP.</li> <li>• Reasons for targeting smallholder farmers; and</li> <li>• Perceived future thoughts of what will happen to the Command Agriculture ISP.</li> </ul>

Source: Author's own compilation

The contents in Table 5.1 can be explained as follows:

Theme 1 analysed the familiarity of the CBZ officials and AGRITEX officers with the Command Agriculture ISP. This theme consisted of two (2) sub-themes, namely:

- The familiarity of these officials with the objectives of the Command Agriculture ISP; and
- The nature of the relationships among key programme stakeholders.

Theme 2 covers the internal strengths and weaknesses and external opportunities and threats of the Command Agriculture ISP. It has two sub-themes, namely:

- Programme strengths and opportunities; and
- Programme weaknesses and threats.

Theme 3 reflected on the outcomes and future of the Command Agriculture ISP. This theme consisted of three (3) sub-themes, namely:

- Achievements of the Command Agriculture ISP
- Reasons for targeting smallholder farmers; and
- Perceived future thoughts of what will happen to the Command Agriculture ISP.

The next sections will address the themes in detail in relation to the interview responses.

## **5.5 THEME 1: THE FAMILIARITY OF THE OFFICIALS WITH THE COMMAND AGRICULTURE ISP**

The discussion of theme 1 comprise all the sub-themes relating to the AGRITEX and CBZ officials' familiarity with the Command Agriculture ISP. It is linked to the first qualitative empirical objective of the study which was to examine the internal strengths and weaknesses and external opportunities and threats of the Command Agriculture ISP from the officials' perspective. This theme generated two sub-themes. These are (refer Table 5.1): 1) the familiarity of the officials with the objectives of the Command Agriculture ISP; and 2) the familiarity with the nature of the relationships among key programme stakeholders.

### **5.5.1 Sub-theme 1: Familiarity of the officials with the objectives of the Command Agriculture ISP**

All participants showed extensive exposure and knowledge of the objectives of the Command Agriculture ISP. In this regard, the participants reflected that the Command Agriculture ISP in Zimbabwe was a government initiative in collaboration with banks, in other words, a public-private partnership. The ISP was triggered by the need to resuscitate farming activities. The programme has multiple objectives/outcomes, which include:

- ensuring food security in Zimbabwe,
- reducing imports,
- enhancing exports,
- empowering smallholder farmers, and
- restoring the status of Zimbabwe as the breadbasket of Africa.

The primary outcome is to improve the lives of the country's citizens. The key components of the programme include the provision of finance and improving the farming knowledge of smallholder farmers.

For example, **Participant [A3]** remarked:

*'It is said that the country was importing too much grain and also the need to empower and improve the lives of smallholder farmers, the government introduced the Command Agriculture ISP. As AGRITEX we offer farming knowledge and Command Agriculture ISP contracts to farmers.'*



Similarly, **Participant [B3]** echoed:

*'The ISP came into play as a way of improving food security, import-substitution, and export motivation. With us doing all the bank or finance-related work.'*

**Participant [B2]** further supported this argument by elaborating:

*'The ISP tries to ensure that every farmer/producer has access to inputs, to increase output. The aims have been met: refer to wheat 2020 season and maize 2020/21 season where we had a bumper harvest nation-wide.'*

These findings provided empirical support for the theoretical assertions that the purpose of the ISPs was to improve the productivity of the agricultural sector and the overall standard of living in a given country (Wirakusuma, 2020). This was achieved through increased food production, increased income for agricultural producers and robust national food security systems (Ricker-Gilbert & Jayne, 2011). As asserted by Chirwa and Dorward (2013), agricultural extension services were also confirmed to be a critical success factor for ISPs. Furthermore, the study found that the ISP in Zimbabwe seemed to have avoided the observed shortcoming of the Malawian programme, which focused on fertilizer only, ignoring other essential inputs as stated by Chibwana *et al.* (2014). In this regard, the programme focused on all inputs. However, limitations were still observed on the development of infrastructure.

### **5.5.2 Sub-theme 2: The nature of the relationships among key programme stakeholders**

The second sub-theme focused on the nature of the relationships among key stakeholders of the programme. All the participants emphasised that each Command Agriculture ISP stakeholder had a specific role to play and these different roles complemented each other to ensure the success of the programme. In addition, the relationships amongst the key stakeholders were considered vital in ensuring the success of the programme.

Most of the respondents alluded that the relationship between the facilitators of the ISP programme and smallholder farmers ranged from satisfactory to good. A few others asserted that although the relationship was good, it was still a work in progress and more still needed to be done to bring it to a satisfactory level. One respondent implied that the relationship could be improved by also including farmers with larger hectares.

For example, **Participant [A3]** remarked;

*'We have to collaborate with banks for payments and financial assistance. We have to continuously improve the relationship amongst the key stakeholders and farmers because it is not always smooth.'*

Similarly, **Respondent [B3]** echoed;

*'...The government through AGRITEX handles other logistics related to contracts and provision of farming knowledge. We have to collaborate always. I also think that including farmers with larger hectares can improve relationships amongst stakeholders. This is because at the moment larger farmers feel that they are disadvantaged.'*

These findings corroborate the observations by Dougill *et al.* (2017) in their evaluation of the Malawian ISP. The authors observed that institutional weaknesses and disconnections and conflict of interests amongst key stakeholders derailed the success of the ISP.

## **5.6 THEME 2: THE INTERNAL STRENGTHS AND WEAKNESSES AND EXTERNAL OPPORTUNITIES AND THREATS TO THE COMMAND AGRICULTURE ISP**

Theme 2 comprised all sub-themes that are connected to the internal strengths and weaknesses and external opportunities and threats to the Command Agriculture ISP (refer Table 5.1). This is also directly linked to the first qualitative empirical objective of the study which was to examine the internal strengths and weaknesses and external opportunities and threats of the Command Agriculture ISP from the officials' perspective. This theme comprised two sub-themes, namely 1) programme strengths and opportunities; and 2) programme weaknesses and threats.

### **5.6.1 Sub-theme 1: Command Agriculture ISP strengths and opportunities**

All participants elaborated that the Command Agriculture ISP had many strengths and opportunities. The identified main strengths of the ISP were that it had guaranteed financial and political backing from the government and also that the government formed partnerships with agricultural input suppliers. In addition, the programme was appealing to farmers because it increased the buying price of crops, provided easy access to inputs and reduced production costs. For example, **Participant [A2]** remarked:

*'The strength of the ISP is in its reduction of production costs and partially easy access to inputs.'*

**Participant [A1]** also added:

*'Command Agriculture ISP has the potential to increase the buying prices of field crops.'*

Similarly, **Participant [B1]** noted:

*'The strengths of the ISP include its partnerships with new suppliers and the fact that the government being the main stakeholder means there is a backup.'*

*'The strength of the ISP lies in political and financial power because the government is the main stakeholder.'* **Participant [A3].**

In addition, the participants also alluded that the opportunities the ISP could take advantage of include:

- targeting farmers of different sizes;
- providing farming infrastructure;
- supply chain partnerships; and
- extending support to a variety of farm output.

For example, **Participant [A1]** remarked:

*'They should also target medium to large scale farmers.'*

**Participant [A2]** also added:

*'The government should install irrigation facilities for farmers and offer more implements for the farmers to rent.'*

**Participant [A3]** further alluded to:

*'The programme facilitators should partner with agricultural companies especially suppliers of inputs.'*

*'The programme should also venture into livestock and providing farm implements to the farmers.'*

**Participant [B1]**

These findings support the assertion by Fan *et al.* (2008) that short-term input distribution should be complemented by public expenditures on crop research and development (R&D) and physical infrastructure, which have continuously been found to generate huge benefits to society on a long-term basis. This echoed the same sentiments with what was found in six Asian countries, namely China, India, Indonesia, South Korea, Taiwan and Vietnam (EIU, 2008) and in India (Fan *et al.*, 2008).

## 5.6.2 Sub-theme 2: Command Agriculture ISP weaknesses and threats

All the respondents also elaborated that the Command Agriculture ISP had many internal weaknesses and faced many external threats that derailed its success. The identified weaknesses of the ISP include:

- delayed distribution of inputs;
- selective distribution of inputs because of political influences and corruption;
- defaulting farmers; and
- the effects of drought and theft.

One respondent also cited conflict of interest amongst major stakeholders as another challenge.

For example, **Participant [A2]** remarked:

*'Not every farmer is getting access to the inputs because of political factors. Also, some farmers are failing to pay back the government because of factors like drought and theft.'*

Similarly, **Participant [A3]** added:

*'The programme has several weaknesses, which are, delayed input distribution, political involvement (corruption). Some of the farmers will have to struggle to get the inputs or Command Agriculture ISP contracts because of corruption.'*

Political influences and selective distribution of inputs remained one of the major problems as observed by Jayne and Rashid (2013). Political elite capture was as observed by López (2005) in agricultural subsidy programmes in Latin America. In addition, delayed input distribution was also a major weakness as observed in Malawi (Holden & Lunduka, 2013).

Furthermore, the participants also alluded that the main threats to the Command Agriculture ISP include climate change, economic downturn and political influences.

For example, **Participant [A1]** remarked:

*'Climate change has been the most drastic threat to the Command Agriculture ISP, because it is affecting the harvests and the farmers will fail to pay back the credits.'*

**Participant [B3]** added:

*'The threats to the ISP include poor input distribution, the adverse effects of the economic downturn and the negative influence of politics.'*

The adverse effects of political manipulation were also observed in Ghana by Banful (2011). However, in addition to that, the more recent challenges include climate change and the economic downturn in Zimbabwe.

## **5.7 THEME 3: THE OUTCOME AND FUTURE OF THE COMMAND AGRICULTURE INPUT SUBSIDY PROGRAMME**

As shown in Table 5.1, theme 3 comprised all the sub-themes that related to the outcomes and future of the Command Agriculture ISP. This is linked to the second qualitative empirical objective which was to assess the programme's officials' perception of whether the Command Agriculture ISPs intended outcome was achieved and obtain their view about the programme's future.

This theme comprised three sub-themes, namely: 1) achievements of the Command Agriculture ISP; 2) reasons for targeting smallholder farmers; and 3) the perceived future thoughts of what will happen to the Command Agriculture ISP.

### **5.7.1 Sub-theme 1: Achievements of the Command Agriculture ISP**

All the participants reached a consensus on the fact that the Command Agriculture ISP achieved its intended outcomes. These outcomes include improving food security and enhancing the quality of life of smallholder producers as remarked by **Participant [A1]**:

*'The Command Agriculture ISP has been positively contributing to the country's food security, it has been helping to improve or to develop the lives of the smallholder producers.'*

**Participant [A2]** confirmed that imports were reduced:

*'The government recently cancelled the importation of grain into the country saying it has enough grain to feed the nation and only because of the bumper harvests influenced by the Command Agriculture ISP.'*

While **Participant [A3]** further explained that the programme was providing access to low-cost inputs, offering flexible credit terms and reducing production costs. All these outcomes improve farm profitability:

*'The smallholder producers are getting inputs at subsidised prices on credit and they will have to pay back after harvesting and selling their produces. This seems to be profitable and the production/farming costs are quite low.'*

These findings support the assertion by Dorward (2009) that the majority of subsidy programmes implemented in Africa have been quite significant and have subsidised input prices by at least 50 percent to make inputs affordable for producers.

### **5.7.2 Sub-theme 2: Reasons for targeting smallholder farmers**

All the respondents alluded that the programme's focus of targeting smallholder farmers had many reasons and benefits including improving their quality of life and improving the country's food security. This was achieved through empowering farmers by improving the production capacity of a large proportion of farmers, presented by smallholder farmers as confirmed by **Participant [A2]**:

*'Smallholder producers, all of them combined, are said to be owning a very large part of the land in Zimbabwe, hence they need to be empowered to improve food security in the country.'*

**Participant [A3]** commented on the role that politics played in the target of smallholder producers:

*'The main aim was to improve food security and reduce poverty but some of the influences are political.'*

**Participant [B1]** emphasised creating of employment and the reduction in poverty:

*'Poverty reduction and employment creation as those who have joined the programme can now employ others to help with farming activities.'*

When comparing the findings with the extant literature with regards to the model of ISP, the study found that Zimbabwe operated a 'smart subsidy programme' which, by definition, was designed to target the poor, use market-based solutions and promote pro-poor economic growth through increasing competition, supporting the private sector, enhancing economic efficiency and empowerment of producers (Morris *et al.*, 2007; Tiba, 2011a).

In addition, similar to the Malawian experience, the officials had consensus that the programme reduced imports and improved standards of living (Jayne & Rashid, 2013). Similarly, the programme improved farm productivity as was observed by Wirakusuma (2020) in Indonesia. Thus, the study supports empirical studies that found that input subsidies increase agricultural output and productivity (Alston & James, 2002; Nasrin *et al.*, 2018) and contradict those that found that input subsidies

significantly reduced farm output and productivity (Blancard *et al.*, 2006; Ciaian & Swinnen, 2009). The findings also contradicted what Mason and Jayne (2013) found on their review of ISP in Zambia, which revealed that ISP fertilizer beneficiaries were households that cultivated larger areas.

However, even though this Zimbabwean programme was viewed as successful, it has its own share of shortcomings. In this regard, the study found that the facilitators of the ISP received numerous grievances from the farmers as remarked by **Participant [A3]**:

*'The farmers do encounter problems from time to time, some of them are delayed input distribution and input shortages and these issues are really difficult to solve. So, the farmers will have to wait until they get the inputs.'*

Similarly, **Participant [B1]** added:

*'Yes, the producers have so many grievances and they differ from one person to the next (for example, misstated bank statements, delayed payments) therefore we address them as they come.'*

**Participant [B2]** also alluded:

*'We encounter a lot of complaints from the farmers and we refer some of the problems to the GMB officials and address those that are bank related.'*

The grievances by the farmers can be summarised as delayed input distribution, input shortages, errors made by banks and delayed payments. Some complaints were resolved, others were referred to other facilitators while others were never resolved. One respondent remarked that grievance resolution was still a work in progress.

### **5.7.3 Sub-theme 3: The perceived future thoughts of what will happen to the Command Agriculture ISP**

The third sub-theme relating to the main theme of the outcome and future of the Command Agriculture ISP was around the perceived future thoughts of what would happen to the programme. The participants all agreed that the programme had improved over time. Such improvements included that more emphasis was placed on modern farming techniques, that the programme administration had improved and that a clear definition of stakeholder roles was established. **Participant [A2]**, for example, remarked that:

*'Improvements have been made to the Command Agriculture ISP. There have been efforts to make smallholder farmers use more modern farming techniques and implements so as improve efficiency and effectiveness.'*

**Participant [A3]** added:

*'There is no clearer definition of duties or roles of the departments involved (Agritex, CBZ bank, the GMB). These improvements have been done so that the Command Agriculture ISP will attract more smallholder producers in the country and also to improve both the home and the international grain market.'*

*'The management and administration of the Command Agriculture ISP have improved. It is now more traceable and auditable. The need to grow and make the programme a going concern has fuelled the change.'* **Participant [B1]**

The objectives of these changes were to:

- improve the overall efficiency and effectiveness of the programme;
- attract more farmers to join the programme;
- improve access to markets;
- improve transparency; and
- achieve programme growth and sustainability.

Considering the above, the majority of the participants were confident that the Command Agriculture ISP would continue into the future.

**Participant [B2]** attributed this to improved programme administration:

*'The ISP will continue since the government has engaged the bank for better management and administration.'*

**Participant [B1]** highlighted that innovative approaches are being employed:

*'The programme will continue because the stakeholders are considering new ideas. One of the new ideas is to incorporate large-scale producers only to reduce bad debts issues.'*

**Participant [A1]** were however a bit nervous about the programme's success but then highlighted the role that government support played:



*'It's a 50/50 situation, but the government will be able to sustain this programme, so it will not phase out.'*

**Participant [A3]**, however, emphasised that the programme's performance depended on the general performance of the country's economy, which is not very favourable at the moment:

*'As long as the country continues to struggle economically, the Command Agriculture ISP will struggle as well.'*

It can be concluded that all the participants were not completely convinced of the programme's sustainability.

## **5.8 CHAPTER SUMMARY**

This chapter presented the analysed qualitative data based on the stated research objectives and the articulated research methodology. Three themes were predetermined and included in the interview guide. These three themes were divided into sub-themes. In addition, verbatim quotes were presented as evidence of the themes generated. Overall, the findings indicated that the Command Agriculture ISP in Zimbabwe achieved its intended objectives and outcomes to a greater extent. However, various challenges still exist but the intention exists by participants to continuously drive and improve the programme. From the officials' perspectives, the Command Agriculture ISP in Zimbabwe has a reasonable future.

The study found that the two key strengths of the Command Agriculture ISP in Zimbabwe are that it was a government initiative and the government collaborated with banks, in other words, a public-private partnership. The ISP was triggered by the need to resuscitate farming activities. The programme has multiple intended outcomes which include ensuring the provision of finance, empowering smallholder farmers, reducing imports, enhancing exports and restoring the status of Zimbabwe as the breadbasket of Africa. Most importantly, the programme is intended to improve food security in Zimbabwe. The ultimate outcome was to improve the lives of the citizens through the provision of finance and farming knowledge to smallholder farmers.

From the perspective of programme officials, the study found that the ISP had improved smallholder farmers' access to affordable inputs, which has lowered their production costs, improved crop variety and improved farm profitability. This has in turn, increased crop yields and food security which improved the overall standard of living. In addition, the study found that the strengths of the ISP lay in the fact that it had guaranteed financial and political backing from the government and also forged partnerships with suppliers.

On the other hand, the study found that the weaknesses of the ISP included delayed distribution of inputs and selective distribution of inputs. This was attributed to political influences and internal corruption. Other weaknesses included farmers defaulting on their debt, theft and conflict of interest amongst major stakeholders.

With regards to opportunities, the interviewees alluded that the ISP could take advantage of targeting farmers of different sizes providing farming infrastructure, supply chain partnerships and extending support to a variety of farm output. On the other hand, the study found that the main threats to the Command Agriculture ISP included mainly climate change in addition to the economic downturn and political influences.

The interviewed officials had consensus on the opinion that the ISP had achieved its objectives and outcomes. This was achieved through providing access to low-cost inputs, offering flexible credit terms, reducing production costs, improving farm profitability, reducing imports, improving food security and enhancing the quality of life. In this regard, the targeting of smallholder producers managed to empower farmers, reduce poverty, improve the quality of life, improve food security, create employment and achieve political objectives. This was enabled through improving the capacity of a larger proportion of farmers, which are smallholder farmers. However, challenges encountered included receiving numerous grievances from the farmers regarding delayed input distribution, input shortages, bank errors and delayed payments. The main challenge was that some of the complaints remained unresolved.

The study found that the Command Agriculture ISP has evolved for the better over time. In this regard, some changes were implemented to improve the ISP. Such changes included more emphasis on modern farming techniques, improved programme administration and a clear definition of stakeholder roles. The objectives of such changes were to improve programme efficiency and effectiveness, attract more farmers, improve markets, improve transparency and achieve programme growth and sustainability.

Based on the achieved outcomes and improvements above, most interviewees thought that the ISP would continue. This was attributed to government supporting the programme, innovation by stakeholders and improved administration. However, the performance of the Command Agriculture ISP was also considered to be positively related to the performance of the economy in general, which is not performing at its best at the moment.

The next chapter will outline in detail the conclusions and recommendations derived from the whole study.

## **CHAPTER 6: CONCLUSION AND RECOMMENDATIONS**

### **6.1 INTRODUCTION**

The previous chapter analysed the qualitative data collected from interviewees. The purpose of this chapter is to provide conclusions and recommendations based on the quantitative and qualitative data collected as described in the last empirical secondary objective in Chapter 1 (Section 1.8.2). The chapter will start by giving a review of all the chapters and then follow up by summarising all the objectives of this study and how they were addressed. It will also provide recommendations, limitations to the study and suggestions for further research.

### **6.2 REVIEW OF CHAPTERS**

The aim of this study was to explore Command Agriculture ISP as a source of funding for smallholder producers in Zimbabwe. It was divided into six chapters, namely:

- Chapter 1 – Introduction and background of the study
- Chapter 2 – Input subsidy programmes and other agricultural financing schemes
- Chapter 3 – Research methodology
- Chapter 4 – Quantitative data analysis and reporting
- Chapter 5 – Qualitative data analysis and reporting
- Chapter 6 – Conclusions and recommendations

Chapter 1 started by providing a background to the study which highlighted the importance of agriculture in the world and emphasised the importance of smallholder producers. The latter are believed to be contributing 70% of the food supply in Africa (Steinmann, 2014). The background also included how the economic downturn in Zimbabwe has affected the smallholder producers, the various available agricultural financing schemes and contextualised the country as a whole. The chapter further defined what the Command Agriculture ISP is and its role in Zimbabwe. The chapter also included a brief literature review on ISPs, agricultural financing alternatives, the knowledge gap, problem statement, research objectives and most importantly the relevance of the study to management accountancy. The chapter concluded with a chapter overview of the whole study.

Chapter 2 provided a review of the extant literature on ISPs. It provided the conceptualisation and the historical evolution on ISPs in Africa. It was done by describing how other countries like Zambia and Malawi are utilising ISPs to cater for smallholder producers' financial needs and in turn improving food security (Jayne & Rashid, 2013; Kherallah *et al.*, 2002; Morris *et al.*, 2007; World Bank, 2009). The chapter also discussed various models of ISPs like smart subsidies and universal subsidies and the

benefits, strengths and weaknesses of ISPs. The perspectives of other authors on ISPs, smallholder producer agricultural finance and the economic and social outcomes of the programmes were presented. The chapter concluded by setting out a conceptual framework to explain how the literature findings relate to the topic under study.

Chapter 3 presented a road map followed in terms of research methodology. The researcher followed the honeycomb of research methodology designed by Wilson (2014). The honeycomb consists of six elements, namely: (1) research philosophy, (2) research approach, (3) research strategy, (4) research design, (5) data collection, and (6) data analysis techniques. The study is nested in post-positivistic philosophical approach following both inductive and deductive research approach. The mixed method research strategy and a sequential explanatory research design to integrate the quantitative and qualitative data were selected. Quantitative data were collected making using structured questionnaire and semi-structured interview guide for the qualitative data. The data were analysed using SPSS and thematic analysis for the quantitative and qualitative data respectively. The chapter provided a discussion of the population and sampling techniques as well as the ethical considerations applied to this study. Chapter 3 concluded by describing the stakeholder theory and the theoretical framework to this study.

Chapter 4 presented and reported the quantitative data collected from the questionnaire (Appendix I). The quantitative data consisted of the perspectives of the smallholder producers in Zimbabwe on the Command Agriculture ISP and how the programme has impacted their financial and social decisions.

Chapter 5 presented and reported the qualitative data gathered from the semi-structured interviews (Appendix II) that were carried out. The interviews aimed at extracting information on the impact of the Command Agriculture ISP from officials who deal with the smallholder producers on a daily basis and these are the CBZ bank and AGRITEX officers.

This final chapter (Chapter 6) provided a summary of the whole study.

The next section presents a summary of the research objectives and how each objective was addressed. The objectives were split into the main objective and secondary objectives.

### **6.3 MAIN OBJECTIVE**

***To examine the perceptions of the Command Agriculture input subsidy programme as a source of funding for smallholder producers in Zimbabwe.***

The main purpose of this study was to examine the perceptions on the Zimbabwean Command Agriculture ISP as a source of agricultural funding for smallholder producers in the country. The

objective was addressed by, *inter alia* providing the background of the topic in Chapter 1, reviewing the previous literature in Chapter 2, outlining the research methodology road map, collecting data and reporting the findings.

The findings from the quantitative data provided insights on how the smallholder producers in Zimbabwe perceived the Command Agriculture ISP as a source of funding. The descriptive statistics analysis highlighted that Command Agriculture ISP has its benefits as a source of funding to smallholder producers as the majority of the smallholder producers agreed to the perceived benefits such as obtaining input contracts, access to farming inputs (seed, fertilizer, herbicide and fuel), improved farm profitability, lower farming costs and readily available buyers of their produces. However, the Command Agriculture ISP has its apparent weaknesses which with most smallholder producers agreed with to a greater extent. The weaknesses include delayed input distribution, government and political involvement, having one buyer (Government through the Grain Marketing Board), the current economic downturn and the breaching of penalties in contract terms.

These weaknesses have contributed to some of the smallholder producers to consider other sources of agricultural finance. The quantitative data analysis using SPSS showed that most of the participants considered looking for alternative source of funding. The majority favoured commercial banks and agricultural companies to micro finance and development finance institutions. There was, however, a variation on the opinions of the smallholder producers on the future of the Command Agriculture ISP. Most participants believed that the programme would reduce hunger and would continue to operate in the foreseeable future.

The findings from the semi-structured interviews focused on gathering the perceptions of the CBZ and AGRITEX officials who work closely with the producers in facilitating the Command Agriculture ISP. The officials were asked to explain their relationship with the programme and the experiences and problems they encounter in working with the producers. They were also asked to give their perspective on the strengths and the weaknesses of the programme and their view on the programme's future. The interviewees highlighted two key strengths of the programme that it is a government initiative and the government collaborated with banks, in other words, a public-private partnership. The ISP was triggered by the need to resuscitate farming activities. The programme has multiple intended outcomes, which include ensuring the provision of finance, empowering smallholder farmers, reducing imports and enhancing exports, among others.

Concerning the future of the Command Agriculture ISP, most of the interviewees, similar to smallholder producers, believed that it will continue to operate in the foreseeable future. This gave a

perception that it will not be phased out as some of the previous ISPs initiated by the government of Zimbabwe.

Therefore, the main objective was achieved, as the quantitative and qualitative data were fully collected, analysed, presented and reported in consultation with the reviewed literature and the proposed research methodology.

## **6.4 SECONDARY OBJECTIVES**

The secondary objectives consisted of theoretical and empirical objectives and they are presented below in separate headings.

### **6.4.1 Theoretical objectives**

***To review the literature on ISPs to highlight salient factors influencing Command Agriculture ISP as an important source of funding for smallholder producers***

The first theoretical objective was to review the literature on agricultural ISP and alternative sources of funding for smallholder producers paying special attention to the Command Agriculture ISP.

Chapter 2 addressed this objective by conceptualising of the ISPs, their historical evolution in Africa, the various ISP models, benefits and drawbacks of using ISPs and smallholder producers' agricultural financing social and economic outcomes. The literature study found out that, ISPs in agriculture generally take the form of discounted prices on inputs such as fertilizers, seeds, machinery, pesticides, or other credit facilities. Most of these programmes in Africa are funded by governments. Theoretically, the allocation of government funds to agricultural activities is expected to result in increased food production, increased income for agricultural producers and robust national food security systems (Ricker-Gilbert & Jayne, 2011).

The chapter continued to explain the models of ISPs like the smart subsidies and universal subsidies (Tiba, 2011a). In addition, the literature was reviewed on the strengths and the weaknesses of ISPs as a source of funding for smallholder farmers as well as the social and economic benefits. The strengths are that producers are able to access inputs at cheaper prices, reduce their production costs and earn a reasonable profit that help in improving their lives (Dorward, 2009; Jayne & Rashid, 2013; Tiba, 2011a; Wirakusuma, 2021). However, these agricultural subsidy programmes have their weakness which include: negative political influences, distribution challenges and input shortages (Kaur & Sharma, 2012; Nindi, 2020; Shively & Ricker-Gilbert, 2013).

The chapter then ended with a Command Agriculture ISP conceptual framework showing its depended and independent variables (refer to Figure 2.3). The conceptual framework to indicate the relationship between the findings in the literature review and its relevancy to this study.

This objective was therefore reached, as the literature review culminated in constructing the research instruments.

***To identify and assess other alternative sources of agricultural finance that can be considered by smallholder producers in Zimbabwe***

The second theoretical objective was to identify the most preferable alternative sources of agricultural finance by smallholder producers in Zimbabwe. The literature review in the first and second chapter revealed that producers can obtain financing from sources like commercial banks, agricultural companies, development finance institutions and micro finance institutions (Chisasa, 2014; Middelberg, 2013).

The smallholder producers were asked to rank the various sources of funding. Most of them seemed to favour commercial banks and agricultural finance companies while microfinance firms and development finance were less preferred. This assisted in addressing this second theoretical objective.

#### **6.4.2 Empirical objectives**

The empirical objectives were addressed as follows:

***To examine the influence of demographical factors on qualifying for the Command Agriculture input subsidy programme as a source of funding***

The first empirical objective was to assess the influence of demographics like land ownership, farm size, gender, level of education and age on qualifying for the agriculture ISP. The questions concerning these demographics can be found in the first section of the questionnaire (refer to Appendix I).

The ANOVA analysis showed that there were no significant differences between participants' perceptions and the size of their farms, age groups or level of education. The correlation analysis did, however, show that females are risk-averse whilst males are risk-tolerant when choosing alternative sources of funding. The t-test results revealed that the perceptions of landowners and managers on the Command Agriculture ISP were not statistically significantly different. The demographics also showed that most of these farmers are highly literate with only a few obtaining primary education only,

which is regarded as the low level of education in Zimbabwe. This indicates that the education level is not a requirement on qualifying for the Command Agriculture ISP.

The analysis of these demographics through the descriptive statistics helped in addressing the first empirical objective.

***To evaluate the benefits and drawbacks of using Command Agriculture ISP as a source of funding and establish the future of the programme from the smallholder producers' perspective***

The second empirical objective was to evaluate the perceived benefits of the Command Agriculture ISP as well as establishing what will happen to the programme in the long run. This objective was mainly addressed in Chapter 4 (quantitative data analysis).

Descriptive analysis showed that the smallholder producers were generally consistent in their opinions on the benefits and drawbacks of using Command Agriculture ISP as a source of funding. The questionnaire (Appendix I) indicated the perceived benefits of the Command Agriculture ISP derived from the literature review. These benefits included obtaining input contracts, access of farming inputs (seed, fertilizer, herbicide and fuel), improved farm profitability, lower farming costs and readily available buyers. Similarly, the Command Agriculture ISP also presented some drawbacks as a source of agriculture financing. Such drawbacks included inadequate inputs (seed, fertilizer, herbicide and fuel), delayed payments from Grain Marketing Board, delayed input distribution, government and political involvement, having one buyer (government through the Grain Marketing Board), the current economic downturn and the breaching of penalties in contract terms. The participants were generally consistent in their perceptions on the benefits and drawbacks of the ISP.

The study also showed that most of those farmers who strongly agreed with the perceived benefits of the CA programme strongly asserted that the programme will not be phased out. Hence, considering all these findings mentioned above and in Chapter 4, this objective was met.

***To examine the internal strengths and weaknesses and external opportunities and threats of the Command Agriculture ISP from the officials' perspective***

This third empirical secondary objective was to examine the strengths, weaknesses, opportunities and threats of the Command Agriculture ISP. Qualitative data were collected from the CBZ and AGRITEX officials. Most of them strongly alluded that the key strength of the programme is that the government is behind its success and how the government has collaborated with the private sector. They suggested that the government should use this opportunity to invest in modern farming techniques in order to attract more farmers. However, they also highlighted those political influences,



the Zimbabwean economic downturn, theft and complaints from farmers like delayed payments and input distribution have slowed down the success of the Command Agriculture ISP as a source of funding.

These factors agreed with the responses obtained from the smallholder producers' perceptions on the benefits and drawbacks of the Command Agriculture ISP. Hence, this objective was met and addressed in Chapter 5 (qualitative data reporting and analysis).

***To assess the programme's officials' perception of whether the Command Agriculture input subsidy programme's intended outcome was achieved and obtain their view about the programme's future***

The fourth empirical objective was to assess the opinions of the CBZ and AGRITEX officials on whether the Command Agriculture ISP has achieved its intended objectives and whether it will continue to operate in the long run. This objective was addressed in Chapter 5 (qualitative data reporting and analysis). The interviewees believed that the programme has to a greater extent achieved its set objectives which were to provide access to low-cost inputs, offering flexible credit terms, reducing farmers' production costs, improving farm profitability, reducing imports, improving food security and enhancing the quality of life of the smallholder producers.

Most of the interviewees also believe that the Command Agriculture ISP will not be phased out as it is a government initiative and it has both financial and political backup. This analysis also agreed with what most smallholder producers believe about the future of the programme.

***To suggest improvements to the Command Agriculture input subsidy programme based on the quantitative and qualitative data collected***

The final objective was to give suggestions on the improvements that can be done to the Command Agriculture ISP. This objective is addressed in the following headings (recommendations and future research suggestions).

## **6.5 FINDINGS OF THE STUDY AND TRIANGULATION**

This section provides a summary of the research findings. As discussed in Section 3.7.3 of Chapter 4, triangulation will be used to compare the quantitative and qualitative research findings. This is depicted in Table 6.1. The table was designed in accordance with the sections in the questionnaire and interview guide.

**Table 6.1: Findings of the study and triangulation**

<b>Quantitative results</b>	<b>Qualitative results</b>	<b>Similarities with reference to the literature</b>
<p><u>Demographics</u> The influence of demographical factors such as experience, landownership, size of land, gender, education level and age on qualifying for the ISP were analysed. The results were as follows:</p> <ul style="list-style-type: none"> <li>• The majority of the producers have four years of experience with the ISP and others are joining because some have been part of the ISP for even a year.</li> <li>• 66% of the producers are landowners whilst the others are farm managers and the majority (52%) own A1 (6 hectares) farms. This means that small-scale farmers use the Command Agriculture ISP more than those with large hectareage.</li> <li>• 60% of the participants were males whilst the remainder were females.</li> <li>• As far as educational level is concerned, every level was represented from the primary school level to university level. Although, most of the producers obtained university level education. This shows that educational level is not really considered when applying to be part of the ISP.</li> <li>• Most of the participants (45%) were between 30-50 years of age, 39% were below 30 and only 10% above 50.</li> </ul>	<p><u>Familiarity with the ISP</u></p> <ul style="list-style-type: none"> <li>• The CBZ and AGRITEX officials showed an extensive familiarity with the ISP i.e., they were able to show their years of experience with the ISP, to list the objectives of the ISP and to give their perception on the relationship between the smallholder producers and the Government (the main stakeholder of the programme).</li> <li>• The objectives of the ISP considering its various departments were listed by the officials as follows: ensuring food security in Zimbabwe, reducing imports, enhancing exports and empowering smallholder farmers.</li> <li>• The officials believed that the relationship between the government and the smallholder producers is satisfactory but needs improvements.</li> </ul>	<ul style="list-style-type: none"> <li>• Both the producers and the officials have significant experience with the ISP. The differences are a result of their different roles responsibilities and needs as stakeholders of the Command Agriculture programme.</li> </ul>
<p><u>Benefits of the ISP</u> The producers were asked to rank the following benefits of the ISP and according to the factor analysis, the majority of</p>	<p><u>Strengths of the ISP</u> According to the officials, these are the strengths of the Command Agriculture ISP:</p>	<p>The strengths listed by the CBZ and AGRITEX officials backed up the rankings given by the smallholder farmers on the benefits of ISPs. For</p>

Quantitative results	Qualitative results	Similarities with reference to the literature
<p>the producers have experienced these benefits whilst using Command Agriculture ISP as a source of funding. This is because of the factor loadings of each factor were above 50% and ranging from 60%-79%:</p> <ul style="list-style-type: none"> <li>• Obtaining contracts</li> <li>• Access to farming inputs (seed, fertilizers, herbicides and fuel)</li> <li>• Low farming costs</li> <li>• Readily available buyers</li> <li>• Higher selling prices</li> <li>• Profitability</li> </ul>	<ul style="list-style-type: none"> <li>• Guaranteed financial and political backing because of the government's influence</li> <li>• Formed partnerships with agricultural inputs suppliers</li> <li>• Increased buying price of the farm produce</li> <li>• Easy access to cheap or subsidised inputs for the producers</li> <li>• Reduced production costs for the producers</li> </ul>	<p>example, the officials mentioned easy access to cheap inputs and reduced production costs for farmers as strengths whilst the producers agreed that these factors are also benefits to them:</p> <ul style="list-style-type: none"> <li>• This also agreed with the benefits provided by: Chirwa and Dorward (2013); EIU (2008); Fan <i>et al.</i> (2008); Jayne and Rashid (2013); Mazwi <i>et al.</i> (2019); Wirakusuma (2020).</li> </ul>
<p><u>Drawbacks of the ISP</u> The factor analysis showed that the majority of the smallholder producers experienced the drawbacks listed below except for the last drawback which had a factor loading below 50%:</p> <ul style="list-style-type: none"> <li>• Delayed input distribution</li> <li>• Inadequate inputs (seed, fertilizers, herbicides and fuel)</li> <li>• Government and political involvement</li> <li>• Penalties if contract terms are breached</li> <li>• The current country's economic downturn</li> <li>• One buyer (The government through the Grain Marketing Board (GMB))</li> <li>• Delayed payments from the GMB</li> </ul>	<p><u>Weaknesses of the ISP</u> The weaknesses of the ISP listed by the officials are as follows:</p> <ul style="list-style-type: none"> <li>• Delayed input distribution of inputs.</li> <li>• Selective distribution of inputs because of political influences and corruption.</li> <li>• Producers defaulting loans due to drought (climate changes) and theft.</li> </ul>	<p>The drawbacks experienced by the smallholder producers by using Command Agriculture as a source of funding such as delayed and selective input distribution were also given by the CBZ and AGRITEX officials as weaknesses of the ISP. This corroborated with weaknesses asserted by Filipski and Taylor (2012); Nindi (2020); Shively and Ricker-Gilbert (2013); Tiba (2011a).</p>
<p><u>Future of the ISP</u> The perceptions of the smallholder producers on the future of the Command Agriculture ISP are as follows:</p> <ul style="list-style-type: none"> <li>• Although, most (79.80%) of the producers would consider another source of funding such as</li> </ul>	<p><u>Future of the ISP</u> The perceptions of the CBZ and AGRITEX officials on the future of the Command Agriculture ISP were concluded as follows:</p> <ul style="list-style-type: none"> <li>• The ISP has achieved its objectives and smallholder producers are being</li> </ul>	<ul style="list-style-type: none"> <li>• Despite the drawbacks and shortcomings of the Command Agriculture ISP, both smallholder producers and CBZ and AGRITEX officials believe that the ISP has potential and will reduce hunger, improve food security, improve lives</li> </ul>

Quantitative results	Qualitative results	Similarities with reference to the literature
commercial banks and agricultural companies, they believed that the ISP would continue to operate in the foreseeable future.	empowered. Therefore, the ISP will continue to operate in the foreseeable future despite its shortcomings.	and continue to operate into the foreseeable future.

Source: Author's own compilation

The next section will provide recommendations made in accordance with the stakeholders of the Command Agriculture ISP.

## 6.6 RECOMMENDATIONS

The following recommendations were made to the primary stakeholders shown in Figure 1.1:

### *The government*

- The government should allocate more funds to the ISP as many producers believe that it will continue to operate into the foreseeable future;
- The government should control the political interferences so that they do not affect the efficient operation of the ISP;
- The logistics of the inputs should be improved to avoid delayed input distribution. This will also attract more producers;
- More campaigns should be held to attract and support the smallholder producers as one interviewee alluded that they own the majority of land in the country; and
- Tight audit systems should also be put in place to curb corruption and theft of inputs.

### *The Commercial Bank of Zimbabwe (CBZ)*

Measures to improve the processing of the producer's funds should be put in place so that the producers get their funds in time.

### *Smallholder producers*

Investments in modern farming mechanisms like irrigation facilities can help increase the producers' harvests and profits.

## 6.7 AREAS FOR FUTURE RESEARCH AVENUES

Some areas for future research include:

- Exploring the effects of climate change on the Command Agriculture ISP. This is because some of the producers are defaulting loans due to drought and climate changes.
- Investigating the audit and internal control systems suitable for ISPs to reduce and avoid corruption.
- The effectiveness of multi-stakeholder sources of agricultural finance. It is evident that most ISPs involve two or more stakeholders other than the farmers; therefore, the impact should also be explored.

## **6.8 LIMITATIONS TO THE STUDY**

The limitations of this study were as follows:

- The sample for data collection comprised of 100 smallholder farmers and only six interviewees, which is not representative of the whole population. Although this was within the planned samples in the research methodology chapter, it did not represent all the smallholder producers or Command Agriculture officials in Zimbabwe. However, the information gathered was enough to address the research objectives of this study.
- Most of the interviewees were hesitant to participate in the study because they deemed the topic under study politically sensitive. To address this limitation, the researcher, with the help of the supervisors, assured the confidentiality of the participants' identification details according to the POPI Act No. 4 of 2013.

## **6.9 CHAPTER SUMMARY**

The main aim of this chapter was to conclude the study and make recommendations. The chapter started with an introduction, a review of the chapters, explaining what was included in each of the chapters. The chapter then progressed to summarise the objectives and how each objective was met. Findings, recommendations, limitations to the study and future research avenues were also provided in this chapter.

The purpose of this study was to examine the use of the Command Agriculture ISP as a source of funding for smallholder farmers in Zimbabwe and the objectives were achieved.

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## APPENDIX I: QUESTIONNAIRE

Dear Participant

***Title: Command agriculture input subsidy program as a source of funding for smallholder producers in Zimbabwe.***

### Demographics

1. How long have you been using Command Agriculture as a source of funding?

1 year

2 years

3 years

4 years

5 years

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2. Can you please indicate whether you are a land owner or a manager.

Land owner

Manager

---

3. According to the Zimbabwean Government, can you please indicate the size of your farm/land.

Below 6 hectares

A1 ( 6 hectares)

A2 (Above 6 Hectares)

---

4. Can you please specify your gender.

Male

Female

5. Can you please specify your educational level.

Primary School level

Ordinary level

Advanced level

University level

6. Can you please indicate your age.

Less than 30 years

Between 30 and 50 years

Above 50 years

### Benefits and drawbacks of using Command Agriculture ISP

1. To what extent have you experienced the following benefits of using Command Agriculture as a source of funding?

Perceived benefits	Not at all	To a small extent	To a moderate extent	To a large extent	To a very large extent
Obtaining input contracts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access of farming inputs ( seed, fertilizer, herbicide and fuel)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low farming costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Readily available buyers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Profitability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. To what extent have you experienced the following drawbacks of using command agriculture as a source funding?

Perceived drawbacks	Not at all	To a small extent	To a moderate extent	To a large extent	To a very large extent
Delayed input distribution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inadequate inputs (seed, fertilizers,	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

herbicides and fuel)					
Government and political involvement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Penalties if contract terms are breached	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The current country's economic downturn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
One buyer (The Government through the Grain Marketing Board, GMB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Delayed payments from the Grain Marketing Board (GMB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Future and outcome of the Command Agriculture ISP

1. To what extent do you think the following factors will affect the future and outcome of the Command Agriculture input subsidy program (ISP)?

	Not at all	To a small extent	To a moderate extent	To a large extent	To a very large extent
The ISP will reduce the levels of hunger in the long run	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The ISP might be phased out because of the country's poor economic conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Would you consider looking for alternative sources of funding?

Yes

No

3. Which of the following schemes would you consider as source of agricultural funding?

	Not at all	To a small extent	To a moderate extent	To a large extent	To a very large extent
Commercial Banks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Microfinance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Agricultural companies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Development Finance Institution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## **APPENDIX II: INTERVIEW GUIDE**

### **General questions/Demographics**

1. How long have you been dealing the Command Agriculture ISP issues?
2. Can you please shed some light on the origins of the input subsidy program (ISP) and your relationship with it?
3. In your own opinion, what does your department aim to achieve as far as the Command Agriculture Program is concerned and have these aims been met?
4. In your own opinion, how do you perceive the relationship between the facilitators of the ISP and the smallholder producers?
5. How has the Command Agriculture scheme helped the smallholder producers of Zimbabwe, in terms of food security and reduction of production costs?

### **Internal strengths and weaknesses, and external opportunities and threats**

1. Which strengths do you perceive the Command Agriculture have?
2. Are there any weaknesses that are associated with the ISP? If so, can you please give one or two examples.
3. Which opportunities do think the facilitator of the program should pursue?
4. Are there any threats that may hinder the progress of the Command Agriculture input subsidy program?

### **Outcome and future of Command Agriculture**

1. What would you say has been the influence of the Command Agriculture program on both the country's food security and the smallholder producers' production costs?
2. What are some of the influences of targeting smallholder producers?
3. How has the ISP changed overtime (2016 to date)? What are the factors that have been fueling the change? Can those factors be linked to smallholder producers and why?
4. Have you experienced grievances about the program from the producers? If so, how have you been handling those?
5. What do you see as the future of the ISP? Will the government phase it out, given the history of other ISPs?



## APPENDIX III: LETTER OF CONSENT FOR THE QUESTIONNAIRE



NORTH-WEST UNIVERSITY  
YUNIBESITI YA BOKONE-BOPHIRIMA  
NOORDWES-UNIVERSITEIT

### Letter of consent to all research participants

#### Dear Participant

**R.E:** Invitation to participate in a master's degree research project

**Title of Research:** Exploring Command Agriculture input subsidy program as a source of funding for smallholder producers in Zimbabwe.

You are kindly invited to complete a structured questionnaire as a requirement for the fulfilment of the master's degree in Management Accountancy at North West University, South Africa. In this research, I am interested in your experiences, opinions, and perceptions about using Command Agriculture as a source of agricultural funding.

It will take you approximately 10 to 15 minutes to complete the questionnaire.

The following demographic questions in the questionnaire are asked (column 1) for the reasons indicated in column 2.

Question	Reason for asking
How long have you been using Command Agriculture as a source of funding?	To establish your experience with the program.
Can you please indicate whether you are a landowner or a manager?	Land ownership has been identified as a factor determining access to agricultural credit.
Can you please indicate the size of your farm/land?	Literature indicate that land size has a significant influence on access to agricultural credit.
Can you please specify your gender?	Literature indicates that gender influences the access to credit.
Can you please specify your educational level?	Literature suggests that educational background is considered when granting agricultural credit.
Can you please indicate your age?	To determine the level of experience in producing farm products.

After all the questionnaires have been answered, the data will then be analysed, discussed and presented in this study. The data will be kept in a password-protected folder and only the student and the supervisors will have access to it. Your participation in this research will assist in gathering recommendations and insights that may improve the Command Agriculture program.

In terms of risks, there are no known risks associated with this study but if any arises you are allowed to air out your concerns to the respective officials. In line with the requirements of the POPI Act (Act No. 4 of 2013, Protection of Personal Information Act) of South Africa, your personal information will not be disclosed. The responses from each individual will not be identified, but rather the results of the group as a whole will be used in this study.

You must understand that it will not be a disadvantage if you decide not to participate. Participation is completely voluntary, and you are allowed to withdraw anytime during the study without any penalisation. If you choose to participate, you are required to tick in the box below and understand that a copy of this ticked consent form will be given to you and the other one will be kept by the researcher.

To give consent please tick in the box below.

For any queries, please feel free to contact us.

Yours faithfully,

**Leonah Christine Muzangwa**

Primary researcher, North-West University, leonamuzangwa@gmail.com, Cell phone number: 083 576 1040

**Prof Sanlie Middelberg**

Research study supervisor, North-West University, Sanlie.Middelberg@nwu.ac.za

**Prof Merwe Oberholzer**

Research study co-supervisor, North-West University, Merwe.Oberholzer@nwu.ac.za

## APPENDIX IV: LETTER OF CONSENT TO THE INTERVIEWEES



### Letter of consent to interviewees

#### Dear Participant

**R.E:** Invitation to participate in a master's degree research project

**Title of Research:** Exploring Command Agriculture input subsidy program as a source of funding for smallholder producers in Zimbabwe.

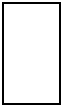
You are kindly invited to take part in a semi-structured interview as a requirement for the fulfilment of the Master's Degree in Management Accountancy at North West University, South Africa. In this research, I am interested in your experiences, opinions, and perceptions about Command Agriculture as a source of agricultural funding. Hence, relevant demographic questions to the study will be asked during the interview. The duration of the interview will be between 20 to 25 minutes.

After the interviews have been conducted, the collected data will then be analysed, discussed and presented in this study. The data will be kept in a password-protected folder and only the student and the supervisors will have access to it. Your participation in this research will assist in gathering recommendations and insights that may improve the Command Agriculture program.

In terms of risks, there are no known risks associated with this study but if any arises you are allowed to air out your concerns to the respective officials. In line with the requirements of the POPI Act (Act No. 4 of 2013, Protection of Personal Information Act) of South Africa, your personal information will not be disclosed throughout the study.

You must understand that it will not be a disadvantage if you decide not to participate. Participation is completely voluntary, and you are allowed to withdraw anytime during the study without any penalisation. If you choose to participate, you are required to tick in the box below and understand that a copy of this signed consent form will be given to you and the other one will be kept by the researcher.

To give consent please tick in the box below.



For any queries please feel free to contact us.

Yours faithfully,

**Leonah Christine Muzangwa**

Primary researcher, North-West University, leonamuzangwa@gmail.com, Cell phone number: 083 576 1040

**Prof Sanlie Middelberg**

Research study supervisor, North-West University, Sanlie.Middelberg@nwu.ac.za

**Prof Merwe Oberholzer**

Research study co-supervisor, North-West University, Merwe.Oberholzer@nwu.ac.za

## APPENDIX V: Ethics clearance form



NORTH-WEST UNIVERSITY  
YUNIBESITHI YA BOKONE-BOPHIRIMA  
NOORDWES-UNIVERSITEIT

Private Bag X8001, Potchefstroom  
South Africa 2520

Tel: 018 299-1111/2222  
Web: <http://www.nwu.ac.za>

Economic and Management Sciences Research  
Ethics Committee (EMS-REC)

11 August 2021

Prof S Middelberg and Prof M Oberholzer

*Per e-mail*

Dear Profs Middelberg and Oberholzer,

### **EMS-REC FEEDBACK: 25062021 (Round Robin)**

**Student: Muzangwa, LC (36846589)(NWU-00883-21-A4)**

**Applicant: Prof S Middelberg and Prof M Oberholzer – MCom in Management Accountancy**

Your ethics application on, *Command Agriculture input subsidy program as a source of funding for smallholder producers in Zimbabwe*, which served Round Robin, refers.

#### **Outcome:**

Approved as a minimal risk study. A number **NWU-00883-21-A4** is given for one year of ethics clearance.

Please note that the ethics approval of this application is subject to the Covid-19 protocols.

Kind regards,

**Prof Mark Rathbone**

**Chairperson: Economic and Management Sciences Research Ethics Committee (EMS-REC)**

## APPENDIX VI: LANGUAGE EDITING CONFIRMATION LETTER



Masters (Linguistics: Intercultural Communication); BA (Hons) Lang Prac; ACE; NPDE

English language editing

SATI membership number: 1002595

Tel: 083 654 4156

E-mail: lindascott1984@gmail.com

**28 February 2022**

To whom it may concern

This is to confirm that I, the undersigned, have language edited the **dissertation** of

**LC Muzangwa**

for the degree

**Master of Commerce in Management Accountancy**

entitled:

***Command agriculture input subsidy programme as a source of funding for smallholder producers in Zimbabwe***

The responsibility of implementing the recommended language changes rests with the author of the document.

Yours truly,

Linda Scott