THE DEVELOPMENT OF A COMPETENCY MODEL FOR COMMERCIAL GRAIN FARMERS

By

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DECLARATION

“I, Thapelo Jacob Moloi, declare that the thesis that I herewith submit for the qualification of Doctor of Philosophy at the University of the Free State is my independent work and that I have not previously submitted it for a qualification at another institution of higher education.”

…… June 2021

Thapelo Jacob Moloi

DEDICATION

To all the brethren across the globe, our Lord Jesus is alive; to Him be all the glory, forever and ever, AMEN! *O a phela Morena oa marena!*

To all the farmers out there: “As long as the world exists, there will be a time for planting and a time for harvest…” (Genesis 8 v 22, Good News Holy Bible). One African farmer once commented: “Farming is the first occupation or profession to be recorded in the Bible.”

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"Na ha u tsebe, na ha u a ka oa utloa hobane Jehova ke Molimo oa ka mehla eohle? Ha a khathale, ha a fokole, kelello ea hae ha e lekangoe. O fa ea khathetseng matla…" Esaia 40:28

We grew up at home with this biblical verse always recited by my father almost every time he ascended to the pulpit to deliver a sermon for the day. Ntate Joseph (*mo-filosofara ea hloahloa*) and Mê Lettie Moloi (*'melehisi ea sebete*), I am very grateful for the way you reared the ten of us by instilling in us that "the fear of the Lord is the foundation of wisdom…" (Job 28: 28). *Khele, a mangata mantsoe ana Makholokoe!* I just have to start recognising aus' Meli from the word go, our pillar through difficult times; we are so grateful to you *ngoan' a Morena, uena le 'mê,* you rock! May the Lord keep strengthening you in all life dimensions! Where would I be without the support of my in-laws – your countless efforts during challenging times are highly remarkable, Ntate Alfred Dhlamini, 'mê Anna Mphuthi, 'mê Jemina Rasekhobo and the broader family, many blessings to you!

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Let me pause momentarily here and talk of a rare occurrence among couples in marriage. I decided to quit my job as a lecturer and embarked on this doctoral project full time through partly being funded by the UFS's bursary. My beloved wife, MALERATO, took it upon herself when I had forfeited the study benefits that my two

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ABSTRACT

The National Planning Commission-Vision 2030 (2012) purported that agriculture can create close to 1 million new jobs by 2030, a significant contribution to the overall employment target. This is the primary economic activity in rural areas. Therefore, to achieve this, South Africa needs to pick and support commercial agriculture sectors and regions with the highest potential for growth and employment. McElwee (2008, p. 466) stated that “Farmers are a rich resource for study in the area of entrepreneurial capability”. Since crop farming is one of the vehicles in the agriculture sector, particularly using grain farming to achieve the abovementioned number of jobs, a study exploring the competencies that potential grain farmers should possess was necessary. This study aimed to develop a competency model for commercial grain farmers in South Africa using a classic grounded theory method. In future, this would be used as a starting point to construct instruments to enable stakeholders to identify, train, develop and mentor future prospective grain farmers to fulfil the role of creating several jobs.

Semi-structured interviews were used to gather data from 15 participants: 13 were involved in a mixed type of agriculture, one was involved in livestock farming, and one was a professional advisor. Triangulation was also used to validate competencies raised in the first phase of data gathering and confirmed in the second phase by three experts who never took part in the first phase of the study. The constant comparison method was used to analyse available data and helped generate a competency model for commercial grain farmers.

The model generated by the empirical data established the following five themes: 1) definition of commercial grain farming, which involves scale of operation, independence, own or rented land and turnover; 2) methods to acquire grain farming competencies such as educational institutions, on-the-job-training, early childhood exposure to farming, openness to guidance and refresher workshops; 3) the role of grain farming in agriculture includes food security, job creation, economic growth and wealth or income generation; 4) indicators of success in grain farming, which includes financial stability, having farming implements, being able to help others and having proper output per unit area; and several other competencies (skills, knowledge and personality attributes) expected from a commercial grain farmer. These competencies serve as practical application of the findings. They provide the basis for what trainers,

mentors, agriculture advisors and all other stakeholders would be looking for to equip those interested in grain farming. The competencies will further provide the basis for farmers to draft job descriptions and specifications for the workforce. Implications and recommendations for this study are also made, including a brief discussion of the limitations of the study.

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CHAPTER 1: INTRODUCTION

1.1 Importance of commercial grain farming

Given that the world is facing a critical food shortage, more food crops must be grown and cultivated to feed the global population. Consequently, the United Nations stated that by 2030, the world would need at least 50% more food (The Associated Press, 2008). This situation thus calls for more farmers to come to the fore.

Investigating farming as a career is not a new phenomenon. This can be traced as far back as the 1960s when many papers were published by the journal 'Rural Sociology.' Gasson (1969) wrote one of the papers about farming as an occupation, focusing on the propensity of farmers' sons to farm. Her survey included job aspirations of schoolboys and youth coming from a predominantly agriculture district in eastern England. Findings showed that farmers' sons compared with other boys were much more likely to aspire to become farmers, though they generally seemed aware of the economic prospects. Such findings further indicated that few boys from other backgrounds expressed a desire to farm and that those who chose to farm considered other jobs mainly from among the manual trades.

In their study on the beliefs and intentions of counsellors, parents and students regarding agriculture as a career choice, Thomson and Russell (1993) found that groups with more positive beliefs and intentions toward agriculture were persons with formal education beyond high school, and residents of large urban communities, while beliefs and intentions of ethnic minorities were virtually the same as those of whites. High school students who had taken coursework in agriculture expressed more favourable beliefs about agricultural careers and were more inclined to consider agriculture as an area of study than those without such exposure. It has been further found that guidance counsellors in large urban communities expressed more favourable beliefs about agriculture as a career for their students than other counsellors, parents and students from other rural and urban community types. Large urban communities appeared to be a major potential growth area for agricultural education, contrary to conventional wisdom.

Conroy (2000) studied the career aspirations among middle school-going youth in a rural New York State community to determine the level of interest in agricultural careers, as well as interest in other occupations that would be available in a broadly

defined agriculture industry. Results indicated that while few students expressed interest in traditional agriculture occupations, over one-half identified areas of interest representing a broadly defined agriculture, food, fibre and natural resources industry. A case study in Greece initiating a young farmers' programme to attract and retain the young people in the countryside to develop the regional economy found that even though the attitude to farming continued to decline, some pockets of positive attitude developed through that specific programme (Gidarakou et al., 2008).

Though there is limited literature aimed at the youth about agriculture, a few studies have identified factors that influence farming as a neglected career option. For example, Leavy and Smith (2010) reported that the Nigerian government ran a "back to the land" campaign but could not succeed, as students expressed no desire to farm and stated that they would rather be agricultural officers instead.

A study conducted in Tanzania found that young people consider farming a dirty activity due to lack of proper facilities, which caused them to regard agriculture as an employer of the last resort (Juma, 2007). In the Wolof region of Senegal, status is attached to the different types of farming (Perry, 2009). In this part of the world, farming grain is less profitable than farming groundnuts and is thus, generally scorned by young men; they may resign themselves to farming grain on own-account fields, rather than migrating out to fulfil family responsibilities (Leavy & Smith, 2010).

In March 2012, an international conference on the future of the agri-food sector in Africa was held in Accra, Ghana. The conference's focus was on understanding the perceptions and potential roles of the youth in the future of farming in Africa. The following three research questions were the focus of the conference (as found on the webpage www.future-agriculture.org):

1 How is demographic change affecting the availability of farmers in the future? Is de-agrarianisation inevitable?
2 What are changing perceptions, expectations and aspirations among youth about the future of agriculture in different contexts?
3 How can agriculture be made attractive as a livelihood option for future farmers in Africa?

South Africa is also affected by this critical food shortage, where about 11.5 million people are facing a food security crisis (DAFF, 2012). The picture looks very bleak in the context of South Africa: the government department of agriculture reported an increase in producer prices of agricultural products by 15,5% for 2010/11 to 2011/12

period. The gross income from field crops increased by 63,1% to R45 893 million for 2011/12. Income from maize (staple food for South Africa) was 121,8% higher than in the previous year (DAFF, 2013).

Consumption expenditure on food for the year ended 30 June 2012 increased by 12,4% and accumulated about R401 300 million compared to R356 970 million the previous year. During this period, expenditure on bread and grain products increased by 16,4% to R111 379 million after meat increased by 12,0%, totalling R130 519 million. Therefore, meat represented about 33%, while bread and grains represented 28% of the expenditure on the food component (DAFF, 2013).

Commercial farmers in South Africa account for about 95% of the country's locally produced food, where they plant crops on only 5% of the total agricultural land (SAIRR, 2012). Whites manage a major part of the land. Their success in toiling the land can be traced back centuries, subsequently helping to build their reputation in providing food in local and foreign markets. Therefore, in promoting this idea among the previously disadvantaged citizens, the post-apartheid government has embarked on a programme to provide them with land ownership through its Land Redistribution Programme (Terblanché, 2011). Through the National Planning Commission, the state recommends that there should be a more rapid transfer of land to black beneficiaries "without distorting land markets or business confidence in the agribusiness sector" (National Planning Commission-Vision 2030, 2012, p. 227).

Terblanché (2006) investigated the need for a new generation of farmers in South Africa. "According to the Strategic Plan for South African Agriculture, it recognises the importance of the youth, emphasises the education and training of the youth, to ensure a new generation of farmers and agriculturists" (Terblanché, 2006, p. 132). The negative image young people have about agriculture does not only apply to a South African situation but is held as a global challenge. Terblanché (2006) maintained that to develop a new generation of farmers and agriculturists, the Education Department should carry the responsibility, together with all roleplayers. They should form coordinating structures and linkages, participate in agricultural projects for learners, and develop new programmes for learners in all schools and at college level.

> An enthusiastic and empowered agricultural extension worker could play a pivotal role to motivate the youth to participate in agricultural programs and to change their image of agriculture. This is the starting point to develop a new generation of farmers and agriculturists for South Africa. (Terblanché, 2006, p. 155)

Since it is the primary economic activity in rural areas, agriculture can create approximately 1 million new jobs by 2030, a significant contribution to the overall employment target (National Planning Commission-Vision 2030, 2012). In order to achieve this, the National Planning Commission-Vision 2030 stated that South Africa needs to choose and support commercial agriculture sectors and regions with the highest potential for growth and employment. In an interview on SAfm's Morning Live Show hosted by Siki Mgabadeli (2012, September 13), Herbert Vilakazi, a retired professor of Sociology, stated that the development of any country begins in the countryside through agriculture and not in the city. McElwee (2008, p. 466) supports this and stated: "Farmers are a rich resource for study in the area of entrepreneurial capability."

> Despite the importance of maintaining the renewal of the farming population, research on the 'young farmers' programme is limited. Thus, a number of issues related to the topic warrant investigation in order to facilitate the improved implementation of the 'young farmers' programme and, in general, the design of policies relating to the reproduction of the farming family and, hence, of regional development. (Gidarakou et al., 2008, p. 356)

Therefore, there is a "need to deconstruct youth aspirations related to agriculture to understand the types and forms of agricultural activity which they associate with, both economic benefits and enhanced status and prestige" (Leavy & Smith, 2010, p. 9). According to Leavy and Smith (2010), limited literature speaks to youth aspirations regarding agriculture; this situation requires further discovery to change it around. Thus, having an adequate supply of competent commercial farmers could assist the nation in reducing the food crisis and the level of unemployment through job creation, subsequently increasing the size of entrepreneurship in agriculture.

This then calls for the need to investigate the competencies in grain farming. According to Grobler et al. (2011, p. 560), the term competency refers to the "behaviour, knowledge, skill or capability that describes the expected performance in a particular work context." Its key components are skill, knowledge, ability, behaviour (Van Aswegen, 2012) and traits (Robbins et al., 2003) of an incumbent in question.

The need arose to develop a competency model that would help identify future commercial farmers or a new generation of farmers who would generate an income by providing food through farming. Therefore, the current study sought to develop a competency model to identify successful grain farming, focusing specifically on

individual characteristic capabilities. The following section highlights the challenges in being a commercial grain farmer.

1.2 Challenges in being a commercial grain farmer

> Research on the development of entrepreneurial and organisational competency in farmers is scarce, especially in emerging economies such as the so-called BRIC countries—Brazil, Russia, India and China. Although its implications in public policy have been discussed thoroughly in these economies, several dimensions of farmer-as-entrepreneur—require more detailed research, including business strategies, the entrepreneurial capacities of farmers, women entrepreneurs in agriculture, the associative behaviour of farmers, and the required support for farmers and agricultural organisations. (Díaz-Pichardo et al., 2012, p. 91)

The above extract emphasises that farming is not a homogeneous sector. Farmers operate in a complex, multi-faceted environment that is tightly constrained and regulated (Díaz-Pichardo et al., 2012). Despite limited research addressing the challenges that successful commercial grain farmers face in their businesses, some work has been done particularly in wheat farming in South Africa. Wheat farmers face three major challenges classified as micro-, macro- and meso-environmental factors. First, micro-environmental factors inhibiting grain farmers' success include labour and inputs. The cost and availability of educated and trained labour, the price, and the quality of inputs used to produce wheat are of utmost importance. Second, macro-environmental factors that are likely barriers to grain farmers' success are government regulatory and legislative decision-making processes. Also included in these processes are tariffs and regulations that are put in place (Fourie, 2013).

Finally, meso-environmental factors focus on the support system that exists to promote these farmers. Research found that producers' negative perception regarding wheat cultivars and the current state of research and development in South Africa also contribute to the overall negative perception towards planting wheat (Fourie, 2013). Concerning land acquisition, particularly by the previously disadvantaged South Africans, the following challenges add to the situation:

> Despite some gains in terms of delivery, then, poor and rich compete for limited resources. Some of the central challenges encountered under the previous programme are yet to be addressed. These include problems of the availability of land for sale at reasonable prices in areas of high demand and parcels appropriate

to the needs of applicants; financial and practical obstacles to the poor accessing the programme; and limited post-transfer support in the form of extension services, training, infrastructure development and access to credit and markets. (Hall, 2004, p. 217)

In exploring the strategic skills of farmers across a typology of farm diversification approaches, McElwee and Bosworth (2010, p. 834) recommended that "future research will seek to determine what the skills are which farmers need according to both farmers themselves and those who have a stake in the farm enterprise." The next section describes utilising a competency model to predict commercial grain farming and outlines the problem statement, research questions and objectives.

1.3 Utilising a competency model to predict commercial grain farming

Few studies explored competencies in primary production, and according to Nuthall (2006), an expert should have the following abilities:

1 Identification of problems and opportunities
2 Good observational and information-seeking skills
3 Sorting relevant from irrelevant
4 Simplifying complex problems
5 Handle adversity
6 Visualise consequence of possible activities
7 Anticipate outcomes and act in good time
8 Have all technical knowledge and skills
9 Ability to understand and cope with risk and uncertainty

The latter is of particular importance in primary production, as the weather has a major impact, both locally and globally, on its impact on demand and supply. McElwee (2008) regards a farmer as an entrepreneur, and by borrowing from general entrepreneurship literature, developed a typology of farmers:

First, the 'farmer as farmer', who tends to engage in limited diversification and depends on push factors. His or her strategic orientation is based on cost-price reduction with little awareness of market opportunities and individualistic orientation. Second, the 'farmer as entrepreneur', who identifies and exploits non-farming or high-value agricultural opportunities based on the farm's resources in flexible and innovative ways. Developing entrepreneurial competency in the

agricultural sector means bringing the farmer from the ‘farmer as farmer’ position to the ‘farmer as entrepreneur’ level through an educational process. (Díaz-Pichardo et al., 2012, p. 91)

Entrepreneurial success has been measured through constant innovation in products and markets, proactive decision-making and aggressive competition with other companies, including risk-taking in business (Basso et al., 2009). These three dimensions have also been recognised as important entrepreneurial attitudes in the agricultural sector (Lauwere, 2004).

Entrepreneurial competencies can be studied from a process perspective (i.e., the task or behaviour leads to competencies). According to Man et al. (2002), the following six competency areas focus on behaviour:

1 Opportunity competencies focus on competencies related to recognising and developing market opportunities through various means
2 Relationship competencies focus on competencies related to person-to-person or individual-to-group-based interactions (e.g., building a context of cooperation and trust, using contacts and connections, persuasive ability, communication and interpersonal skills)
3 Conceptual competencies focus on competencies related to different conceptual abilities, which are reflected in the behaviours of the entrepreneur (e.g., decision skills, absorbing and understanding complex information, risk-taking and innovativeness)
4 Organising competencies focus on competencies related to the organisation of different internal and external human, physical, financial and technological resources, including team-building, leading employees, training and controlling
5 Strategic competencies focus on competencies related to setting, evaluating and implementing strategies of the firm
6 Commitment competencies focus on competencies that drive the entrepreneur to move ahead with the business. (p. 132)

As each person is unique, several characteristic patterns of thoughts, feelings and behaviour comprise an individual’s personality. The most used framework to study personality, namely the Big Five model, addresses dimensions such as neuroticism, extraversion, conscientiousness, openness to experience and agreeableness (Boz & Ergeneli, 2014).

Successful entrepreneurs are self-nurturing, self-motivated, energetic and can take risks (Moses, 2012). As identified by Vesper in Moses (2012), entrepreneurial characteristics or types include being pattern multipliers, economies of scale exploiters, acquirers, conglomerates, and speculators. Other leading personality themes that seem to predict entrepreneurial success are the commitment and determination of entrepreneurs, their leadership and the ability to build teams, drive for finding opportunities, tolerance for risk, creativity, self-reliance, and general enthusiasm to do exceptionally well (Alstete, 2008).

1.3.1 Problem statement and the research questions

Given the nation's need for competent commercial grain farmers, research has not yet determined what skills, knowledge and personal attributes they should have to succeed in such a business. Therefore, a model needs to be developed that would establish what competencies commercial grain farmers should have.

As the current government administration of South Africa continues with land redistribution (African National Congress, 2014), the challenge is who will be the future farmers to further advance the position of the Free State province, in particular, as they are the country's breadbasket (Olubode-Awosola et al., 2008). Another challenge in the South African context is that current beneficiaries of the land redistribution programme are ageing and their sons and daughters show no interest in carrying on where their parents left off.

There is high demand for young people to till the land as career farmers (Leavy & Smith, 2010). However, there is currently no competency model through which potential farmers could be mentored to become successful commercial farmers. Offbutt (cited by Sharma & Bhaduri, 2009) posed the following question: There is and always will be money made in farming, but we do not know by how many? This question calls for many aspiring young farmers to come to the fore and pursue this career.

Similar to a study conducted by Emerson (2013), the current study also employed a grounded theory approach based on three reasons: there is a lack of substantial empirical research on the subject, theory emerges from data, and it provides a solid foundation for action (Glaser, 2010; Simmons, 2006).

1.3.2 The key and central research questions

The central research questions for this study are as follows:

1 How is a commercial grain farmer defined?
2 What are the indicators of successful grain farming?
3 What is the importance of grain farmers in agriculture?
4 Which core competencies (skills, knowledge and personal attributes) should grain farmers have?
5 What are the best methods of acquiring grain farming competencies?
6 What would be included in a competency model for grain farmers in South Africa?

1.3.3 Primary objective

This study's primary objective is to develop a competency model for commercial grain farmers.

1.3.4 Secondary objectives

The following secondary objectives form part of the current study:

1. To understand the definition of a commercial grain farmer.
2. To establish the indicators of successful grain farming.
3. To explore the importance of grain farming in agriculture.
4. To describe the core competencies (skills, knowledge and personal attributes) of a grain farmer.
5. To formulate the best methods of acquiring grain farming competencies.
6. To conceptualise the competencies of a grain farmer in agriculture for the development of a competency model.

1.4 The aim of the study

The study aims to develop a competency model for commercial grain farmers in South Africa to identify, train and mentor future prospective grain farmers.

1.5 The value and anticipated contribution of the study

The current study anticipated both practical and theoretical contributions. The anticipated practical contribution of this study is to help industry practitioners (agriculturists and farmers), especially in grain, identify the key attributes and competencies that could predict success by prospective individuals with a keen interest in the grain farming business. A key contribution expected from this research

is developing a competency model that could guide policy makers and industry practitioners on what competencies to look for in aspiring and emerging grain farmers to graduate into being commercial grain farmers.

1.5.1 Theoretical value

The theoretical value of this study is aimed at developing a competency model for commercial grain farmers. Furthermore, the concept of grain farming competency is illuminated, and knowledge is extended through developing a competency model. This knowledge extension directly results from integrating the literature review and data insights from the research participants.

1.5.2 Methodological value

The current status of qualitative research and classic or Glaserian grounded theory has expanded our knowledge in grain farming competency, human resource management, entrepreneurship, and general management studies in South Africa. Applying these methodologies indicates their value and utility and how they can be applied in various disciplines.

1.5.3 Practical value

The practical contribution of this study is to simplify what trainers, mentors, agriculture advisors and all other stakeholders should be looking for to equip those interested in grain farming. These competencies serve to practically apply the findings as they provide the basis for what trainers, mentors, agriculture advisors and all other stakeholders would be looking for to equip those interested in grain farming. The competencies will further provide the basis for farmers to draft job descriptions and specifications for the workforce.

Therefore, this topic is relevant, current and topical, and thus, insights shared could improve the identification, training, coaching, and mentoring of potential farmers in the agricultural sector. The topic further contributes to the ongoing debate of food security, entrepreneurial development, and rural and economic development.

1.6 The brief research approach to the study

The research approach adopted in this study is a grounded theory method, emphasising that theory emerges from the data, with its focus being on theory development rather than testing an existing one. More specifically, interviews were

conducted with grain farmers, farmworkers and grain experts who shared their thoughts about the key competencies required to succeed in this type of business. A competency model emerged from the data they provided; the initial model was compared with the literature.

1.7 Conclusion and the structure of the thesis

Nuthall (2006) explored the competencies in primary production, with other studies building on it. McElwee (2008) also provided the basis for regarding a farmer as an entrepreneur by borrowing from general entrepreneurship literature and further developed the typology of farmers to understand how they operate. In order to generate a theory or a model from the data gathered, I structured the current project as follows:

1. Chapter 1 introduced the study covering the importance of successful grain farming, challenges in being a successful farmer, utilising a competency model to predict successful farming, the aim of the study, value and the anticipated contribution.

2. Chapter 2 addresses the research methodology.
3. Chapter 3 presents data analysis methods.
4. Chapter 4 presents practical data analysis in the field.
5. Chapter 5 reviews literature on the competency model of successful grain farming.
6. Chapter 6 presents a competency model of successful grain farmers.
7. Chapter 7 presents a synopsis, contributions and recommendations.

CHAPTER 2: RESEARCH METHODOLOGY

2.1 Introduction

This chapter focuses on how the research was undertaken in this study, starting with an appropriate research approach, paradigm, and the basic aspects of inquiry. A discussion about the qualitative research method and research design adopted in the current study, the research participants used, and the study setting are also provided. Furthermore, a presentation of the data gathering method, data recording and storage, and the role of literature in a grounded theory study are included. The chapter concludes with a brief discussion about how to record qualitative data, ensuring research quality.

2.2 Research paradigm

A “knowledge claim means that researchers start a project with certain assumptions about how they will learn and what they will learn during their inquiry. These claims might be called paradigms; philosophical assumptions, epistemologies, and ontologies; or broadly conceived research methodologies” (Creswell, 2003, p. 6). Creswell (2014; 2003) classifies these claims as originating from four schools of thought: advocacy/participatory, pragmatism, post-positivism and constructivism. An overview of each of these schools of thought is presented below, including discussing how constructivism was applied in the current study.

2.2.1 Advocacy/participatory action

Advocacy/participatory action claims of constructivist researchers did not go far enough in advocating for an action agenda to help marginalised people and thus, they believe that research needs to be intertwined with politics and a political agenda. Theoretical perspectives held within this claim include feminist perspectives, racialised discourses, critical theory, queer theory and disability inquiry (Creswell, 2003). Its key features can be summarised as follows:

1. It is recursive or dialectical and focuses on bringing about change in practices.
2. It helps individuals free themselves from constraints found in the media, language, work procedures, and power relationships in educational settings.
3. It is emancipatory; it further helps unshackle people from the constraints of irrational and unjust structures that limit self-development and determination.

4. Advocacy/participatory authors engage the participants as active collaborators in their inquiries (Creswell, 2003).

2.2.2 Pragmatism

Pragmatic claims arise out of actions, situations and consequences, rather than antecedent conditions, where there is a concern about what works and solutions to problems (Creswell, 2014). Pragmatism assumes the following knowledge claims:

1. Pragmatism is not committed to any one system of philosophy and reality. This applies to mixed methods research, as inquirers draw liberally from quantitative and qualitative assumptions when they engage in their research.
2. Individual researchers have freedom of choice. They are “free” to choose the methods, techniques, and research procedures that best meet their needs and purposes.
3. Pragmatists do not see the world as an absolute unity. Similarly, mixed methods researchers look to many approaches to collecting and analysing data, rather than subscribing to only one way (e.g., quantitative or qualitative).
4. Truth is what works at the time; it is not based on a strict dualism between the mind and a reality completely independent of the mind. Thus, in mixed methods research, investigators use quantitative and qualitative data to provide the best understanding of a research problem.
5. Pragmatist researchers look to the “what” and “how” to research based on the intended consequences (i.e., where they want to go with it). Mixed methods researchers need to establish a purpose for their “mixing,” a rationale for why quantitative and qualitative data need to be mixed in the first place.
6. Pragmatists agree that research always occurs in social, historical, political, and other contexts. In this way, mixed methods studies may include a postmodern turn, a theoretical lens reflexive of social justice and political aims. (Creswell, 2014, p. 11).

2.2.3 Post-positivism

Post-positivism assumes that “data, evidence and rational considerations shape knowledge” (Creswell, 2014, p. 7). Seale (1999) maintains that post-positivism is a

useful paradigm for researchers interested in some aspects of positivism, such as quantification, despite wanting to incorporate interpretivist concerns around subjectivity and meaning, and who are interested in the pragmatic combination of quantitative and qualitative methods. This paradigm further assumes that reality is multiple, subjective and mentally constructed by individuals (Nieuwenhuis, 2011c). In addition, Guest et al. (2013) contend that post-positivists accept that a completely objective reality is impossible to pick up. However, the assumption is that the research accounts can approximate or at least try to approximate an objective truth.

> For the post-positivist researcher, reality is not a fixed entity and it is to a certain degree accepted that reality is a creation of the individuals involved in the research. Post-positivists caution, however, that the constructed reality does not exist in a vacuum but is influenced by context (culture, gender, etc.). For this reason, post-positivists claim that objective reality, as proposed by positivist philosophy, can only be seen as one aspect or dimension of reality. (Nieuwenhuis, 2011c, p. 65)

Limitations of post-positivism, as raised by positivists concerning the use of methods (qualitative) that are merely an assembly of anecdotes and personal impressions, are highly suspect in terms of research subjectivity and researcher bias. On the other hand, those favouring a functionalist research approach argue that positivism and post-positivism could be used complementarily to strengthen the data gathering and analysis process (Nieuwenhuis, 2011c).

2.2.4 Constructivism

Constructivism claims knowledge through alternative processes and assumptions. Here, individuals seek to understand their world by developing subjective meanings of their experiences. Thus, the researcher intends to make sense of the meaning others have about the world (Creswell, 2014). Assumptions held within constructivism include:

1. Human beings construct meanings as they engage with the world they are interpreting. Qualitative researchers tend to use open-ended questions so that participants can express their views.
2. Humans engage with their world and make sense of it based on their historical and social perspectives (i.e., we are all born into a world of

meaning bestowed upon us by our culture). Thus, qualitative researchers seek to understand the context or setting of the participants through visiting this context and gathering information personally. They also interpret what they find, an interpretation shaped by the researchers' own experiences and backgrounds.

3. The basic generation of meaning is always social, arising in and out of interaction with a human community. The process of qualitative research is largely inductive, with the inquirer generating meaning from the data collected in the field. (Creswell, 2003, p. 9)

Knowledge, according to constructivists, is not mechanically acquired but actively constructed within the constraints and offerings of the learning environment (Liu & Matthews, 2005). Russel (1998) distinguishes between two levels of truth, namely intentional and extensional truth, while Kuhn differentiates knowledge of the a priori and a posteriori natures. This paradigm is comparable to intentional truth and a priori knowledge which cannot be objectively or empirically affirmed, only individually represented and internally experienced (Liu & Matthews, 2005).

Critics of this paradigm argue that it locates numerous thinkers within the school of thinking by the standard of "human the inventor" against "nature the creator". Furthermore, they criticise it for placing subjectivity in a superior position to objectivity; concrete laws of problem-solving within a general paradigmatic framework must be based on empirical evidence (Liu & Matthews, 2005).

The current study employed constructivism: a belief that humans actively acquire knowledge as individuals, and the important role of subjectivity in knowledge creation does not supersede objectivity. Thus, the development of a competency model calls for the views of farmers, farmworkers and professional advisors as individuals who are actively involved in knowledge creation within the agricultural sector.

2.3 Research approach

Creswell (2003) identifies three research approaches: quantitative, qualitative and mixed methods approaches. An investigator in a quantitative approach uses strategies of inquiry such as experiments and surveys. They collect data on predetermined instruments that yield statistical data. On the other hand, a qualitative approach uses

investigation strategies such as narratives, phenomenologies, ethnographies, grounded theory studies, or case studies. The researcher collects data using open-ended questions; the data is used with the primary intent of developing themes. The mixed-methods approach bases knowledge claims on pragmatic grounds and employs strategies involving gathering data simultaneously or sequentially to understand research problems best. Data collection also involves gathering numeric information on instruments and text information emanating from interviews; subsequently, the final database represents quantitative and qualitative information.

The current research adopted a qualitative approach because it takes place in a natural setting, as Creswell (2014; 2003) argued. Furthermore, the purpose is that this research gathers participants' information related to their lived experiences, thus conducted in a qualitative approach.

2.4 Basic aspects of enquiry

Knowledge about the world occurs in various forms. Social science research uses primarily two models of acquiring knowledge, namely deduction and induction. Deduction or deductive reasoning is "concerned with the formulation of hypotheses and theories from which particular phenomena can be explained" (Eriksson & Kovalainen, 2016, p. 23). The purpose of reasoning deductively is to test or confirm a theory (Myers, 2013, p. 23). "This theory might be operationalised into one or more hypotheses, which are then tested by collecting empirical data".

Induction or inductive reasoning assumes that "the research process develops, starting from empirical materials, not from theoretical propositions" (Eriksson & Kovalainen, 2016, p. 24). Reasoning in this approach "is more open-minded and exploratory, where the main purpose is theory-building" (Myers, 2013, p. 23). The researcher uses a bottom-up approach as s/he begins by collecting data, analysing and ultimately, some pattern will emerge, leading to one or more tentative hypotheses (Myers, 2013).

Since the two ideal types of logic seldom exist, abduction, which combines elements of both deduction and induction, has been introduced. "Abduction refers to the process of moving from the everyday descriptions and meanings given by people, to categories and concepts that create the basis of an understanding or an explanation of the phenomenon described" (Eriksson & Kovalainen, 2016, p. 24).

The purpose of the current research was to build a theory. Therefore, induction as a form of reasoning was used. The section below provides an in-depth discussion about the qualitative research method.

2.5 Qualitative research

Qualitative research involves acquiring knowledge using smaller samples whose findings yield a better understanding of the phenomenon under investigation (Bless et al., 2013). The qualitative research method is characterised by research taking place in the natural world; it is emergent rather than tightly prefigured (Rossman & Rallies, 2012). The following section addresses the characteristics of qualitative research, attempting to elaborate on the differences identified between qualitative and quantitative studies.

2.5.1 Characteristics of qualitative research

According to Neuman (2011; 1997), social context is key in determining the characteristics of qualitative research because the meaning of a statement depends on the context in which it appears. Qualitative researchers note that the same event or behaviour can have different meanings in different cultures or historical eras. They place parts of social life into a larger whole. Gray (2009) adds that qualitative research is conducted through intense contact within a real-life setting. For this study, I visited farmers, farm managers and farm workers at convenient places where they felt comfortable sharing their information.

Secondly, qualitative researchers consider the value of the case study. Unlike quantitative researchers who gather specific information on a great many cases, these researchers gather a large amount of information on one or a few cases, examining each case deeper and in more details. In analysing the collected data, qualitative researchers look for patterns in the lives, actions and words of people in the context of the complete case as a whole; quantitative researchers look for patterns in the variables on many cases (Neuman, 2011; 1997). I conducted about fifteen interviews in the current study with farmers, farm managers, farmworkers and a professional advisor and followed a qualitative approach.

Thirdly, researcher integrity is vital for qualitative researchers as the level of trust s/he earns from prospective participants could impact the findings. They ensure that their research accurately reflects the evidence, thus checking such evidence to

ensure consistency and accuracy. This can be achieved by checking that all the detailed written notes are recorded. Researcher integrity is further strengthened by eliminating bias. Qualitative researchers recognise that the human factor can contaminate evidence, thus they become aware of their values and assumptions and do not hide behind objective techniques. They are upfront and make their values explicit in their reports (Neuman, 2011; 1997). Gray (2009) agrees by stating that the researcher's role is to gain a holistic or integrated overview of the study, including the perceptions of participants. In this study, recording the participants' information verbatim was a way of avoiding any contamination.

Fourthly, qualitative researchers use grounded theory. Rather than gathering data after theorising and developing hypotheses, qualitative researchers' theories develop during the data gathering phase, which is the focus of grounded theory. They build theories by making comparisons (Neuman, 2011; 1997). Thus, grounded theory involves generating analytical categories together with their dimensions and identifying relationships between them (Spencer et al., 2003). The model developed in this study emerged from the data gathered from the research participants.

Fifthly, the issue of process and sequence can be summarised as follows:

> Qualitative researchers look at the sequence of events and pay attention to what happens first, second, third, and so on. Because qualitative researchers examine the same case or set of cases over time, they can see an issue evolve, a conflict emerge, or a social relationship develop. The researcher can detect process and causal relations. (Neuman, 1997, p. 335)

To further justify process and sequence, Gray (2009) contends that the main focus of research is to understand how people act and account for their actions. Sixthly, the themes that emerge from the data are often reviewed with the participants for verification. Therefore, verification of data gathered in this study was initially presented by participants and then verified by experts in the second phase of this research.

Lastly, interpretation for qualitative research is different from that used in quantitative research, where reports contain numbers, tables and charts. Qualitative reports rarely include tables with numbers, as most data are in the form of words that

may include quotes or descriptions of particular events. Qualitative researchers interpret data by giving them meaning, translating them or making them understandable. This is done by following three steps. The first is called first-order interpretation, where the people being studied create their personal reasons for their actions. Second-order interpretation involves the researcher discovering what people/participants shared with him/her because s/he comes from the outside to discover what occurred. The third-order interpretation is where the researcher links the second-order interpretation to general theory (Neuman, 2011; 1997). According to Creswell (2003), the following comprise the characteristics of qualitative research:

1. It takes place in a natural setting
2. It uses multiple methods that are interactive and humanistic
3. It is emergent rather than tightly prefigured
4. It is fundamentally interpretive
5. It views social phenomena holistically
6. It systematically reflects on who s/he is in inquiry and is sensitive to the personal biography and how it shapes the study
7. It uses complex reasoning that is multifaceted, iterative and simultaneous
8. It adopts and uses one or more inquiry strategies as a guide for the procedures in the qualitative study.

In the current study, several coding formats were followed, namely open coding, selective coding and theoretical coding to develop a competency model for grain farmers. According to Braun and Clarke (2013), an overview hereof is possible, since qualitative research concerns the following: it is about meaning and not numbers, does not provide a single answer, treats context as important, can be experiential or critical, is underpinned by ontological and epistemological assumptions, involves a qualitative methodology, uses all sorts of data, involves thinking qualitatively, and values subjectivity and reflexivity.

2.6 Research design

Research design is a strategy that moves from the underlying philosophical assumptions to specifying the selection of research participants, data gathering and

analysis techniques (Nieuwenhuis, 2011a). In the following section, a discussion about grounded theory, the design for the current research, is provided.

2.6.1 Grounded theory design

Grounded theory design is a design employed in the current study. It is defined as a theory inductively derived from studying the phenomenon it represents (Nieuwenhuis, 2011a). The key proponents of this type of grounded theory are Barney Glaser and Anselm Strauss, with their book, *The Discovery of Grounded Theory* in 1967. It is a systematic, qualitative procedure used to generate a theory that explains a process, an action, or interaction about a substantive topic at a broad conceptual level. Grounded theory stresses discovery of theory development rather than logical deductive reasoning, which relies on prior theoretical frameworks. It may be used to generate a substantive theory or formal theory. Accordingly, the use of literature is postponed until the process of analysing data is completed. This is done as much as possible to allow theory to emerge from data (Charmaz, 2000).

According to Corbin and Holt (2011, p. 114), “grounded theory is a theory grounded in qualitative data. It provides one possible explanation for how and why persons, groups, organizations, communities, or nations experience and act/interact emotionally to events/happenings/situations/problems they encounter in life.” It is an inductive, iterative, interactive and comparative method geared toward the construction of a theory (Thornberg & Charmaz, 2012). It “is a qualitative research method that uses a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon” (Strauss & Corbin, 1990, p. 24). Since Glaser’s version of grounded theory, viz. classic grounded theory is adopted in this study, grounded theory is “a general methodology of analysis linked with data collection that uses a systematically applied set of methods to generate an inductive theory about a substantive area” (Glaser, 1992, p. 16). Qualitative researchers widely accept this definition, but the approach and rigour in the data collection, handling and analysis created differences between the founders of this method (Evans, 2013). Key features of the grounded theory method, according to Urquhart (2013), entail the following:

1. Grounded theory aims to generate or discover a theory.
2. The researcher has to set aside theoretical ideas to let the substantive theory emerge.

3. Theory focuses on how individuals interact with the phenomena under study.
4. Theory asserts a plausible relationship between concepts and sets of concepts.
5. Theory is derived from data acquired from fieldwork, interviews, observation and documents.
6. Data analysis is systematic and begins as soon as data is available.
7. Data analysis proceeds by identifying categories and connecting them.
8. Further data collection (or sampling) is based on emerging concepts.
9. These concepts are developed through constant comparison with additional data.
10. Data collection can stop when no new conceptualisations emerge.
11. Data analysis proceeds from open coding (identifying categories, properties and dimensions) through selective coding (clustering around categories) to theoretical coding.
12. The resulting theory can be reported in a narrative framework or set of propositions. (pp. 4-5)

The section below presents the characteristics of a grounded theory method.

2.6.1.1 Characteristics of grounded theory

Not all qualitative studies qualify to utilise grounded theory. According to Birks and Mills (2015), there are instances when it is appropriate for a research project to be conducted within the properties of grounded theory research, namely:

1. Little is known about the area of study.
2. The generation of theory with explanatory power is the desired outcome.
3. An inherent process is embedded in the research situation that is likely to be explicated by grounded theory methods. (p. 17)

De Bie and De Poot (2016, p. 582) contend that a grounded theory methodology "aims to generate a theory that is built on theoretical concepts or categories that emerge from the data and is particularly suitable for explorative research." According to Urquhart (2013), there are four characteristics of grounded theory method (GTM), which can be classified as follows:

1. the main purpose of GTM is theory building
2. as a general rule, researchers should make sure that they have no preconceived theoretical ideas before starting their research
3. analysis and conceptualisation are engendered through the core process of constant comparison, where all aspects of the data are compared with all existing concepts and constructs to see if it enriches an existing category (by adding to/enhancing its properties), forms a new one or points to a new relation
4. 'slices of data' of all kinds are selected through theoretical sampling, where researchers decide, on analytical grounds, where to sample from next. (p. 16)

As far as the first characteristic is concerned, a distinction between substantive theories and formal theories is made.

> In developing either type of theory, researchers need to be capable of theoretical sensitivity. Such sensitivity is based on being steeped in the field of investigation and associated general ideas (Glaser, 1978) so that researchers understand the context in which the theory is developed. This concept of theoretical sensitivity is key. How can we build theories ourselves unless we understand what theory is? (Urquhart, 2013, p. 16).

Regarding the second characteristic of having no preconceived theoretical ideas, Glaser (1992) cautions that this only applies initially. "Once the theory has been sufficiently developed, researchers then need to review the literature in the substantive field and relate that literature to their own work" (Urquhart, 2013, p. 17). Thus, researchers using the qualitative method in grounded theory "try not to impose a rigid, a priori framework on the social world, because they want to learn what constitutes important questions from the participants themselves" (Rossman & Rallies, 2012, p. 9). Constant comparison, which is the third characteristic and a key component of grounded theory, is a process of constantly comparing instances of data labelled in one category with other instances of data labelled for that category (Urquhart, 2013). Urquhart however, warns regarding constant comparison:

> It is an incredibly simple but deceptively powerful rule of thumb for analysing data. The process of constant comparison, in my view, allows the meaning and

> construction of concepts to remain under review. Consciously comparing the instances of each concept allows for a fuller and more nuanced understanding of what that category might consist of. It also, I think, allows the formation of the category to be more provisional. It is only when it is fully filled in, as it were, by many instances that we can say exactly what the meaning of that category is. It is helpful to use constant comparison if there is overlapping data collection and analysis because then the category can be densified using theoretical sampling (where the emerging analysis directs more sampling of data), so, if you like, the emerging theoretical storyline is followed. (pp. 17-18)

The last characteristic, which is the selection of slices of data, can be summarised as follows:

> This phrase was coined by Glaser and Strauss (1967) to reflect the fact that different kinds of data give researchers different views from which to understand a category or develop its properties. This is a liberating and interesting idea that is not always understood but simply means we should be constantly sampling slices of data from the phenomena in order to build the theory out and upwards. The more diverse those slices are, the better. So, one slice of data could be field interviews, another could be surveys… When the theory is more fully formed, a conceivable slice of data might even be another theory, as long as there is an awareness of the danger of forcing a category down a particular road, lest that very precious quality of grounded theory – emergence – be compromised. (Urquhart, 2013, p. 18)

Having explored the characteristics of grounded theory research, it is noteworthy to further establish which factors could influence its quality.

2.6.1.2 Determinants of quality in grounded theory research

Several factors influence the quality of grounded theory research, namely researcher expertise, methodological congruence and procedural precision. Each of these factors is discussed below.

2.6.1.2.1 Researcher expertise

Acquiring skills in scholarly writing, accessing resources, and managing a research project are examples of abilities that a researcher should be equipped with to have

confidence in research. In grounded theory, the philosophical position of the author determines how s/he would approach the study. Aligning oneself with a particular approach requires one to be sure that one reads widely with a purpose. It is noteworthy for novice researchers in grounded theory to seize opportunities of participating in workshops that specialise in it (Birks & Mills, 2015). Some other conditions that foster quality in research related to personal and professional characteristics include self-awareness, clarity of purpose, commitment to hard work and internal motivation to do research (Corbin & Strauss, 2008).

2.6.1.2.2 Methodological congruence

Methodological congruence occurs when there is an agreement between one's personal philosophical position, stated aims of the research and the methodological approach employed to achieve the stated aims. Therefore, to establish congruence, the researcher should invest time prior to commencing with the studies (Birks & Mills, 2015).

2.6.1.2.3 Procedural precision

In order to attain procedural precision, the researcher should strive to maintain an audit trail, manage data and resources, and demonstrate procedural logic. Regarding maintaining an audit trail, it is advisable to keep a record of research activities, changes in research direction and a rationale for choices made to protect the researcher from loss of confidence and prevent him/her from second-guessing decisions made. On managing data, it is advisable to establish mechanisms to record, store, retrieve, analyse and review data and other resources that s/he would generate and collect while undertaking the research. Concerning the procedural logic, the advice is to use the correct application of essential grounded theory methods, thereby preventing credibility gaps in the research. When analytical breakthroughs occur and a pen/keyboard is inaccessible, the researcher should return to original data to ensure that conceptual leaps are supported by analysis (Birks & Mills, 2015), which I did throughout this study.

2.6.1.3 Criticisms of grounded theory

According to Mjøset (2005), three main criticisms against grounded theory include the following:

1. It allows successive adjustments of the hypotheses formulated at the start of the process of empirical research
2. It does not rely on indicators; instead, investigators engage in excessive conceptualisation as they defend this as sensitivity to context
3. It is further condemned for being a substantive and not a formal theory developed for a broad conceptual area in general theory.

Being aware of all these criticisms against using the grounded theory method and knowing several versions of it exist, it depends on the researcher's viewpoint as to which one to adopt. The different versions of grounded theory are discussed below.

2.6.1.4 Versions of grounded theory

Researchers can adopt any of the following grounded theory versions, depending on their viewpoint: a modernised version referred to as constructivist grounded theory, objectivist grounded theory, Straussian grounded theory or a Glaserian or classic grounded theory (CGT).

2.6.1.4.1 Feminist grounded theory

According to Evans (2013), Wuest developed the feminist grounded theory for use in the nursing profession, traditionally held by women. "Grounded theory is consistent with the postmodern feminist epistemology in the recognition of multiple explanations of reality" (Wuest, 1995, p. 127). This theory is widely accepted as a method of research ideally suited to the nursing profession, and grounded theory is enriched by taking such a feminist perspective when the research is based on women in particular (Evans, 2013).

2.6.1.4.2 Constructivist grounded theory

Kathy Charmaz is considered the proponent of this modernised type of grounded theory, which incorporates flexibility. This approach to grounded theory is less prescriptive and procedural than earlier versions of grounded theory (Charmaz, 2000). In this version, the researcher begins with specific questions on a particular substantive area; in contrast, the classic grounded theory starts with a desire to know more about a substantive area but has no preconceived questions prior to the study (Hernandez & Andrews, 2012). The data analysis process entails the following:

1. Coding the data: the naming of data segments with a label that simultaneously categorises, summarises and accounts for each piece of data.

2. Development of theoretical codes: involves identifying and using appropriate theoretical codes to achieve an integrated theoretical framework for the overall grounded theory.
3. Memo writing: this process entails analysing ideas about the codes, making comparisons, elaborating on processes, and identifying assumptions and actions subsumed under the codes.
4. Theoretical sampling: this process is about seeking and collecting pertinent data to elaborate and refine categories in the emerging theory until a point of theoretical saturation is reached.
5. Theoretical sensitivity: process entails looking for data from multiple vantage points, making comparisons, following leads and building on ideas (Charmaz, 2000).

2.6.1.4.3 Objectivist grounded theory

This approach resides in the positivist tradition and attends to data as real in and of themselves; it does not attend to their production processes. It assumes that data represent the objective facts about a knowable world. It further assumes that data already exists in the world, awaiting the researcher to discover them. Objectivist grounded theorists remain separate and distant from research participants and their realities, although they may adopt observational methods. They claim value-free neutrality and thus, treat how they portray research participants in their written reports as unproblematic (Charmaz, 2006).

2.6.1.4.4 Straussian grounded theory

Strauss and Corbin deviated from the original approach they had started with Glaser. “The main changes they incorporated were to the coding structure, adding more procedures on how to code and structure the data. This method is often referred to as Straussian grounded theory. They used a three-stage coding methodology of open coding, axial coding, and selective coding” (Evans, 2013, p. 43). Corbin and Strauss (1990) introduced eleven basic procedures to follow in the development of their method, namely:

1. Data collection and analysis are interrelated processes.
2. Concepts are the basic units of analysis.
3. Categories must be developed and related.
4. Sampling in grounded theory proceeds on theoretical grounds.
5. Analysis makes use of constant comparisons.
6. Patterns and variations must be accounted for.
7. Process must be built into theory.
8. Writing theoretical memos is an integral part of doing grounded theory.
9. Hypotheses about relationships among categories are developed and verified as much as possible during the research process.
10. A grounded theorist should not work alone.
11. Broader structural conditions must be brought into the analysis, however microscopic in focus. (Corbin & Strauss, 1990, pp. 419-422)

Evans (2013) summarises the differences between Straussian and classic grounded theory:

> These procedures allow the researcher to understand more clearly the differences between Straussian and CGT beyond just the coding methods. At the highest level, they would appear very similar; however, taking a more detailed review of each heading, the major differences are in points four, nine and 11. CGT would argue point 4, *Sampling in grounded theory proceeds on theoretical grounds*, creates a preconceived bias. While both support sampling based on theoretical grounds, Corbin and Strauss (1990) support the concept that the researcher brings the idea of the phenomenon to be studied; alternatively, the CGT would insist that it should come from the data and not be initiated by the researcher. (Evans, 2013, p. 43)

2.6.1.4.5 Classic grounded theory

Glaser and Strauss were the founders of grounded theory. However, their views differed and as more studies were conducted, it either adopted Glaser's or Strauss's approach. Strauss adopted a linear approach while Glaser held the original strategy (Evans, 2013). According to Stern (1994), Glaser's views were supported by other grounded theory researchers who agreed that the late Strauss' 1990 publication was an erosion of the original 1967 methodology, which led to them parting ways. Evans

(2013) suggested the following for evaluation of the empirical grounding of a grounded theory:

1. Fit: does the theory fit the substantive area in which it will be used?
2. Understandability: will non-professionals concerned with the substantive area understand the theory?
3. Generalizability: does the theory apply to a wide range of situations in the substantive area?
4. Control: does the theory allow the user some control over the "structure and process of daily situations as they change through time"? (Glaser & Strauss, 1967, p. 237)

Holton and Walsh (2017) offer three foundational pillars of classic grounded theory (GT): emergence, constant comparative analysis and theoretical sampling. Emergence refers to the result of GT's open and exploratory stance in relation to the research field. Constant comparative analysis refers to how all data are analysed, as they are collected together with all previously collected data. Theoretical sampling is the process through which empirical data are selected and collected as guided by the emerging theory.

A classic grounded theory uses two types of coding, namely substantive coding and theoretical coding, with the former preceding the latter. Hernandez and Andrews (2012), and Walker and Myrick (2006) refer to substantive coding as having sub-phases of open and selective coding.

The constant comparative process involves three types of comparisons: incident to incident for the emergence of concepts, concepts to more incidents for further theoretical elaboration, saturation and densification of concepts, and concepts to concepts for their emergent theoretical integration through theoretical coding (Evans, 2013). According to Hernandez (2009), the memoing process helps the researcher determine which theoretical codes provide the best relational model to integrate substantive codes into theoretical codes. Evans (2013) further states that theoretical saturation is achieved by the constant comparison of incidents in the data to elicit the properties and dimensions of each category or code.

This study applied the classic grounded design and evaluated the empirical grounding thereof in terms of fit, understandability, generalisability and control. The study affirmed all the guidance: fit because grain farming competencies align with the area of entrepreneurial competency of grain farmers; understandability, as a non-professional edited the work and gave positive remarks throughout; generalisability because earlier studies within the entrepreneurial environment confirmed many aspects of the findings; and control through exploring this theory, although not yet testing its propositions. Further application of the data analysis is presented in Chapter Three (see discussion about constant comparison).

2.6.1.4.5.1 Rationale for choosing a classic grounded theory

The current study used a Glaserian grounded theory design. The rationale for using this design stems from this study area lacking substantial empirical evidence. In grounded theory, a theory emerges from data, and thus, it is a methodology whose results provide a solid foundation for action (Emmerson, 2013; Glaser, 2010; Simmons, 2006), and it also places a stronger focus on the bottom-up extraction of themes, without the use of predetermined frameworks (Thomas et al., 2014).

The selection of a grounded theory approach is further informed by the desire to develop a substantive theory in the form of a framework. “A substantive theory is considered a basic theory, or it can be a tentative theory that provides the framework leading to an empirically tested formal theory” (Locke, 2003, p. 5). Another reason for studies generating theories is based on Partington’s call that “there is a persistent call from a significant minority of writers for more inductive, theory-building studies, using empirical data to build theories which are useful, relevant, and up-to-date” (2000, p. 91). Trim and Lee (2004) emphasised that the creation of new management concepts, models and theories is dependent on management academics who can think outside the box and possibly detach themselves from “the castle they inhabit” (p. 474). Trim and Lee added that it is necessary to generate new insights into management theory by conducting theory-building studies such as grounded theory.

Through an ongoing process of constant comparison and theoretical sampling, concepts will develop into categories leading to a main issue and core category, and eventually, a theory will be generated (Poisseroux, 2010). According to this type, the use of literature is postponed until data analysis is completed. This is done as much

as possible to allow theory to emerge from data (Urquhart, 2013). Thomas and colleagues (2015) assert that Glaser's stance maintains a close affiliation with the original approach, where emphasis on objectivity between the researcher and the study foci reflects a need to trust in the emergence of findings from the data. Thus, Glaser and Strauss (1967) highlighted: “Key to this approach is that the researcher does not formulate any hypothesis in advance but tries to approach the research area with as few preconceptions as possible” (Thomas et al., 2015, p. e5).

2.7 Research participants

This section presents the sampling techniques used in the current study and details about the participants.

2.7.1 Sampling

Bless et al. (2013) distinguish between probability and non-probability sampling methods. Probability sampling is used when the probability of including each element of the population can be determined. Non-probability sampling, on the other hand, is used when the probability of including each element of the population in a sample is unknown. Since a non-probability sampling technique was used in the current study, methods categorised as falling within non-probability are outlined below.

2.7.1.1 Theoretical sampling

Sampling directed by the evolving theory, sampling of incidents, events, activities, and populations, for example, is referred to as theoretical sampling (Strauss, 1993). “It is harnessed to the making of comparisons between and among those samples of activities, populations, etc.” (Strauss, 1993, p. 21). According to Li et al. (2015), theoretical sampling is the process of data collection to generate theory; the researcher analyses the data to decide where to go next for theoretical constructs. Strydom and Delport (2005) state that it is used mainly in grounded theory analysis processes, guiding the study to obtain precise information to understand theory development better. For Glaser and Strauss (1967), two major questions drive this process:

1. What groups or subgroups does one turn to next in data collection?
2. For what theoretical purpose?

The simplest type of theoretical sampling can be done by sampling groups of the same type, such as accounting departments in government organisations. This would

result in a substantive theory about these types of groups. A more general substantive theory would be achieved by comparing different departments in one government organisation. Theory is built by further comparing different types of departments in different government organisations; in subgroups. The theory's generality could be increased by considering regional groups or different nations (Urquhart, 2013).

2.7.1.2 Purposive sampling

This sampling method is based on the judgement of the researcher regarding the characteristics of a representative sample. The strategy is to include units that are judged as the most common in the population under investigation, such as a typical school pupil thought of as being 12 years old, male, Christian and having parents who work on a farm (Bless et al., 2013).

The danger here is that the researcher relies heavily on subjective rather than objective criteria. Also, if an expert does not use this method, it may lead to uncontrollable results (Bless et al., 2013). However, since this method allows the inclusion of participants whom I found exhibiting desired characteristics, I found it suitable for use in the current study. Having considered the challenges that come with employing this method, I found that the benefits outweigh those challenges. The end result would produce the desired outcome of developing a competency model for commercial grain farmers.

Because farmers, experts (advisors) and farmworkers display characteristics of possessing grain farming competencies, I purposively included them in the current study. The section below expands on how purposive sampling was used in the current study.

2.7.2 Participants

Polit and Beck (2008) state that research participants are those individuals invited to participate in the study and who have been well-informed about the study aims. Subsequently, they are willing to participate and give their input to the study (Mathafena, 2015). In order to develop a competency model for commercial grain farmers, I asked and invited farmers individually to participate in the study. I was referred to other farmers by farmer organisations as contained in their database. I also got access to them by approaching the provincial Department of Agriculture.

Reij and Smaling (2008) argue that business success can be approached from various angles, focusing on financial and economic success. The frequently used

measures of success include turnover, profitability, performance, return on investment, employment, production, and market share (Gloy et al., 2002; Bigsten & Gebreeyesus, 2007; Reij & Smaling, 2008; Rantamäki-Lahtinen, 2009; Mäkinen, 2013). While many studies focus on only one measure (Pölling et al., 2017), Lumpkin and Dess (1996) propose more comprehensive measurements of success. Nanhou in Pölling et al. (2017, p. 375) states that "success analyses based solely on profit maximisation are not valid for farming". For Awortwe-Abban (2009) in Pölling et al. (2017), success in farming is better understood from the business owner's subjective view. Pölling et al. (2017, p. 375) conclude by stating that "success has a multidimensional character, which exceeds the pure financial dimension to understand it. Based on this brief theoretical derivation, success is self-assessed by the farmers with regard to farms' business situations, development prospects, and successions".

Walter (1997) identified the sources of successful farmers from images of a farmer him-/herself as a steward, a manager, a conservative and an agrarian. Chapter Five elaborates on each of these images of success by farmers.

> The question of what commercial farming is and how should it be distinguished from more 'traditional' forms of working the land has not been adequately addressed in the literature. The term 'commercial' implies that the agriculture undertaken in this category is oriented towards selling products in markets. This, however, is inadequate to distinguish it from other kinds of farming in Africa. The majority of farmers operating on the continent have never been self-contained subsistence farmers. Instead, they regularly interacted with markets in some way. What distinguishes the 'commercial' variety from other kinds of farming is that it is based on modern forms of accumulation. (Schirmer, 2015, pp. 50-51)

Schirmer further states that accumulation in commercial farming is institutionalised, as it happens as a matter of course and is regarded as a central purpose of the farming enterprise. In their classic grounded theory study, while developing a conceptual model that enables understanding consumer purchase decisions concerning the first customised products, including steps of the decision-making process, determinants, and consequences thereof, Tang et al. (2010) found that 36 interviews were adequate. In human resources research, Murphy and colleagues (2016) lament that grounded theory, a methodology with significant potential for human resources, is largely untapped. Thomas et al. (2015) explored the impact of the first clinical placement on the professional socialisation of adult undergraduate student nurses in the United

Kingdom by interviewing 26 participants. In education, Villanueva (2014) used a classic grounded theory study to discover what teachers valued in their work environment as they engaged in working in a classroom. Sikoroski (2016) conducted 12 interviews with participants from business, educational, and non-profit organisations within the United States to conceptualise servant-leaders' use of influence.

McLean-Meyinsse and Brown, Jr. (1994) identified the following as criteria for identifying successful farmers: (a) good management practices, (b) knowledge and early adoption of new technology, (c) strong work ethics, (d) love of farming, (e) size of operation, (f) participation in government programmes, and (g) strong family support. An earlier study found that preference for farming as an occupation, strong work orientation, access to land resources, commitment to learn and develop managerial skills, effective linkages with farm and non-farm organisations, strong family support, and high educational aspirations for their children as important criteria for identifying successful farmers (Brown & Larson, 1979).

C. van der Westhuizen (personal communication, December 07, 2017) outlined the following as key criteria to differentiating successful farmers from the non-successful farmers: vision (having a short- and long-term plan for the farm); financial control and management (availability of farm's income statements); production management (proper management of crops/livestock); marketing (where the produce is marketed); maintenance programme (maintenance of the machinery and implements); staff management; professional profile (long-term fertility of the farm); and organised agriculture (affiliation in farmers' association).

In the current study, 18 interviews with farmers, ex-farmers, farmworkers and agriculture experts were conducted. J. McPherson (personal communication, October 06, 2014) suggested the following criteria for choosing eight commercial grain farmers as suitable participants for this study:

1. Must currently be leasing or owning a farm
2. Location of farm must have access to travel and distribution infrastructure
3. Must have developed the technical skills
4. Must be having 10 or more permanent employees

A further two participants who are farm managers were chosen based on the following criteria (as suggested by McPherson):

1. Must currently be overseeing a leased or owned farm on behalf of the owner

2. Location of farm must have access to travel and distribution infrastructure
3. Must have developed the technical skills
4. Must be having 10 or more permanent employees.

According to Chaminuka et al. (2008, p. 368), “emerging farmers were defined as those previously disadvantaged farmers who are now participating in the market and are still facing some constraints to full participation.” Generally, these are the majority of Black African farmers falling in this category. For this study, one participant classified as an emerging farmer (considered moderately successful) were chosen based on the following criteria relying on the same sampling method as suggested by McPherson:

1. Must currently be leasing or owning a farm
2. Location of farm must have access to travel and distribution infrastructure
3. Must be currently developing some technical skills
4. Must be having 10 or less permanent employees.

An additional participant classified as a farmer who had a challenge that let the business to stop operating (unsuccessful) was chosen based on the following criteria relying on the same sampling method as suggested by McPherson:

1. Must have leased or owned a farm that is currently out of operation
2. Location of farm must have access to travel and distribution infrastructure
3. Must have developed some technical skills
4. Must have had permanent employees in their payroll.

The participants’ information was informed by reaching saturation; if collected data repeats itself, further data gathering stopped. Bless et al. (2013) assert that this method concentrates on getting information from the most extreme cases, highly unusual manifestations of the researched phenomenon, obviously not representative of the target population, which may sometimes be the most revealing cases. Through purposive sampling, four experts from main grain suppliers for the selected farmers were chosen based on the following criteria as suggested by McPherson:

1. Must have 10 years or more in the field
2. Must have advised a chosen farmer for five years or more.

Furthermore, two farm workers were selected following the purposive sampling method based on meeting the following criteria as suggested by McPherson:

1. Must have been employed permanently
2. Must have been with the current farmer for 10 years or more.

The purposive sampling of experts and farmworkers serves as a strategy to include units judged as the most common in the population in this investigation.

2.8 Research settings

Qualitative studies generally take place in physical locations referred to as research sites or settings. According to Schensul (2012), sites may be a socio-political community (e.g., a village, municipality or a city), multiple communities (e.g., a cluster of villages), institution within a community (e.g., university campuses, parks) or lately internet (blogs, social networking sites and wikis). Lewis (2003) contends that selecting research settings involves identifying research participants by their relationship with the research questions and providing the most relevant, comprehensive and rich information.

This study's research setting was on sites considered convenient by the participants, such as their farms, homes or away from both. Interviews were conducted between June 2017 and June 2020. This extended timeframe was due to the participants' availability and their busy schedules. It is important to note that the preceding year (2016) was a very challenging one, with severe drought that was last recorded in 1904 in South Africa. The duration of each interview with the selected participants lasted between 24 and 90 minutes.

2.9 Data gathering

A variety of methods exists to gather data in qualitative research. In this study, I conducted interviews as suitable means for gathering data from the relevant participants.

2.9.1 Interviews

An interview entails a conversation between an interviewer and interviewee, where the former asks the latter questions about their opinions, beliefs, ideas, views and behaviours regarding a particular topic. The aim of interviews in qualitative research

is to obtain rich descriptive data that will help to understand the interviewee's construction of knowledge and social reality (Nieuwenhuis, 2011b). Fontana and Frey (2000) regarded a data source, also referred to as an individual in-depth interview, as one of the most powerful tools for understanding human beings and exploring topics in-depth, ranging from structured, semi-structured and unstructured interviews.

When contrasting interviews with other data gathering methods such as focus groups, for example, Fern (1982) found that those who participated in individual in-depth interviews generated more ideas than those participating in either moderated or unmoderated focus groups. Furthermore, Kaplowitz (2001) found that in individual in-depth interviews, participants were more likely to discuss sensitive topics and stimulate discussion about different topics compared to participants in focus groups. The section below presents the different types of interviews, including the one used for the current study.

2.9.1.1 Types of interviews

Researchers have a choice between open-ended, semi-structured and structured interviews. These will be discussed in the following section.

2.9.1.1.1 Open-ended interviews

In open-ended interviews, the researcher explores the participants' views, ideas, beliefs or attitudes about a certain phenomenon (Nieuwenhuis, 2011b). Also referred to as unstructured interviews, open-ended interviews are "based on a clear plan that you constantly keep in mind, but they are also characterised by a minimum of control over the respondents' responses" (Bernard, 2013, p. 182).

2.9.1.1.2 Structured interviews

Structured interviews include detailed questions, which the researcher developed in advance, commonly used in survey research (Nieuwenhuis, 2011b). Respondents in structured interviews are asked to respond to as nearly identical a set of stimuli as possible (Bernard, 2013).

2.9.1.1.3 Semi-structured interviews

Semi-structured interviews usually require the participant to answer predetermined questions and seldom span a long period of time. In essence, they define a line of inquiry. Therefore, a researcher should be attentive to the participants' responses to

identify new emerging lines of inquiry directly related to the phenomenon studied to explore and probe this further (Nieuwenhuis, 2011b).

There are probing strategies that can be used in semi-structured interviews, such as detail-oriented, elaboration and clarification probes. Detail-oriented probes aim to ensure that the researcher understands who, where and what about the participant's answer. Elaboration probes try to get the full picture and normally involve asking participants to elaborate on a particular answer. Clarification probes are used to check if what has been said is accurate (Nieuwenhuis, 2011b).

According to McIntosh and Morse (2015, p. 1), the purpose of a semi-structured interview “is to ascertain participants’ perspectives regarding an experience pertaining to the research topic.” McIntosh and Morse further state that this data gathering method is designed to ascertain subjective responses from persons regarding a particular situation or phenomenon they experienced. Among all the interview methods, this one is considered unique because of the degree of relevancy it provides the topic while remaining responsive to the participant (Bartholomew et al., 2000).

Participants’ responses in semi-structured interviews are directed to specific areas of inquiry, making it the only suitable method regarding the type of data generated, which cannot be discovered using other methods such as structured questionnaires, participant observation or analysis of the literature (McIntosh & Morse, 2015). Table 2.1 provides a summary of the heuristic typology of semi-structured interviews.

Table 2.1

Heuristic Typology of Semi-Structured Interviews

Interview Type	Purpose	Epistemological Privilege	Role of Participant	Outcome
Descriptive/confirmative	Assessment	Known	Respondent	Confirmation of fit
Descriptive/corrective	Evaluation	Knower and the known	Collaborator	Refutation, elaboration, correction
Descriptive/interpretative	Discovery	Knower	Informant	Understanding
Descriptive/divergent	Contrast	Groups of knowers	Informants	Discernment

(Source: McIntosh & Morse, 2015, p. 3).

The typology, as shown above, is first classified as a descriptive/confirmative semi-structured interview whose purpose is to obtain subjective responses to the objective knowledge. “Although participants’ perspectives and experiences are important, they are most relevant for confirming the frame, so that this type of interview epistemologically privileges the known rather than the knower” (McIntosh & Morse, 2015, p. 3). McIntosh and Morse further suggest that the outcome of this type is mainly to confirm the objective knowledge in the frame of the interviewer.

Descriptive/corrective semi-structured interview is the second typology whose purpose is to evaluate the dominant discursive representation of an experience by comparing it with participants’ actual experiences. It juxtaposes what is known about an experience with the views of those that are under-represented and who have the actual knowledge of this experience. Its outcome is, therefore, to confirm, refute or elaborate the frame, subsequently intending to correct the assumptions of the dominant discourse (McIntosh & Morse, 2015).

The third type, referred to as a descriptive/divergent semi-structured interview, aims to contrast views from different groups of knowers. “This type of interview epistemologically privileges the knowers and seeks to discern their contrasting perspectives and experiences” (McIntosh & Morse, 2015, p. 4). McIntosh and Morse further reveal that divergent views, attitudes and experiences regarding phenomena

that were studied enable deeper awareness of how people discuss the personal and social contexts that shape human choices and experiences.

The fourth type is descriptive/interpretive semi-structured interview, which aims to discover the experiential world of the respondent within topical dimensions. “This type of interview epistemologically privileges the participant as the knower. From the outset, the frame is acknowledged to be limited and subjective knowledge is critical to its expansion” (McIntosh & Morse, 2015, p. 4). As Table 2.1 illustrates, this type provides a thorough understanding of the phenomenon under study.

The ability to conduct an effective semi-structured interview depends on the skills and training an interviewer had acquired. Lack of these skills and training may render the whole interview process a futile exercise because its quality considerably depends upon the interviewer's skill in establishing rapport with the interviewees. Another problem may be with listening and questioning by untrained interviewers. Inattentiveness on the part of the interviewer may lead the participant to believe that s/he is either not interested in what is being said or does not care for their point of view. Thus, the participant may decide to terminate the interview, withhold valuable data or even fabricate their responses (Partington, 2001). In order to counter all these challenges, I attended workshops on how to conduct effective interviews. As a former farm manager, I had established rapport with other farmers, farm managers, farmworkers and professional advisors, which eventually made the process easier to undertake.

The current study used semi-structured interviews to gather data. According to Doody and Noonan (2013), semi-structured interviews can be flexible, allowing for open-ended questions and the opportunity to explore issues that arise spontaneously. The investigator is at liberty to vary the wording of the questions depending on the direction that the interview takes and is also free to ask additional questions. My adoption of the descriptive/interpretive semi-structured interview was informed by limited knowledge literature recorded in this area. “Sometimes the limited knowledge of the frame is confirmed and expanded by participants’ perspectives; sometimes the frame is refuted by participants’ perspectives and gives rise to new categories, themes, and hypotheses with which to understand the experience” (McIntosh & Morse, 2015, p. 4). Discoveries in this study made me understand the important entrepreneurial competencies grain farmers are equipped with. Although the set interview questions was asked, I was flexible and deviated when I needed clarity on

some aspects. As depicted in the interview schedules, similar questions were repeated among individual farmers, individual farm managers, individual farmers whose businesses went under, individual farmworkers and individual professional advisors/experts.

2.9.1.2 Interview schedules

Appendices A, B, C and D contain questions about the interviews conducted with farmers and farm managers, farmers whose businesses went under, workers and experts.

2.9.2 Triangulation

"Triangulation may be the use of multiple theories, data sources, methods or investigators within the study of a single phenomenon" (Heale & Forbes, 2013, p. 98). It may also involve using more than one different data gathering method (e.g., one study using surveys and observation). It may also involve using different methodologies, such as qualitative and quantitative; known as mixed methods designs, investigating different aspects of the same phenomenon (Sarantakos, 1997). The origin of this term stems from the field of navigation, where a location is determined by using angles from two known points (Heale & Forbes, 2013).

2.9.2.1 Types of triangulation

Carter and fellow researchers (2014) identified four types of triangulation: investigator triangulation, method triangulation, theory triangulation and data source triangulation. With investigator triangulation, two or more researchers participate in the same study to provide multiple observations and conclusions. In method triangulation, two or more data collection methods may be used to study the same phenomenon. Theory triangulation involves the use of different theories to analyse and interpret data to assist the researcher in supporting or refuting the findings. Data source triangulation involves gathering data from different types of people, including individuals, groups, families and communities, to obtain multiple perspectives and validation of data.

I used data source triangulation in this study (different types of people within grain farming such as grain farmers, grain farm managers, workers in a grain farm and experts in grain farming providing advice to those farming grain). Semi-structured interviews were used as a tool for gathering data with the said different types of people.

2.9.2.2 Reasons for the use of triangulation

Sarantakos (1997) identified some of the reasons for using triangulation:

1. Obtains a variety of information on the same issue
2. Strengthens each method to overcome the deficiencies of the other
3. Achieves a higher degree of validity and reliability
4. Overcomes the shortcomings of single-method studies

2.9.2.3 Challenges for using triangulation

“Interviews allow for spontaneity, flexibility, and responsiveness to individuals; however, conducting the interviews, transcribing the discourse, and analysing the text often requires considerable time and effort” (Carter et al., 2014, p. 545), especially regarding data source triangulation. There also are challenges in general that are associated with the use of triangulation, which Sarantakos (1997) cautioned researchers about:

1. Triangulation can be useless if based on wrong conditions and wrong research foundations
2. It can be used as a way of legitimising personal views and interests
3. Difficult to replicate
4. Not suitable for every issue

2.9.2.4 Rationale for using data source triangulation

In order to counter the challenges stated above, Heale and Forbes (2013) suggested using different data sources that are appropriate in each research design, which must be evaluated in the context of the project undertaken. I used different data sources in the current study. Thus, as a form of employing triangulation, I incorporated experts to validate perspectives raised by farmers, farm managers and farm workers to ensure the model I develop would be trustworthy. As Heale and Forbes maintained, the objective of triangulating is to increase confidence in the findings through confirming a proposition using two or more independent sources.

2.10 Data recording and storage

Al-Yateem (2012) admits that some participants are affected by the use of recording devices, while others do not mind, depending on the sensitivity of the topic under discussion.

> Leedy and Ormrod (2010) indicated that many researchers are likely to use word processing or similar software to record interviews and perhaps some types of data. By storing data on a computer it allows easy access to retrieve any piece of information using a relevant keyword, and data can be sorted quickly and in multiple ways. Furthermore, precautions should be taken to safeguard data by backing data up on a compact disk, flash drive or a storage device that can be kept in a safe place. The data of the present study was recorded in the form of hand-written notes and a word processor. The hand-written documents were filed, and typed data stored and saved on a word processor and several removable storage devices to ensure multiple storage and safekeeping. (Mathafena, 2015, p. 38)

In the current study, a voice recording device was used to capture and store all interviews between the researcher and participants; immediately after each interview, I transcribed each interview on my computer. Bless et al. (2013, pp. 340-341) recommend "keeping the original audio files plus back-up copies in a password-protected place on a hard drive or similar memory device." I stored the transcriptions in a password-protected place on a memory device.

2.11 The role of literature

According to Urquhart (2013), t literature in grounded theory is referenced after, not before, building the theory because it does not seek to impose preconceived ideas on the world. "Glaser and Strauss recommended this because they wanted the data to speak to the researcher, rather than for the researcher to force theories on the data" (Urquhart, 2013, p. 7).

In grounded theory research, prior reading of literature should be avoided. However, "no one enters the research process as a blank slate" (Urquhart, 2013, p. 7). The point here is the use to which literature is put and not the act of searching literature in itself. Glaser's idea here is "brought about by the concern that literature might contaminate, stifle or otherwise impede the researcher's effort to generate categories" (Urquhart, 2013, p. 17).

> While we are in the business of influencing examiners or reviewers that our use of grounded theory contributes to theory and makes a contribution in general, it's worth using Walsham's (1995) analytic generalisations, which enumerate the four different ways in which a case study can make a theoretical

contribution. The four different types of analytic generalisation he suggested are the following:

1. Development of concepts: this is self-explanatory. Given that grounded theory studies build theory and often discover new concepts. It would be surprising if a grounded theory study did not contribute to this area.
2. Generation of theory: again, in a grounded theory study, where a full theory is built as opposed to using the method for analysis, we would expect a contribution to be made in this area.
3. Drawing of specific implications for particular domains of action, which may prove useful for other related contexts. This, again, should not be beyond the reach of a grounded theory study because, even if extensive theoretical sampling has not been carried out, the grounded theorist will have some sense of how sampling different groups could extend and densify the theory. The principle of theoretical sensitivity should also assist with identifying other contributions to other disciplines and contexts.
4. Contribution to rich insight: when the study itself gives insights that are not easily categorised as new concepts, theory or specific implications, but, nevertheless, provide insight. Grounded theory studies, because of their 'grounded' nature that has a close relationship with the data, often provide many rich insights. (Urquhart, 2013, pp. 169-171)

However, although a grounded theory study has a dictum that literature should not impose concepts on the coding of data, it does not act as an excuse not to engage with the literature. Theoretical integration can be detailed after presenting the findings. "It is simply a case of sequencing, with some searching done at the beginning, but much more searching done at the end of the theory development, so theoretical integration can take place" (Urquhart, 2013, p. 171).

According to Birks and Mills (2015), three factors are necessary for the integration of grounded theory: a) an identified core category, b) theoretical saturation of major categories and c) an accumulated bank of analytical memos. Charmaz (2006) advises researchers to draft a literature review and theoretical framework in relation

to grounded theory. Researchers can use this to direct how they critique earlier studies and theories and make comparisons with these materials.

In the current study, Urquhart's (2013) advice is heeded by providing a literature preview, as done in Chapter Five. A detailed theoretical integration is done in the presentation of the findings.

2.12 Presenting qualitative data and reporting

Webb (1992) advised that in the published paper, it is acceptable to write in the first person when giving a personal opinion or presenting ideas; failing to do so is deceptive and biased. According to Moore et al. (2012), a good report should have enough details that provide a thick description. Moore and colleagues further state that it is important for the researcher to keep the purpose and the audience in mind when writing up a research report, which often incorporates key elements to communicate the findings to interested stakeholders.

> A good report, according to Moore et al. (2012), helps the reader to understand how the researcher came to the conclusions or assertions found in the study findings. The researcher's position needs to be revealed, along with any biases that may have been introduced as a result. The report should describe how data were collected and how categories were derived in enough detail that the reader can trace the path between the data collected and the findings reported. (Mathafena, 2015, p. 41)

In this study, reporting and presenting the qualitative data was done in the first person and participants' ideas were incorporated verbatim in certain instances.

2.13 Ensuring quality of the study

Quantitative researchers ensure the quality of their investigations through validity, replicability and reliability. On the other hand, qualitative researchers use trustworthiness, which encompasses credibility, dependability, transferability, and confirmability, to ensure the quality of their research (Bless et al., 2013).

2.13.1 Trustworthiness

Trustworthiness refers to the level of trust given to the research process and findings and is evaluated on the basis that it caters for credibility, dependability, transferability and confirmability (Bless et al., 2013). Nieuwenhuis (2011b) argues that involving

several investigators or peer researchers to assist with the interpretation of data could enhance the level of trustworthiness. Bless et al. (2013) list the following as tools for increasing research trustworthiness:

1. Adequate description of context: clearly describing the context where the study takes place, the researcher, the participants, their relationship and the context in which they find themselves
2. Adequate description of the sample and the sampling procedure: description of the criteria of inclusion or exclusion and the sampling strategy used
3. Concurrent data collection and analysis: analysis of initial results might highlight an aspect that the researcher was not previously aware of, which might be included in future data collection procedures by adding a question in an interview schedule or interview a different type of person
4. Methodological verification: process of having other experienced researchers verify the logic and implementation of each step of the methodology
5. Ensuring data saturation: achieved when the researcher demonstrates that the data add no new information to what has already been learned
6. Respondent validation (member checking): a process of presenting the results of a study to the people who provided the original data and ask for their feedback
7. Use of sufficient verbatim quotations: inclusion of many direct quotations from the original data in research reports allows the reader to hear exactly what participants said and how the researcher interpreted that information.

2.13.2 Credibility

Credibility corresponds to internal validity as it seeks to convince that the findings depict the truth of the reality under study. Investigations that yield high credibility are those where the researcher convincingly demonstrated the appropriateness and overall internal logic of the research questions, study design, data gathering methods, and the data analysis approach used (Bless et al., 2013). In this study, credibility was ensured by having experts add, remove or modify what participants asserted in the initial phase of the study.

2.13.3 Dependability

Dependability demands that the researcher thoroughly describes and precisely follows a clear and thoughtful research strategy. Accordingly, when the researcher describes exactly how the data were collected, recorded, coded and analysed, readers and reviewers trust that the results are dependable (Bless et al., 2013). Chapters 2, 3 and 4 include discussions about how this study's data was collected, recorded, coded and analysed.

2.13.4 Transferability

Transferability refers to the extent to which findings apply to other similar situations, known as external validity in quantitative research. This element requires the researcher to provide a detailed description of the context in which data were collected and about the researcher as a person, which further includes his/her relationship with the participants. We can conclude that the study has high transferability once an understanding of the context from which the findings emerge is clarified (Bless et al., 2013); see Chapter 4 for a detailed discussion in this regard.

2.13.5 Confirmability

Confirmability requires that other researchers should be able to obtain similar findings by following a similar research process in a similar context, equivalent to replicability in quantitative research. Confirmability is confirmed when another investigator exactly understands what has been done, why it was done and in what context it was done. Thus, ensuring that s/he can replicate the work in another context and predict if and how results might be different (Bless et al., 2013).

2.14 Ethical considerations

The word ethics refers to one's character or disposition (Bless et al., 2013). "It is related to the term 'morality', derived from the Latin term *moralis*, meaning one's manners or character" (Bless et al., 2013, p. 28).

> The ethical codes of science are not based upon the values or rules of any particular society or religion. Instead, they are based on the principle of reciprocity. Stated very simply, the principle of reciprocity is that we should treat others as we would like to be treated by others. At its heart, this principle recognises that all individual human beings should enjoy the same rights and protections. As a result, the ethics of science are closely connected to the

philosophy of human rights, as laid down in the Universal Declaration of Human Rights. (p. 28)

In order to maintain high ethical standards, the sections below highlight ethical principles and guidelines that should be adhered to. In addition to that, some highlights on how these are applied in the current study are made.

2.14.1 Principles of ethical research

Since the goal of research ethics is to minimise the risk to participants, Bless et al. (2013) state that most published ethics guidelines have identified the following common principles of research ethics:

2.14.1.1 Non-maleficence

This is a basic principle stating that participants must not be harmed by participating in the research project. The researcher must be aware of the various possible adverse events that are likely to occur throughout the project. Harm could occur intentionally or unintentionally during the research. The researcher in this study ensured that participants were not harmed by allowing them to share their opinions only if they felt comfortable doing so.

2.14.1.2 Beneficence

Research should have the potential to contribute to the well-being of others. This principle requires that social and behavioural researchers conduct research that is effective and significant in promoting the welfare of people. This study contributed by developing a competency model for the well-being of commercial grain farmers.

2.14.1.3 Autonomy

This principle incorporates both the freedom of individuals' actions and choices to decide whether or not to participate in a research project. To arrive at this autonomy, participants were asked to give consent by signing a consent form (see Appendix E).

2.14.1.4 Justice

The justice principle is based on the belief that all people taking part in research should be treated equally and not discriminated against based on race, gender, disability, income level or any other characteristic. The researcher in this study ensured this principle by allowing all available participants to take part. However, only those that could be reached and were available at that point in time could participate.

2.14.1.5 Fidelity

Fidelity implies faithfulness and keeping promises or agreements, specifically between the researcher and the participants. I promised the participants that the results would be made known in a report or as an article in an accredited journal.

2.14.1.6 Respect for participants' rights and dignity

This principle requires researchers to ensure preserving the dignity and self-respect of participants, which may be fulfilled by understanding and respecting their culture. As this study involved participants from various cultures, I ensured that their rights and dignity were respected.

2.14.2 Ethical guidelines

According to Bless et al. (2013), every research project should adhere to the critical ethical guidelines outlined below.

2.14.2.1 Ethical review

This is one of the most important tools that weigh the ethical standard of researchers before the onset of the project to resolve any ethical concerns in advance. Thus, every researcher's responsibility is to submit a research proposal outlining how ethical issues will be addressed. This study received ethical clearance (see Appendix F).

2.14.2.2 Informed consent and voluntary participation

Informed consent and voluntary participation suggest that since a social investigation invades people's private life, the researcher should get informed consent from participants before they participate (see Appendix E).

2.14.2.3 Anonymity

When willing to participate in a study, participants are sensitive to disclose personal information. I ensured that participants remain anonymous by using a letter and a number to identify the participants, as shown in Chapter 4. Further confirmation was outlined in the consent form (see Appendix E) and signed by the participants.

2.14.2.4 Confidentiality

As an interviewer usually has direct contact with the participants and can recall them, anonymity might be contravened. To avoid this, participants need assurance that the

information they share will be kept confidential. The consent form referred to earlier contains a clause informing the participants about this issue and how it will be treated.

2.14.2.5 Appropriate referral

It is the researcher's responsibility to refer participants whose well-being had been compromised by participating in the research to counselling centres, social work agencies or medical facilities. In the current study, the participants experienced none of the mentioned problems, making the data gathering process easier.

2.14.2.6 Discontinuance

The researcher must assure participants that they are free to withdraw their participation at any time without providing any explanation and without any consequences. Participants should be informed that they will not be prejudiced in any way when they discontinue their participation. I provided clarity in this regard in the consent form that participants signed before participating in the study.

2.14.2.7 Research with vulnerable population

Children, mentally ill persons, the disabled, the unemployed, the homeless, refugees and asylum seekers are considered vulnerable people. They might not possess the necessary degree of understanding to give informed consent to participate in research. This aspect did not affect this study as none of the said population was included.

2.14.2.8 Deception

Deception occurs when the researcher neglects to disclose the true nature of the study to the participants to prevent them from altering their natural behaviour as a result of knowing that they are being observed. For this study, no deception took place as all the participants knew in advance what I had purported, namely developing a competency model.

2.15 Conclusion

This chapter entailed a discussion about the various research paradigms, including this study's fit, namely constructivism. This study comprises a qualitative research approach and the basic aspects of inquiry were presented. My discussion on the research designs detailed the grounded theory design, as well as various options within it. I relied on Holton and Walsh's (2017) three foundational pillars of classic grounded theory as emergence, constant comparative analysis and theoretical sampling. I used semi-structured interviews as a method of gathering data because, as McIntosh and Morse (2015) indicated, semi-structured interviews are directed to specific areas of inquiry, making it the only suitable method regarding the type of data generated, which cannot be discovered using other methods such as structured questionnaires, participant observation or analysis of the literature. My application of the ethical considerations in terms of their principles and guidelines formed the basis of this project. The next chapter focuses on the methods employed to analyse qualitative data in the current project.

CHAPTER 3: DATA ANALYSIS METHODS

3.1 Introduction

This chapter presents the method adopted in the current study to analyse the qualitative data. The discussion starts with a presentation of the general features, as well as the phases of analysis. Also included is a discussion about the steps followed to develop a competency model, which is the primary aim of this study.

3.2 Qualitative data analysis

According to Neuman (1997, p. 426), data analysis "means a search for patterns in data- recurrent behaviours, objects, or a body of knowledge. Once a pattern is identified, it is interpreted in terms of a social theory or the setting in which it occurred."

Several different formats of qualitative data exist: they can be in written words, text, phrases or symbols representing people, actions or events in social life (Neuman, 1997). Miles and Huberman (1994) describe qualitative data as follow:

> They are a source of well-grounded, rich descriptions and explanation of processes in identifiable local contexts. With qualitative data, one can preserve chronological flow, see precisely which events led to which consequences, and derive fruitful explanations. Then, too, good qualitative data are more likely to lead to serendipitous findings and new integrations; they help researchers get beyond initial conceptions and generate or revise conceptual frameworks. (p. 1)

Bazeley (2013) describes analysis as a close engagement with the data and the enlightenment of their significance through insightful and technically sophisticated work.

3.2.1 Common features of qualitative research and implications for analysis

Bazeley (2013, pp. 27-28) outlines characteristics that are seen as common to many qualitative approaches to research, together with their impact for undertaking analysis in Table 3.1 below.

Table 3.1

Features of qualitative research and implications for analysis

Characteristics	Implications for analysis
Intense or prolonged contact with an everyday life situation	Data management system is essential Analysis starts as data are gathered Openness to new directions as new information comes to hand Seek new or further data based on emerging ideas
Looking for 'insider' viewpoint; seeing things from a participant's perspective	Deep attentiveness to participants' viewpoints 'Bracketing' and/or recognising one's own preconceptions
Data usually in the form of words rather than numbers	Use of hermeneutic rather than statistical techniques Less clearly defined strategies for analysis Emphasis on interpretation rather than manipulation of data
Labour-intensive	Allow a period at least two to five times as long for analysis as for generating data The bulk of the work for the project as a whole (and time needed) comes after data are gathered, rather than before
Emphasis on context-'holistic' and 'naturalistic'	Always consider the impact of the setting for the data Analysis is a cluttered process involving consideration of multiple elements and factors at the same time
Methods are non-reductive	All methods have to be reductive to some degree to organise and make sense of data, but with qualitative analysis, access

	to data in its original form is usually retained
Theory emergent; inductive or abductive	More often starts with an idea or a general question than with the goal of testing details of an existing theory Immersion in data as a primary source of understanding
Enormous variety in forms of data used and approaches to using them	Multiple options available for analysing an issue Choices made in the context of research purpose Benefit of flexibility and breadth of researcher skill
Openness and flexibility	Adapt methods in response to unanticipated findings Avoid drawing conclusions early, and hold them lightly
Focus on process rather than variance	Linkages between elements in data are as much or more of a focus than the elements themselves Seeking explanation rather than correlation
Focus on interpretation	Meanings are constructed within subjective and inter-subjective experience
Possibility of multiple interpretations	Focus on those that: • Serve the research purpose • Are internally consistent • Are theoretically sound
Researcher as instrument	The instrument is non-standardised Need for skills training Need for a sharp, analytic, but empathic mind

Lacking clear criteria for rigour and quality	Importance of 'audit trail' to track generation of and document the basis for interpretive ideas and conclusions Maintain a strong evidentiary database to support results
Limited capacity to generalise	Focus on local rather than universal meanings Be specific about the context of these results Focus on understanding process rather than describing range or coverage

The application of intense or prolonged contact with an everyday life situation on the part of the research participants implied that the data in this study had to be analysed shortly after gathering it. Seeing things from a participant's perspective required me as an analyst to consider their views regarding the knowledge they had of the situation(s) they face every day. As a qualitative study and because interviews were conducted, my own data, in the form of words, implied that my emphasis was on interpreting the data and not manipulating it.

This study was labour-intensive as I had to spend many hours analysing the data, and as an instrument of this research study, I had to be thoroughly skilled to conduct the analysis. Also, inductive research meant immersion in data, a primary source of understanding as the theory emerges from data. Furthermore, the capacity to generalise the findings was limited; the study results are only specific to the setting and context where it was conducted.

3.2.2 Phases of analysis

According to Friese (2014), qualitative data are analysed in two phases: descriptive-level and conceptual-level analysis. The descriptive-level analysis aims to explore the data, read or look through them, and notice interesting things that you begin to collect during the first coding stage. Once the code list is developed to describe everything in the data, the analyst names it and tries to make sense of it in terms of similarities and differences. In applying the descriptive analysis in my study, I started with open coding,

where I would code each sentence or line of the interview data as this helps to make meaning out of what the participant was implying when responding to the question posed.

When this is achieved, a conceptual-level analysis starts immediately; a structured code list results from the initial phase. Friese (2014) highlights that the aim is to look at the data from the perspective of the research questions by approaching them from a different angle. It means asking questions using the various analytic tools (e.g., the query and the various table outputs that the software may provide). Based on this exploration, the researcher will once again begin to notice things in the data, but this time, specifically, the relation between them. Thus, s/he has to move the analysis a step further, dig deeper, look at details and begin to understand how it all fits together (Friese, 2014). I did not use any software to analyse data because, as Chametzky (2016, p. 167) asserts, in classic grounded theory, you have to "do your own coding by hand. Do not use a qualitative analysis tool (like NVivo) to help with your coding. The problem with software tools like NVivo is that they do not have the finesse that you do." This aspect is further explained in the constant comparison method I used in this study.

3.3 Qualitative data analysis method

To date, several methods have been developed to analyse qualitative data. A broader discussion here will be on constant comparison, which is the focus of the current study.

3.3.1 Constant comparison

The qualitative data analysis approach in grounded theory, termed constant comparison, is used to establish an analytic distinction and make comparisons at each level of analytic work (Charmaz, 2006). Grounded theory emphasises the generation of a theory, as well as the data on which the theory is based (Strauss, 1993). "Grounded theory 'is a detailed grounding by systematically' and intensively 'analysing data, often sentence by sentence, or phrase by phrase of the field note, interview, or other document; by constant comparison,' data are extensively collected and coded" (Strauss, 1993, p. 22). Therefore, the focus of analysis is not merely on collecting or ordering "a mass of data, but on organising many ideas, which have emerged from analysis of the data" (Strauss, 1993, p. 23).

According to Evans (2013), Glaser and Strauss (1967), and Holton (2007), the constant comparative process involves three types of comparisons: (1) incident to incident for the emergence of concepts, (2) concepts to more incidents for further theoretical elaboration, saturation, and densification of concepts, and (3) concepts to concepts for their emergent theoretical integration and through theoretical coding. The constant comparative method involves making comparisons during each stage of the analysis (Charmaz, 2006, p. 5). It is defined as the “process of constantly comparing instances of data that you labelled as signifying or belonging to a particular category with other instances of data in the same category to see if these categories fit and are workable” (Urquhart, 2013, p. 182).

> The grounded theory researcher needs to compare the data on as many dimensions as possible. Grounded theory researchers take into account all data, including newspaper articles, questionnaire results, social, structural and interactional observations, interviews, casual comments, global and cultural statements, historical documents, whatever is available that allows the researcher to explore all aspects of the theory. (Evans, 2013, p. 40)

Bless et al. (2013) outline the following steps where a grounded theory method was used:

1. Immersion in the data: the rich, complex collected data is read and reread such that the researcher creates a mental picture of the entire data set.
2. Preliminary coding: the text is broken into fragments sharing common characteristics.
3. Coding definitions: each code is clearly defined so that the researcher can code consistently and explain the coding system to others, such as research assistants.
4. Coding: here, the researcher recodes the entire data set by working through transcripts.

Researchers using this approach try to ensure that they make no assumptions about the data based on past experience or theoretical knowledge. “Rather, the data is understood to be the sole source of information and all analysis is based on repeated themes and patterns contained therein” (Bless et al., 2013, p. 352). Harding (2013) suggests three steps when using the constant comparative method: making a list of similarities and differences between the first two cases to be considered; amending

this list as further cases are added to the analysis; and identifying research findings once all the cases have been included in the analysis.

3.3.6.1 Transcription

According to Grbich (2013, p. 20), transcription "involves getting the dialogue or narrative off the devices on which you have recorded it and into a document formatted, so there is a clear researcher-defined column for notes." Evers (2011) poses the following question and answer:

> Why would a researcher want to transcribe a recording at all? One of the reasons is that transcription enables us to get a verbatim record of what is being said, and as such, it is a more accurate way of representing the interview than taking notes. (p. 7)

3.3.6.1.1 Transcription formats

The formats of transcribing interviews include the Pragmatic, Jeffersonian, Goodwinian and Gisted transcripts, as described in the next section.

3.3.6.1.1.1 Pragmatic transcripts

In this transcription format, researchers devise it themselves and tailor it to their needs for analysis and the time and money available. Most of these transcripts are a verbatim reproduction of what was said in the interview. It does not include unwanted things for analysis, such as stuttering, but includes aspects thought to be interesting or relevant (e.g., overlapping speech, silences or hesitations without timing them) (Evers, 2011). For this research, a pragmatic transcript was used and many hours spent transcribing all the interviews to generate a verbatim reproduction of text.

3.3.6.1.1.2 Jeffersonian transcripts

Developed by Gail Jefferson, it is considered the most time-consuming format as it can take up to 20 hours of transcription time per recorded hour (Potter, 2004). It tries to compensate for the loss of sound, pace, intonation and interaction in the conversation, which get lost during the conversion of sound into text (Evers, 2011).

3.3.6.1.1.3 Goodwinian transcripts

The Jeffersionian type of transcription was later adapted into Goodwinian transcription by Goodwin to deal with visual information in an elaborated way by adding symbols into the text as he was interested in the gaze as a means of where the attention of a participant of interaction was directed to (Ten Have, 2007).

3.3.6.1.1.4 Gisted transcripts

This is a form of summarisation used whenever the researcher thinks it will be appropriate for his/her research (Evers, 2011). Dempster and Woods (2011) describe it as follow:

> The idea of gisting is to create a summary transcript that captures the essence of a media file's content without taking the same amount of time or resources as a verbatim transcript might require. Typically, a transcriber using Transana may take four or five hours to create a verbatim transcript of the spoken word in a typical hour-long media file, while such a file can be gisted in one to two hours. (p. 22)

3.3.6.1.2 Alternative to transcription

Due to the time-consuming nature of verbatim transcriptions, people search for alternatives to maximise the strong points of a recording; these efforts could yield more time-efficient. As a result, devices such as voice recognition software have been developed (Evers, 2011). An example of such a device is Dragon Naturally Speaking. Evers (2011) states the following about the device:

> Voice recognition software belongs to the bigger family of speech recognition software, which are directed towards converting spoken words into text. Whereas speech recognition software is able to convert speech that does not belong to a specified speaker, voice recognition software needs to be trained to a particular voice. At the moment, speech recognition software can only handle predefined commands such as in cell phones or in navigation. As a result, for the transcription of interview data, one should turn to voice recognition software. (Evers, 2011, p. 16)

3.3.6.2 Coding

Coding refers to an “act of attaching concepts to data. These concepts are called codes” (Urquhart, 2013, p. 191). Coding is not confined to grounded theory but is generally used in qualitative research. The next section identifies different coding approaches and addresses those specific to grounded theory research.

3.3.6.2.1 Different approaches to coding

The different coding approaches are bottom-up, top-down, middle-range and thematic coding. These are briefly explained below.

3.3.6.2.1.1 Bottom-up coding

This coding approach is applied when codes are suggested by the data and not by literature, thus the grounded theory method (GTM) fits perfectly within this approach. According to Urquhart (2013, p. 38), “GTM requires that researchers very consciously put their knowledge of the literature aside, so preconceptions are not imposed on the data.”

Flick (2014) suggests the following as a checklist for using grounded theory coding:

1. What are your expectations for grounded theory coding in your research?
2. Are you aiming at developing a theory or just using the coding procedures?
3. Which approach of grounded theory is the most appropriate for your issue?
4. Have you integrated memo writing into your analysis?
5. Have you considered that coding is a way of (re)constructing events and experiences?
6. Have you arrived at some general principle, basic social process, or central concept in your analysis? (pp. 417-418)

3.3.6.2.1.2 Top-down coding

In this approach, codes are generated from literature and applied to the data. At times, incidences of codes are counted, commonly referred to as content analysis (Urquhart, 2013).

3.3.6.2.1.3 Middle-range coding

Middle-range coding is a mixture of both bottom-up and top-down approaches; analysis can either proceed to more detailed categories or the common-sense ones can be linked together to form larger categories. Thus, categories can be from both

data and the literature. When the categories become large, they become themes whose description is done under thematic coding (Urquhart, 2013).

3.3.6.2.1.4 Thematic coding

According to Bazeley (2013), the aims of thematic analysis involve arranging relationships between code categories, as well as the significance of such relationships in developing theoretical conception and statements. “It helps, in coding terms, to think of a theme as a large category applied to a larger chunk of data than in top-down or bottom-up approaches” (Urquhart, 2013, p. 39).

3.3.6.2.2 Coding in classic grounded theory

When employing the classic grounded theory, Urquhart (2013) developed steps, namely open coding, selective coding and theoretical coding. The following section elaborates on the said coding used in classic grounded theory.

3.3.6.2.2.1 Open coding

Open coding is a process of attaching initial labels to the data by reducing the data to small sets of themes that appear to describe the phenomenon under investigation. Corbin and Strauss (2008) assert that data are divided into segments and then scrutinised for commonalities that reflect categories or themes. After categorising the data, they are further examined for specific attributes or subcategories.

When conducting my analysis of the core research questions, I followed Chametzky’s (2016) analysis approach in classic grounded theory. I recorded the interview data in the first column of the table and proceeded to code it in the second column. I captured either a sentence or a paragraph and not line by line to get the meaning in the text. In this way, the core questions that formed the basis of this investigation were identified as follows:

1. What is a commercial grain farmer, according to you?
2. Which areas of competence should one possess to run a profitable grain farm?
3. How can a successful grain farmer be identified?
4. What is the current role of grain farmers in agriculture?
5. What are the best methods of acquiring grain farming competencies?
6. What should be included in a competency model for grain farmers in South Africa?

3.3.6.2.2.2 Selective coding

Selective coding is when coding is limited to only those categories that relate to the core category (Corbin & Strauss, 2008). According to Poisseroux (2010, p. 27), selective coding leads to theoretical sampling, which guides sampling initiatives in support of the emergent core category. “The core category is a category within the data that the researcher consistently relates to many other categories and their properties.” Poisseroux further states that this represents how the main concern is resolved by providing the foundation of the emergent theory. A combination of both open and selective coding is summarised as a substantive coding process.

> In substantive coding, the researcher works with the data directly, fracturing and analyzing it, initially through open coding for the emergence of a core category and related concepts and then subsequently through theoretical sampling and selective coding of data to theoretically saturate the core and related concepts. (Holton, 2007, p. 265)

It is in this stage where conceptual themes are created. Harding (2013) lists the following as characteristics of conceptual themes:

1. Conceptual themes are likely to be drawn from different sections of the interview transcripts and use codes taken from the analysis of different illustrative issues.
2. They may not be referred to directly.
3. They may not be spotted on the first reading of the transcripts.
4. The use of conceptual themes is likely to achieve the most difficult aim of thematic analysis, where they examine relationships between different elements of the data.
5. Identifying conceptual themes enables the researcher to move beyond identifying findings to building theory.

During this study’s open coding (see appendices G to K), which occurred by fracturing a longer sentence to develop a code, five themes emerged from the gathered data; each theme had a sub-theme or sub-themes, giving rise to selective coding. The following five themes emerged:

1. Defining the commercial grain farmer
2. Competencies of a commercial grain farmer
3. Indicators of a successful grain farmer

4. Role of grain farming in agriculture
5. Methods to acquire grain farming skills

The themes mentioned above became parts of selective coding, which is a second phase of establishing or determining similarities or differences in the data.

3.3.6.2.2.3 Theoretical coding

Theoretical coding refers to how substantive codes (codes generated thus far pertaining to the area of investigation) relate to each other (Corbin & Strauss, 2008). In classic grounded theory, this is the final stage where a theory is generated. The researcher conceptualises the core category into a substantive theory to explain the phenomenon as revealed and grounded in the data. Once a substantive theory is generated, the researcher may turn to existing literature to support, compare or challenge the emergent theory (Poisseroux, 2010).

The final coding stage, referred to as theoretical coding, occurs “to conceptualise how the substantive codes may relate to each other as hypotheses to be integrated into the theory” (Holton, 2007, p. 255). Scott (2009) asserts that the challenge in grounded theory is the ability to get conceptual; being close to the data can cause blurring and difficulty in seeing the theoretical patterns.

In doing the theoretical coding for my study, after determining similarities or differences in the data that I performed in selective coding, I clustered together sufficient features to form categories. With the emergence of theoretical codes, I identified themes, sub-themes, patterns, concepts and relationships. This was followed by developing the initial competency model for commercial grain farmers, which had to undergo validation by experts.

3.3.6.3 Memoing

According to Birks and colleagues (2008), a ‘MEMO’ is a mnemonic that stands for ‘Mapping research activities; Extracting meaning from the data; Maintaining momentum; and Opening communication.’ In grounded theory, memos are records of thoughts, feelings, insights and ideas in relation to a research project (Birks & Mills, 2015). “The memoing process helps the researcher determine which of the theoretical codes provides the best relational model to integrate substantive codes to theoretical

codes" (Evans, 2013, p. 40). According to Clarke (2005, p. 85), memos are best described as "intellectual capital in the bank."

> More prosaically, memos are written records of a researcher's thinking during the process of undertaking a grounded theory study. As such, they vary in subject, intensity, coherence, theoretical content and usefulness to the finished product. However harshly you may critique your efforts at memo writing, never throw a memo away as you cannot anticipate when it might suddenly become vitally important. Memo writing is an ongoing activity for grounded theorists as memos are generated from the very early stages of planning a study until completion. Your memos will, in time, transform into your grounded theory findings. Writing consistently and copiously will help build your intellectual assets. (Birks & Mills, 2015, p. 10)

These theoretical memos capture the "meaning and ideas for one's growing theory at the moment they occur" (Glaser, 1998, p. 178). Glaser does not support different types of notes, as suggested by Strauss and Corbin (1990) because, according to him, they limit the development of a theory. Thus, key elements to be used in classic grounded theory are field notes and coding freedom. Field notes allow the researcher to "stay focused on what is really happening and facilitates coding on a higher conceptual level without the distraction of endless descriptive and superfluous detail" (Glaser, 2011, p. 55). These field notes "form the basis for the construction of memos, memos play a key role in the development of the theory" (Montgomery & Bailey, 2007, p. 76). In classic grounded theory, there is no one set format in the design of field notes, and they may change in format as the research develops (Glaser, 2011).

As memoing serves as a cornerstone of quality in grounded theory research, Birks and Mills (2015) motivate that the following questions need answers:

1. Why do we need to memo?
2. When do we memo?
3. What do we memo?
4. How do we memo?

Regarding the why part, concrete data is abstracted and momentum is maintained as the researcher progresses with the analysis. In the end, memos serve as catalysts

in data generation and analysis, form the foundation of the researcher's final theory and provide substance for the written presentation of research (Birks & Mills, 2015).

On when to memo, Bryant and Charmaz (2007) and Wiener (2007) state that it occurs from data collection to theory construction, while Corbin and Strauss (2008) differ by stating that it is unique to analysis. Birks and Mills (2015) contend that it commences when a study is conceptualised, and the habit will be established during the critical stage of data collection and analysis. Regarding what to memo, Birks and Mills suggest the following:

1. Feelings and assumptions about the research
2. Philosophical position in relation to the research
3. Musings on books and papers that have been read
4. Potential issues, concerns and problems concerning study design
5. Reflections on the research process, including factors that influence quality in research
6. Procedural and analytical decision-making
7. Codes, categories and the developing theory

In addition to the list mentioned above, Birks and Mills further suggest the inclusion of illustrations and diagrammes that clarify the relationships in the data and enhance conceptualisation. Finally, on how to memo, it is said that initially, memos consist of only one or two lines over which more may or may not be added later. Glaser (1978) suggests that these memos should remain open for as long as necessary because, as Lempert (2007) argues, closing them off can result in prematurely closing an analytical pathway. Birks and Mills (2015) advise researchers to consider all memos as active until a final theory has been constructed, making subsequent additions to memos as preferable to the amendment to prevent deleting insights, which is an action that might be regretted later.

3.3.6.4 Theoretical saturation

"Theoretical saturation is achieved by the constant comparison of incidents in the data to elicit the properties and dimensions of each category or code" (Evans, 2013, p. 41). Charmaz (2006, p. 113) concedes that "categories are 'saturated' when gathering fresh data no longer sparks new theoretical insights, nor reveal new properties of these core theoretical categories." As for Glaser (2001):

> Saturation is not seeing the same pattern over and over again. It is the conceptualization of comparisons of these incidents, which yield different properties of the pattern, until no new properties of the pattern emerge. This yields the conceptual density that, when integrated into hypotheses, make up the body of the generated grounded theory with theoretical completeness. (p. 191)

According to Riley (1996), most studies achieve saturation between eight and 24 interviews, depending on the topic focus. Skodol-Wilson and Ambler-Hutchinson (1996) caution that though it is dangerous to provide specific numbers in developing a saturation point, it is a guideline in a methodology that has often developed over-rigid rules for judging the credibility of grounded theory products. Therefore, in evaluating the credibility of the theoretical sampling, Breckenridge and Jones (2009) state that the researcher must understand that there is no definitive checklist for ensuring credibility and that theoretical sampling will be different for every theory.

3.3.6.5 Theoretical sensitivity

For Strauss and Corbin (1990, p. 41), theoretical sensitivity "refers to a personal quality of the researcher, an awareness of the subtleties of the meaning of data." Gibson and Hartman (2014, p. 106) add by stating that it "is about being able to describe what theory is, know how to construct it and appreciate how it varies."

3.3.6.5.1 Key elements of theoretical sensitivity

Gibson and Hartman (2014) identify the following as key elements of theoretical sensitivity:

A quality of the researcher so that:

a. they can effectively ask and answer the following questions when doing grounded theory:
    i. What does the theory do?
    ii. How is it conceived?
    iii. What is its general position?
b. they have the attitude of being open to the fact that the theory might be constructed in a multitude of ways

c. they have an awareness of the different coding families associated with grounded theory
d. they can analyse how a particular theory works and fits the problem being explained
e. they are aware of the importance of sampling and integrating diverse incidents of data into their theory
f. they know that anything that is observed can potentially modify the theory and are clear about how to do this. (p. 107)

As shown above, being open is one of the key features of theoretical sensitivity:

> If you do grounded theory, you have to be open to the idea that the world you are studying, because it contains people, will be subject to immense variability. Because of this variability, you will also need to be open to the myriad of ways that you might need to construct your theory to be able to:
>
> a) describe the wide variety of concerns that your participants might be resolving
> b) specify the way these concerns are related to each other. (Gibson & Hartman, 2014, p. 109)

On developing theoretical sensitivity through theorising, Charmaz (2006) asserts:

> Taking a closer look at processual analyses may aid your efforts to construct theory. Studying a process fosters your efforts to construct theory because you define and conceptualize relationships between experiences and events. Then you can define the major phases and concentrate on the relationships between them. Major events and often the pacing may be clear when you study an identifiable process, such as becoming a member of a profession… If so, you may have to do considerable observational and analytic work to define phases that make empirical and theoretical sense. (p. 136)

In order to maintain the analytic momentum, Charmaz advises researchers to remain open to theoretical possibilities.

> Any field contains fundamental concerns and contested ideas, whether or not they have yet been theorised. As we code data and write memos, we can think

about which ones, if any, our materials suggest and how our completed theories address them. (2006, p. 138)

3.4 Development of a model

The following section outlines the steps to be adhered to in developing a model, including a discussion about modelling and what a conceptual model is.

3.4.1 Conceptual model

According to Perri and Bellamy (2012, p. 35), a model is a "formal representation of exactly how a theory might be realised, showing how the explanatory factors are (1) to be measured, (2) predicted to be linked with each other and (3) how they relate to what is being described or explained." Simon and Burstein (1985) add that a model is a mini-theory because it focuses on a few elements abstracted from reality.

The importance of a conceptual model is that it "impacts all aspects of the study, in particular the data requirements, the speed with which the model can be developed, the validity of the model, the speed of experimentation and the confidence that is placed in the model results" (Robinson, 2004, p. 63). According to Ward (1989), "a well-designed model significantly enhances the possibility that a simulation study will meet its objectives within the required time-scale. What sets truly successful modellers apart is their effectiveness in conceptual modelling" (Robinson, 2004, p. 63-64).

> Having argued that conceptual modelling is of utmost importance, it must also be recognised that it is probably the least understood aspect of simulation modelling. There is surprisingly little written on the subject. It is difficult to find a book that devotes more than a handful of pages to the design of the conceptual model. Neither is there a plethora of research papers, with only a handful of well-regarded papers over the last four decades. The main reason for this lack of attention is no doubt that conceptual modelling is more of an "art" than a "science" and, therefore, it is difficult to define methods and procedures. (p. 64)

Concerning what a conceptual model is, Robinson (2004, p. 65) defines it as "a non-software specific description of the simulation model that is to be developed, describing the objectives, inputs, outputs, content, assumptions and simplifications of the model." Objectives address the purpose of the model and modelling project. Inputs are those elements of the model that can be altered to improve, or better understand the real world; otherwise known as the experimental factors. Outputs address the

report that the results from the simulation run. Contents are the components that are represented in the model and their interconnections. Assumptions are beliefs about the real world being modelled, while simplifications enable more rapid model development and use (Robinson, 2004, p. 64).

3.4.1.1 Requirements of the conceptual model

According to Robinson (2004), a conceptual model should meet the following four requirements:

1. Validity: A perception, on behalf of the modeller, that the conceptual model will lead to a computer model that is sufficiently accurate for the purpose at hand.
2. Credibility: A perception, on behalf of the clients, that the conceptual model will lead to a computer model that is sufficiently accurate for the purpose at hand.
3. Utility: A perception, on behalf of the modeller and the clients, that the conceptual model will lead to a computer model that is useful as an aid to decision-making within the specified context.
4. Feasibility: A perception, on behalf of the modeller and the clients, that the conceptual model can be developed into a computer model. (p. 67)

3.4.1.2 Communicating the conceptual model

Robinson (2004) emphasises that a conceptual model can be represented through the following commonly used methods:

1. Component list providing a list of the components in the model with some description of the detail included in each.
2. Process flow diagram representing a conceptual model as a process flow or process map that shows each component of the system in a sequence and includes some description of the model in detail.
3. Logic flow diagram uses standard flow diagram symbols to represent the logic of the model rather than the process flow. It is good for capturing logic and the nomenclature is likely to be familiar to the user.
4. Activity cycle diagram is used as a specific means for representing discrete-event simulation models. It sits somewhere between process flow and logic flow diagrams in that it describes in part the logic of the model while also giving a visual representation.

3.4.2 How to develop a conceptual model

Robinson (2004) suggests that a framework for developing a conceptual model consists of the following four elements:

1. Develop an understanding of the problem situation
2. Determine the modelling objectives
3. Design the conceptual model: inputs and outputs
4. Design the conceptual model: the model content

All these elements are discussed below.

3.4.2.1 Develop an understanding of the problem situation

According to Robinson (2004, p. 79), the extent to which the client understands and can explain the problem situation goes a long way in developing a conceptual model. The modeller also needs to play an active role in speaking with the right people and come up with alternative versions of the events to facilitate new ways of perceiving the problem. “It is during the process of understanding the problem situation that areas, where there is limited knowledge of the operations system, are likely to be identified. It is about these areas that assumptions have to be made”.

3.4.2.2 Determine the modelling objectives

Regarding forming a model objective, a useful question to ask is what the modeller hopes to achieve with the model. In order to attain this, three aspects need consideration. First, the modeller should determine what the clients wish to achieve. Two, the level of performance is required. Lastly, what constraints the clients or the modeller work within must also be determined. This considers the time available and the limited budget (Robinson, 2004).

3.4.2.3 Design the conceptual model: inputs and outputs

The initial stage of model design involves its inputs and outputs, often depicted as experimental factors and responses. It is important to determine the range over which the experimental factors should be varied. The model objectives are achieved through these inputs and outputs. Responses serve two purposes: first, to identify whether objectives have been achieved; second, to why objectives are not achieved (Robinson, 2004).

3.4.2.4 Design the conceptual model: the model content

Robinson (2004, p. 84) argues that “the starting point in designing the model content is to recognise that the model must be able to accept the experimental factors and to provide the required responses”. For this to be achieved, the scope of the model must be determined to provide a link between the experimental factors and responses. Then the level of detail should be in such a way that it represents the components defined within the scope and interconnection with the other components of the model with sufficient accuracy. According to Powell (1995) and Pidd (1999), prototyping is a powerful method aiding to form a decision about the scope and level of detail to be included in the model, the purpose being to provide insight about the key variables and interconnections to help with the design of a conceptual model (Robinson, 2004).

3.4.3 Steps to develop a model

In order to develop a model, Prastacos and colleagues (2005) cited in Grobler et al. (2011) suggest the following steps:

1. Step 1 entails competencies generated from current and future trends in the industry (different databases such as interviews with leading experts in the field provide valuable information)

2. Step 2 entails competencies generated from core capabilities in leading firms (low, average and best performers can be differentiated; interviews with best performers help to identify core capabilities necessary to validate previously generated competencies to newly developed ones)
3. Step 3 entails competencies generated from the organisation’s strategy (in-depth analysis of a firm’s goal and strategy must be done)
4. Step 4 entails a synthetic list of competencies and scope (defining the scope of competencies requires special attention)
5. Step 5 entails generalisability, creation of competency areas and sorting of competencies by areas (generic competencies should be examined and sorted to identify specific competencies related to jobs)
6. Step 6 entails validation of competency framework (a representative selection of job-holders has to validate the competency model just before it is implemented).

For this study, the following four steps were followed to develop a competency model for commercial grain farmers:

1. Step 1 (Data collection)

   This step entailed gathering data using a semi-structured interview. The questions contained in the interview schedules were posed to farmers, farmers' workers and experts, respectively (see appendices A, B, C and D).
2. Step 2 (Data analysis)

   In grounded theory, data gathering and analysis happen simultaneously (Charmaz, 2006). From the onset of the first interview, I did open coding. I went through the data line by line and attached codes to see what emerged from the data. From there, I did selective coding; selectively looking for cases that illustrate themes and made comparisons and contrasts after most or all data collection was complete. Finally, I did theoretical coding where categories were related to each other and the relationships between them were considered (Neuman, 1997; Urquhart, 2013).
3. Step 3 (Validation and verification of the initial competency framework for commercial grain farming)

   In order to verify and validate the initial model, I revisited some of my research participants and asked their opinion on the newly developed model. Based on their inputs, suggestions to modify the initial model were implemented. Experts were also involved in validating the initial model.
4. Step 4 (Literature review summary)

   This last step highlighted a summary of the literature review on the competency of commercial grain farmers.

3.5 Foundations of analytic induction

Analytic induction refers to a systematic and exhaustive examination of a limited number of cases to provide generalisations about a particular phenomenon. Analytic induction aims to induce laws from deep analysis of experimentally isolated instances (Riemer, 2012). Grounded theory and analytic induction employ inductive methods of analysis. Analytic induction researchers develop a possible explanation from what they know of the field. From there, they evaluate, amend and re-evaluate their hypothesis based on the identified data. According to Cressey cited in Riemer (2012), the following comprise the stages of analytic induction:

1. Define the phenomenon
2. Hypothesise an explanation
3. Study one case to see if it fits the facts
4. Modify the hypothesis or the definition in light of this fit
5. Review further cases. (p. 179)

3.6 Application of analytic induction and grounded theory methods to the study

Riemer (2012) states that analytic induction uses some procedures similar to those of grounded theory. However, grounded theory researchers want concepts to emerge, whereas those doing analytic induction are interested in producing and confirming the causes of a problem. For this study, a classical grounded theory was used and no analytic induction was applied. As Gilgun (1995) maintained, analytic induction is unlike other qualitative approaches as it begins with a pre-existing theoretical viewpoint or hypothesis that guides the researcher's approach to the examined cases. Simmons (2011, p. 27) suggests that classic grounded theory is neither objectivist nor constructivist. Instead, it holds "reasonable and limited, rather than absolute features of both". Also, it is a methodology "of greatest practical use because it solidly grounds explanatory theory in data and provides a theoretical foothold for effective actions and change initiatives" (Simmons, 2011, p. 27).

3.6.1 Steps I took in the analysis of data

I first conducted a literature review to gain an understanding of existing models, theories or frameworks on competencies in general. I then developed a semi-structured questionnaire to guide and facilitate the data gathering process, which is regarded as a deductive process.

Secondly, I defined the phenomenon and identified variations through reading and re-reading the data while in-depth comparative analyses were performed. Comparisons were made between the different data derived from the participants while at the same time looking for variations and common characteristics. Variations were considered together in terms of shared features. In order to achieve this, I conducted semi-structured interviews with five farmers between 29 June 2017 and 17 February 2019. The delay resulted from resistance to allow me to enter their premises and postpone our appointments due to their busy schedules. Surprisingly, I managed to secure 10 interviews in two days (26 and 27 February 2020). With the support of

grounded theory, I managed to operationalise the data analysis to get a sense of the data, then progressed from open coding to selective coding. The coding was driven by a combination of codes deduced from literature (known as deductive reasoning) and derived from data (known as inductive reasoning). According to Mathafena (2015), grounded theory does not assume that data simply await discovery in an external world or that methodological procedures will correct limited views of the studied world. Also, it does not assume that impartial observers enter the research scene without any form of frame of reference. Instead, what observers see and hear depends upon their prior interpretive frames, biographies, interests, as well as their research contexts. Throughout, I have constantly been comparing participant to participant to determine similarities and differences.

Thirdly, sufficient shared features were clustered together to form categories, theoretical codes emerged, identifying themes, sub-themes, patterns, concepts and relationships. I then developed the initial competency model for commercial grain farmers. Fourthly, having ensured that the data analysis was valid and reliable through testing emerging theory against the data, in March 2020, I sent out copies of the initially developed model to three experts and personally visited them on 3 March 2020. Upon analysis of the interviews to support, elaborate and further improve the initially proposed model, I conducted a second phase of the literature study. This was done to inform me of the concepts that arose from the interviews, where I applied the principles of coding to organise and arrange themes, adjusted and modified the model. This process of verification was mainly an inductive data analysis process.

In the fifth phase, a classification of categories was constructed, and case features were elucidated to facilitate the theoretical development and best explanation of the data. In this phase, I developed a final competency model for grain farmers.

3.7 Conclusion

In this chapter, I gave meaning to what qualitative data analysis entails. Also, I presented the common features of qualitative research, the implications for analysis, including their application in the current study. I also discussed the relevance of the constant comparison method for my grounded theory study. My application of the constant comparison method used in analysing data in this classic grounded study involved three types of comparisons: incident to incident for the emergence of

concepts; concepts to more incidents for further theoretical elaboration, saturation, and densification of concepts; concepts to concepts for their emergent theoretical integration and through theoretical coding. This chapter concluded with a presentation of the steps I followed in analysing the data, specifically regarding developing the competency model for commercial grain farmers. The next chapter addresses the practical data analysis in two parts, namely Part 1 and Part 2.

CHAPTER 4: PRACTICAL DATA ANALYSIS (PART 1)

4.1 Introduction

This chapter concerns the practical data analysis and starts by first introducing the research participants. Following this is a discussion about how the questions developed, which guided the semi-structured interview process when gathering data from the 15 participants. Also included and based on the questions posed is a presentation about the open coding process where data were clustered. The analysis proceeded to selective coding, which led to the development of sub-themes. Part 1 of this chapter concludes with a discussion about the theoretical coding process, providing a visual presentation of a diagram entailing the initial competency model for commercial grain farmers. In Part 2, a detailed discussion about the testing and verification of this model is provided. The central research questions for this study are:

1 How is a commercial grain farmer defined?
2 What are the indicators of successful grain farming?
3 What is the importance of grain farmers in agriculture?
4 Which core competencies (skills, knowledge and personal attributes) should grain farmers possess?
5 What are the best methods of acquiring grain farming competencies?
6 What would be included in a competency model for grain farmers in South Africa?

This study took place in the Free State Province, famously known in the farming sector as the country's bread basket. It is one of the nine provinces constituted in the Republic of South Africa. This province is demarcated into five district municipalities: Thabo Mofutsanyana, Fezile Dabi, Xhariep, Motheo and Lejweleputsa (see Figure 4.1). The study was conducted in the district municipality of Thabo Mofutsanyana, which covers local municipalities such as Setsoto, Nketoana, Dihlabeng, Phumelela and Maluti-a-Phofung. The focus was on Maluti-a-Phofung, as it was considered a poverty-stricken area by Statistics SA; it only had about 26% of employment, with government being the major employer (Statistics SA, 2011). This municipality is located in the eastern part of the province and borders both KwaZulu-Natal and Lesotho. Thus, the weather patterns on both borders greatly impact what happens in this area (e.g., heavy winter snows in Lesotho and heavy summer rainfalls in KwaZulu-Natal).

Figure 4.1

Map of Thabo Mofutsanyana district municipality in the Free State

About fifteen farmers agreed to participate in the study, twelve of whom were Black males and three White males, all South Africans whose ages ranged from 30 to 74 years old. All the farmers were involved in a mixed type of farming, planting crops and breeding livestock, especially cattle and sheep, except one who was only in livestock. The major grains planted in this district municipality are maize, dry beans, sunflower, wheat and soya beans. Two participants did not own a farm but worked on leased farms. Farm sizes for those who own them ranged from approximately 250 hectares to just above 500 hectares. The participants' positions on farms ranged from farmers themselves (farm owners) to farm managers (sons of farmers whose fathers were still very active with farm activities and decision-making). Ten interviews were conducted in Sesotho except for two, where there was a mix of Sesotho and English. Although the tapes were recorded in the original language(s), the transcripts contained translated texts. The remaining three interviews were conducted in English. All the transcripts amounted to about 98 typed pages of text that emerged from the interviews. Every effort has been made to keep the richness of the information shared in the interviews. For the interviews conducted in both languages, the Sesotho parts were translated, leaving the English verbatim. The length of the interviews lasted from 24 to 96 minutes. All the participants are considered successful grain farmers because they

received recognition from GrainSA for producing high yields in certain crops such as maize.

Table 4.1 summarises the demographic information of all the research participants who voluntarily agreed to participate in this study. Table 4.1 displays their demographic information, as shared by themselves during the interviews, which took place between 2017 and 2020. Section 4.2 includes a detailed analysis of each participant, addressing each of their profiles.

Table 4.1

Summarised demographic information of the research participants

Interview date	Participant identity	Participant status	Age	Race & Gender	Educational qualification	Are you a full-time bona fide farmer?	Number of years involved in farming	Do you own a farm or is it leased?	Farm size	Arable and grazing land	Live on farm or distance from home	Any livestock component on the farm?	Type of farming	Main crops planted	Do you have own farm implements?	How do you manage your farm implements?	Do you keep farming expenses records?	Are you a member of a farmer's organisation?	Are you part of any training and development programme?	What there a decline or increase in yield over the past three years?
2017-06-29	P1	Farm manager	35	Black Male	After grade 12, did LADP courses at a university	Real farmer	15 years	Family-owned farm	407 ha	125 arable and 282 for grazing	Home and on farm, home is 30 km away	There is livestock	Mixed farming but mainly producing crops	*maize, soya, wheat dry beans & sunflower*	There are implements				Do attend short courses offered by GrainSA	A decline by 40% resulting from drought
2017-08-18	P2	Farmer	62	Black Male	Standard 8	Yes	Since 1988	Own	250 ha	160 ha arable and the rest is grazing	No but much of the time on farm, home is 20 km away & travel daily	60 heads of cattle	Mixed farming but mainly crop farming	Maize, dry-beans, wheat & soya beans	Yes, sorted in that angle	Self-managed, everything still needs to be properly inspected because many a times these implements wear out	Yes	Yes, I am a member of AFASA	Yes I am taking part at GrainSA	no yield at all
2018-07-07	P3	Farmer	69	Black Male	No formal schooling	Yes	Since 1990	Own	360 ha	250 ha arable land and the rest is for grazing	Sometimes but home is in Qwaqwa, distance is 15 km & travel daily	Yes, especially dairy cattle	Mixed farming, dairy and crop farming	Maize, beans and wheat and even soya	Yes, they have to be there	Around this time when we are done with the whole work, we look after them, fix everything, so that when rain comes you are not delayed by fixing them	Yes we keep them for tax purposes, and give them to bookkeepers	No these unions just take our money, we do not see what they do	There are GrainSA and Nestle for dairy	We did plant but drought hit us severely
2019-02-16	P4	Farm manager	30	Black Male	Grade 11	Yes, it is in my blood	I did this since I was nine years	Family-owned farm	408 ha		We live here on the farm	Yes, it is even dairy over there	Mixed farming, dairy and crop farming	We plant mainly beans, maize, soya, and even wheat	Yes	Like that one we use to harvest beans, after harvesting beans, we clean them up, take out the dirty stuff, apply oil	Yes, old man takes them to the auditors	I think is NAFU	I have been attending these workshops at NAMPO in Bothavile where these new machines are introduced	The past three years yields were good except for 2018 where it was not good
2019-02-17	P5	Farmer	70	Black Male	Currently doing Master's degree in agriculture	I can't say I am that much of a farmer. But as for work, I work even though I don't have land	Yea, it's been some time, sir. It's been 26 years now.	Well, as for work I work but I lease land	400 ha	200 ha ploughed and about 150 ha though scattered for grazing	No, I travel about 60 km everyday	Sheep are somewhere far and the cattle in the different farm as well as fields in a different farm	Mixed farming but mainly crop farming	Maize, soya and beans	Yea, I do have the basic implements	I maintain them myself, I do it myself	It's a daily bread, you can't go without it	Many, many, many	I have done all the courses of GrainSA, all of them, all of them, starting from scratch up to marketing	Last year was not that good, 2017 was much better. This year is going to be bad

2020-02-26	P6	Farmer	60	White Male	Certificate in electrical engineering			Land on lease	1600 ha				Crops only	Specialising in maize, sugar beans, soya & sunflower	Yes	John Deere does servicing of tractors & day to-day maintenance done self	Yes of course, you can't control it, you can't manage it	VKB		
2020-20-26	P7	Farmer	74	Black Male	Standard 4								Mixed farming							
2020-20-26	P8	Professional advisor/ Expert	35	Black Male	Bachelor's degree in agriculture															
2020-02-27	P9	Farmer	Late 20's	White Male	Tertiary education								Mixed farming							
2020-02-27	P10	Farmer	Mid 30's	White Male	Tertiary education								Livestock only							
2020-02-27	P11	Farm worker	Mid 40's	Black Male	Primary education								Mixed farming	Maize, beans, soya, wheat						
2020-20-27	P12	Farm worker	56	Black Male	Matric		2002 work related but grew up on a farm	Land belongs to the boss					Mixed farming but mainly crops	Maize, dry-beans, wheat & soya beans						
2020-02-27	P13	Farmer whose business went under	64	Black Male	Former professional nurse		25 years	Was own farm	356 ha		Home and on farm	There is livestock	Mixed farming crops and dairy	maize, soya, wheat dry beans & sunflower	There were implements	Did repairs		AFASA	Used to attend courses offered by GrainSA	
2020-02-27	P14	Farmer	46	Black Male		Yes		Family-owned farm			Farm	No livestock	Crop farming only	Maize, wheat, dry-beans, soya	There are implements	We manage them ourselves	Yes	AFASA, VKB	Attend courses at GrainSA	
2020-02-27	P15	Farmer	44	Black Male	Standard 9 now grade 11	Yes	Since 2002 after my father passed on	Family-owned farm	566 ha	136 ha are fields and the rest is for grazing	Home and on farm	There is livestock mainly Bonsmara	Mixed farming	*Maize, soya, beans*	Have implements	Repair them myself	Yes	Nerpu member, VKB, AFASA and Makholoko e organisatio n	GrainSA as well as some training by the department of agriculture and rural developme nt	

4.2 Profiles of the research participants

GrainSA, in collaboration with one of the universities in South Africa, gave the first participant (referred to as P1), a 35-year-old Black male farm manager, who had the opportunity to study for three years in a programme called Learner Agricultural Development Programme (LADP). This programme includes fields such as risk and financial management. His involvement in the farming business spans over 15 years; starting immediately after matriculating in 2002. His farm is a 407-hectare family-owned farm situated 30 km away from home; about 125 hectares are used to plough crops such as maize, soy, wheat, dry beans and sunflower, and the remainder of the land for grazing of the livestock. He travels about 60 km from home to the farm daily but stays on the farm during busy times. Due to the implements used on the farm, he upskills himself by frequently attending short courses run by GrainSA. His farm was severely hit by drought over the past three years; they had a decline of about 40% in crop yield.

The second participant (referred to as P2) is a 62-year-old Black male who started farming while working for a major petroleum company. He is mainly involved with crop farming and has also acquired his own agricultural machinery (see Figure 4.2). His highest level of education is Grade 10. He started farming on a part-time basis in 1988 while working full-time at a petroleum company. He owns a farm, though his home is in the village. He travels daily for more than 40 km to the farm, although some days are spent on the farm to prevent theft in the area. He also travels 20 km from his home to the farm to transport his workers.

Crops that are suitable to plant are maize, soybeans and wheat. He practises a mixed type of farming. He has 60 heads of cattle that graze on an area where it cannot be tilled, mostly focusing on crop farming to help improve the soil and the grass. The suitable crops grown on his farm, which he says “make profit” are edible beans called dry beans, maize, wheat and soybeans. Over the past three years, the yield on the region was hit hard by drought, though he luckily still managed to continue planting some crops that received a good price on the market. His professional membership is with AFASA (a farmer’s organisation for African farmers), securing mentoring and training. He considers himself a true farmer though there are areas where he still needs to improve, thus as an inquisitive farmer, he continuously seeks help when the

need arises to make his work effective. He owns a 250-hectare farm where fields occupy about 160 hectares for ploughing and the remainder is for grazing. It appears that the environment dictates what the farmer has to plant. Figure 4.2 illustrates what enables him to perform his work successfully.

Figure 4.2

P2's farming implements

The third participant (referred to as P3), a 69-year-old Black male farmer without formal schooling, had been farming since 1990. The farm he owns is approximately 360 hectares, from which 250 hectares is for the fields, while the remainder is for grazing; he also mixes his crop farming with dairy. Though this farmer lives on the farm, he travels 15 km daily to transport his workers to and from work. The crops planted, using his own implements, are maize, dry beans, wheat and soybeans. He keeps records of his farming expenses; the invoices are taken to accountants for tax purposes. To upskill himself, he frequently attends courses offered specifically by

GrainSA for his crops and those offered by Nestle for his dairy to keep abreast of the new developments.

The fourth participant (referred to as P4) is a 30-year-old Black male farm manager whose father has been farming for more than 40 years. His peers and mentors indicated that he is doing well. He is particularly involved with mixed farming (i.e., a combination of dairy and crop farming). As a farmer, he had acquired his own agricultural machinery, many of which were the latest technologically sophisticated, as shown in Figure 4.3. Since land was never accessible to the black majority prior to 1994, the participant's father would till the land in the neighbouring country whenever he was on leave while working for a company inside the Republic. This farm manager left formal schooling at Grade 11. He feels farming is in his blood and does not worry about the criticism levelled against the trade by his peers. He shows commitment from a very young age. They own a 408-hectare farm, which is relatively small given what they wish to do. Thus, they are leasing land from neighbours with fewer resources to till all the land. They specialise in growing crops, mainly beans, maize, soy and even wheat (depending on the availability of land for lease); another source of income is generated from producing milk.

Furthermore, they do regular maintenance on the implements to prevent rust, for example. Similar to P3, they keep the farm expense records. His father is also a member of a farmer's organisation for union matters that might arise. They are fully involved with equipping themselves. The son frequently attends workshops at NAMPO (National Association of Maize Producers Organisation) in Bothaville, where new machines are introduced, displayed and sometimes shown how to operate them. One of the serious challenges they faced over the past three years on yields is that all the years were good, except for 2018.

Figure 4.3

P4's farming implements

The fifth participant (referred to as P5) is a landless Black male farmer aged 70 years. He leases several hectares of land from other landowners. This is a highly educated individual pursuing a Master's degree in agriculture at a South African university. He was a high school principal before he started farming. He has been farming for about 26 years and leases 200 hectares of fields and an additional 150 hectares that is used for grazing by his sheep and cattle. He does not classify himself as a farmer because he does not own any land. He does not stay on the farm and travels every day to and from work for about 60 km. He is involved with mixed farming, mainly crops, planting grains such as maize, dry beans and soybeans. He owns the basic implements to carry out his work. He personally maintains the implements, despite having challenges regarding the storage thereof against heat and rain.

The sixth participant (P6) was a 60-year-old White male. He willingly participated in the study but did not want to sign a consent form. He works on leased land of approximately 1600 hectares. After having trained and worked as an electrical engineer, his passion for farming got him venturing into an amalgamation of farmers. They collectively identified land lying fallow and started tilling and planting maize, sugar beans and soy. His role in the group of farmers is specialisation in sugar beans, both planting and marketing the product. He keeps records of the farm expenditure and is affiliated with VKB as a member.

The seventh participant (P7) was a Black male farmer aged 74 years who has been involved in other businesses, such as trucking. His primary education is only up until Grade 6. His love for farming started while he was still very young. They used oxen during those days to plough and plant crops. He claims that due to not being educated, he could not predict what would happen during the transition into democracy.

The eighth participant (P8) was an educated professional armed with a bachelor's degree in agriculture and currently serving in public service as a professional advisor for roundabout 13 years. He is a 35 years old Black male who initially received training in animal production but currently works with maize, wheat and beans. His passion for agriculture started at home as his mother, who single-handedly raised him, was also a farmer, planting maize, beans and wheat in a communal field. He received his secondary education at an agricultural school without making a formal application.

The next few participants were treated as a unit, as they refused to sign the consent form (similar to P6). However, they were willing to share their experiences briefly. I took notes to record the information shared as there was no time for any other form of capturing the knowledge they shared. The ninth participant (P9) was a young male White farmer in his late twenties with a tertiary qualification. He was involved in mixed farming. Unlike all the other participants, P10 (the tenth participant) was a male White livestock farmer in his mid-thirties with a tertiary qualification as well. The eleventh participant (P11) was a Black male farmworker in his mid-forties. He only had a primary education. His main job was to operate a tractor for ploughing, planting and harvesting crops in the field with a few other related responsibilities.

The twelfth participant (P12) was a 56-year-old Black male farmworker whose highest educational qualification was matric. He was born on a farm, where he initially developed a passion for farming during his childhood years. He was an interesting individual and very passionate about his work, which was evident in his verbal cues and emotions when exchanging thoughts; he was a true inspiration. The farm focuses on crops such as maize, dry beans, soy and wheat. However, P12 works for P2, who he views as the true commercial farmer.

The thirteenth participant (P13), a former professional nurse whose farming experience spanned 25 years, was a 64-year-old Black male. His farm had gone under due to challenges faced, especially the effects of a drought that struck the region in 2016. He owned a 356-hectare farm where a mixed type of farming was involved (i.e., crop production and a dairy). Crops planted were maize, dry beans, soy, sunflower and wheat. He was also skilled in repairing his farm implements. He held membership with AFASA and used to attend refresher courses offered by GrainSA. Due to time constraints, he could not formally consent to participate but still shared his ideas and skills in commercial grain farming. No recording of the interview took place.

The fourteenth participant (P14) was a 46-year-old Black male. He took over the farm after his father's passing. His mother was very involved in the final decision-making regarding the management of the farm. P14 and his younger brother were liable for the day-to-day operation and no other outsider in terms of workmanship was involved. A fellow farmer remarked that these siblings were hard workers, and GrainSA recognised their maize yield as high. This participant consented to participate briefly, as he had other commitments. He shared that they ran a crop farm, no livestock, focusing on maize, wheat, dry beans and soy. They used and managed their implements.

The fifteenth participant (P15) was a 44-year-old Black male. Similar to P14, he took over the reins after his father passed away in 2002. His highest educational qualification was Grade 11. His farm size is 566 hectares. However, he only tilled 136 hectares, with Bonsmara cattle grazing the remainder of the land. He also shared keeping records of the farming expenditure, with accountants responsible for balancing his books. He is a member of several organisations, namely Nerpu, AFASA, GrainSA, VKB and Makholokoe. Though he claimed to be an emerging farmer, he had

accumulated many implements needed to perform his job. He maintained them by doing repairs and servicing them whenever they were not in use.

4.3 Process of data analysis: open coding

Initial coding or sometimes called open coding, is “going through the data, line by line or paragraph by paragraph, attaching codes to the data and very much staying open, seeing what the data might be telling you” (Urquhart, 2013, p. 10). Neuman (1997, p.4 22) states that here the “researcher locates themes and assigns initial codes or labels in a first attempt to condense the mass of data into categories.” Open coding is a process of attaching initial labels to the data by reducing the data to small sets of themes that appear to describe the phenomenon under investigation. Corbin and Strauss (2008) assert that data are divided into segments and scrutinised for commonalities reflecting categories or themes. On providing the practical example of coding, Chametzky (2016) defines codes as one- or two-word ideas that cogently and succinctly explain what is happening in the data. Holton (2010) refers to them as the mechanism that allows you to get from raw data to a well-developed theory. This is how the researcher conceptualises the data (Glaser, 1992). Furthermore, codes are gerunds (i.e., verbs ending in –ing) (Chametzky, 2016). Chametzky also suggested the following:

> If writing the (interview) data on shorter lines is not possible, then analyze sentence by sentence rather than line by line. On the other hand, if you have a line of data that goes across the page, you could be in the situation where line-by-line coding might not work well as there could be several codes per line. (pp. 166-167)

After categorising the data, further examination occurs, searching for properties that are specific attributes or subcategories. According to Loy (2010), the data are engaging in incident-to-incident comparative analysis guided by questions such as: what category does this incident indicate; what property of what category does this incident indicate; what is the main concern faced by the participant; what accounts for the continual resolving of this concern?

Upon analysis of the core research questions, I followed Chametzky’s (2016) approach of conducting analysis in classic grounded theory by recording interview data in the first column of the table and then proceeded to code it in the second column. I captured either a sentence or a paragraph, not line by line, to get the

meaning in the text. In this way, the core questions that formed the basis of this investigation were identified:

1. What is a commercial grain farmer, according to you?
2. Which areas of competence should one possess to run a profitable grain farm?
3. How can a successful grain farmer be identified?
4. What is the importance (role) of grain farmers in agriculture?
5. What are the best methods of acquiring grain farming competencies?
6. What would be included in a competency model for grain farmers in South Africa?

The sections below provide a detailed analysis of the classic grounded theory where the constant comparison method is applied. As Evans (2013), Glaser and Strauss (1967), and Holton (2007) state, the constant comparative process involves three types of comparisons: (1) incident to incident for the emergence of concepts, (2) concepts to more incidents for further theoretical elaboration, saturation, and densification of concepts, and (3) concepts to concepts for their emergent theoretical integration and through theoretical coding.

As I addressed the core questions of my study, I started by recording interview data in the first column of the table. From there, I coded either a sentence or a paragraph depending on where the meaning lies in the second column (see appendices G to K for the open coding process).

4.4 Process of data analysis: selective coding

In selective coding, the researcher “looks selectively for cases that illustrate themes and makes comparisons and contrasts after most or all data collection is complete” (Neuman, 1997, p. 424). This stage begins once a researcher has organised overall analysis around several core generalisations or ideas (Neuman, 1997). Selective coding is when coding is limited to only those categories that relate to the core category (Corbin & Strauss, 2008). According to Poisseroux (2010, p. 27), selective coding leads to theoretical sampling, which guides sampling initiatives in support of the emergent core category. “The core category is a category within the data that the researcher consistently relates to many other categories and their properties. This represents how the main concern or issue is resolved, in turn, providing the foundation

of the emergent theory". Chametzky highlights that as a researcher develops categories, the core variable will undoubtedly emerge.

> In other words, you no longer code everything in your data; you code selectively for the core variable in order to enrich your core variable and its properties. From a practical perspective, though, there is no difference between open and selective coding: you are still comparing ideas, incidences, and codes with one another; then, you are writing memos. The difference now is that you are focusing on the categories and properties of your core variable. (Chametzky, 2016, p. 169)

This study concerns addressing the following research questions:

1. What is a commercial grain farmer, according to you?
2. Which areas of competence should one possess to run a profitable grain farm?
3. How can a successful grain farmer be identified?
4. What is the importance of grain farmers in agriculture?
5. What are the best methods of acquiring grain farming competencies?
6. What would be included in a competency model for grain farmers in South Africa?

While doing open coding as shown in Appendices G to K, five themes emerged from the gathered data, with each theme having a sub-theme(s). The five themes identified are:

1. Defining the commercial grain farmer
2. Competencies of a commercial grain farmer
3. Indicators of a successful grain farmer
4. Importance (role) of grain farming in agriculture
5. Methods to acquire grain farming skills

Each of the themes mentioned above is presented in Tables 4.2 to 4.6 as the continuation of coding selectively is performed.

Table 4.2

Selective coding theme: Defining a commercial grain farmer

Sub-theme: Self-efficacy/Ability

P2

- Being commercial is reliant on the ability to produce food
- That will feed you as well as others, that is being commercial because you are able to eat and even sell; I produce, whatever I do, I do with full force; When I want something, I ensure its accomplishment, so receiving that title is informed by my expertise

P3

- But now, when you are used to a thing, you cannot just let it go because of such.
- We can't just give in; we have to tolerate this and move on.
- Never look back because even here in the community, you need to hire them and pay them, move forward as a farmer, just move on and never give up as you will eventually achieve your goal ahead
- We are now used to working hard
- When the Lord permits, we must just work hard and never look back, that is what we are used to, it is our burden, we can't do otherwise, it is unavoidable, it is our way of life

P7

- Man, what I hear is that you are commercial if you are able to plant about 100 or 150 ha up to 200 ha
- Then if he has production there, then these agriculturists say if you are able to harvest that amount, you are classified as commercial that you refer to
- And move from the lower position.

P15

- No, I am not yet at the level of a commercial farmer, but the way I think it is a person who is able to plant about 500 ha
- Commercial farmer is when you have enough implements, let me say perhaps you have about four or five tractors and you know that you do a particular thing at a particular time
- When you say you plant, you do just that not that thing of using a ripper after that you come back to plant or spray, this one does this or you plant using three planters then you are commercial or you plant about six or seven farms even the cattle you have about 200 or more, even for your workers you have about ten of them who are permanent then you are commercial, but at this moment we are still very low
- No, it checks how much your work is able to cover
- It checks if your stuff is now fine, you no longer say I am going to hire, no you are now able to do all things by yourself, you no longer need any assistance even government assistance is not needed, like now as I say I want irrigation if you are commercial you only go to the bank and ask them to install whatever you like and you will pay, and you pay a certain amount annually.
- If you say borrow about R10 million, they never doubt you
- Your assets are valued so much if you say you want to buy this car
- They check what your security is should you fail

Sub-theme: Independence

P3

- you see signs because there is no one helping you, you are on your own, are independent, you are not looking at anyone, there is no like government will take care of you, no, you are on your own
- There was Agriqwa where we received loans which we had to repay, they would help us that way, but many could not survive but went under
- You can say you are commercial because you carry yourself, you need to know that if you want to do one two three, you should know how to do that, there is no one whom you would run to
- Yes, you stand for yourself, it will give tough time, but you need to come up with plans on how to manoeuvre through that

Sub-theme: Commitment

P3

- When you stumble and fall, never say anything; just rise and move on. Move on and say I am heading over there
- I arrived here, you know that, with just one tractor, a 165 Massey Ferguson, I will show you now, it bought all these other tractors
- It filled up all this space, when you hold on you move forward, never will you go back

P4

- Well, for me, what makes him stand out from other men would be his hard work

Sub-theme: Own or leased land

P5

- So the terms of reference from the minister said we need a commercial farmer to sit in that committee, then I was there before them and I said I am not a commercial farmer

- They said no you producing more than others, commercial farmer is not the question of producing to me, is a question of having land, I don't have land, so where do I commercialise my business
- Because I am seeing some challenges, first challenge is land, all the assets we have it, all the basic equipment we have them, all the basic implements, I have them, all, all, all. So that's what I say, give me land, I won't go next door, just give me land
- Possession of the land
- Then you can qualify, then you can qualify
- So it might be continuous, whether it is taken by the children, the grandchildren but that it stays in the family, it's sustainable, then I can call myself a commercial farmer. And they must work and produce
- That's how they even tell you when they sell the farm that it was in the hands of the family for the past sixty years
- It is still the same farm but running by the siblings of the farmer, working on the same farm, then you can say those people are sustainable
- When they come in, you find that there are tractors, cattle, there's sheep, theirs is to maintain them and carry on

P6

- We haven't got our own farm. We rent from others.

P7

- Then they call you a commercial farmer, but then they do not include things like tractors, whether you are using yours or hired that is not considered, they only consider that ability on a farm

Sub-theme: Turnover

P5

- So when it comes to turnover, because they have a tendency of measuring commercialisation in terms of the turnover, yes, I can qualify
- The turnover is the second question, yeah but you must have land first, but if you don't have land, working on contract basis, so can I call me myself a commercial farmer when contract expires in three years, the fourth year I don't have any land, am I still a farmer? I'm not, because I'll be out of business, I'm not, I'm not, that thing is not sustainable, it's not sustainable

P7

- The way I heard when we were at a certain place, two of our people have achieved that and were raised to commercial as they managed to plant about 150 ha on maize which they succeeded

P8

- It doesn't matter if a commercial farmer harvests 6 tons per ha
- And then if there is a possibility that a small farmer can also harvest the same yield even if he does not plough 1000 ha
- I think it will be fair to measure the performance of those two people

Table 4.3

Selective coding theme: Grain farming competencies

Sub-theme: Work dedication & Determination

P1

- A good commercial farmer, you should be dedicated to your work because farming has huge challenges

P7

- That is right, you should work very hard, need to sweat
- Need to sweat, sir, not always dusting off your hands, always dusting off dirt from your hands
- One grandfather's son once said to me, he has passed on, he grew up and was fortunate to be in Gauteng at young age though born on a farm, he said he saw an old man whose ears were soiled and said to me that you want me to work on a farm to be like that
- So, you need to accept that when you go there, you will be soiled

P9

- Have to work a lot
- Must not be lazy

P12

- Farming needs you to work very hard, very hard
- Yes, deprive yourself of the nice times
- Farming? If you are prepared to work, you will work
- You will work, you will work
- Take care of it and love it
- You will succeed but if you are a kind of a person who loves entertainment, forget it and never waste your time, I plead with you, sir
- You must be someone loving your job and be determined
- Farming sir can really make you happy you should not be dragging your feet to go to it no, no
- Be determined, you will succeed
- You see as you just pass by driving that this child is working
- If a person is determined you can see that
- Look at white farmers
- Those people really work
- There is time for entertainment but when it comes to work, do the work
- It needs such a person, be determined to work

P13

- using available resources wisely, working hard but smart meaning being time conscious to preserve moisture in the soil

Sub-theme: Planning

P1

- have a five-year plan perhaps where you want see yourself in that five years' time, ten or three years starting from now
- That is the thing that will push you if you have a vision and mission

P13

- Planning accordingly

P15

- For success, I will revert back to the issue that when you want to do something
- Plans succeed when you have something
- Yes, you cannot say you want to buy a car without anything in your hand, but you plan after having gotten something or like this season, I harvested

Sub-theme: Financial management

P1

- the skill to draft your own financial statements in order to determine if your business is moving forward, backward or stagnant;

P2

- To achieve that profitable farm calls for the right foundation
- That is your skill, you know the right stuff about the work you do; but it should not be something reliant on the increase of debts because you work hard relying on debts, it is the same as doing nothing, there is nowhere you will delight, debts can be incurred but not wholly relying on it
- We work so we can have money if you can work so that there is money that you have saved, you are working well
- Also you will need to find out ways of sparing the money you have, but work should just carry on because if the money you worked for, you cannot keep it there, it means your life is on a stand-still, you should know that money is made by another money

P6

- That's on that part.
- To start this business, to kick it off, that's the most negative thing I think that puts off a lot of potential good farmers because it's costly.
- The input cost is extremely high and it's very few people that can do it.
- Very few banks is gonna help you.
- You can have everything, but if you haven't got someone who can finance you and help you to get your first step, it's basically impossible.
- The input cost is so much, like sugar beans to give you an example, it is R14 000/hectare, so, you put 100 hectares it's R1, 4m.
- That's just your cost, it's your seed, it's your poison that… it's your fertilisers, and then your diesel for your tractors to work. I'm not even talking about your equipment.
- Yeah, that's the cost of getting it onto the ground. So, you see where I'm going with this?
- So, unfortunately, this game is: a small farmer makes no money.
- This is a game of volumes.

Sub-theme: Production/Planting skill

P1

- the skill of planting by attending courses
- if you do not have the skill in the farm, it is going to be difficult as the way I think according to me what makes young people to suffer is the lack of skill

P2

- attend short courses related to grains and know that things change and sometimes even the weather patterns change, so you should keep abreast of the times
- if you started those things right, how you ploughed; there is plough with four skaar and you may have a powerful tractor to pull it with four skaar plough, but not knowing to set the plough right you will find that it only tills with two

P6

- We specialise in this. You get the right cultivars, the right seed and the right conditions because different plants want different things. So you're gonna have to become a specialist in grain or whatever you want to be in

P8

- and the skills that I will talk about which I find very important that people who survive in agriculture are one, there must be production skills
- You need to know how to separate maize from each other within the rows and between rows
- just to cite example, you need to know diseases that are likely to attack your crops, as well as things that could help you prevent them
- So that skill forms the greater part of your personality of a person who will succeed in farming
- Because in farming you have only one opportunity of succeeding, there is no option B
- There is only one opportunity, it is to do the right things, the right way and the right time
- That is the only opportunity you have and if you do not have the right skills, you will do wrong things, perhaps at the right time, and that's where we fall
- So to me, knowledge that is related to farming or agriculture
- Whether you acquired it in a formal or informal way
- And the third one, he must have what we term production skills.

P9

- Know the soil, soil type, type of seeds, chemicals you want to spray, type of fertiliser

P11

- Skills required in successful grain farming are knowledge of suitable types of fertiliser as well as types of seeds

P12

- Never put in fertiliser only remember the soil needs to be taken for testing, take soil samples to determine what type of fertiliser is suitable for the soil
- And even these fertiliser salespeople do come and indicate that our fertiliser needs the planter set in a certain way so that it does not put in more or fewer than required
- They come and set your planter and tell that it needs teeth of a certain size so that this is how much you put in
- They do come and set a planter for you, I used to ask them guys why do you always come and set the planter every year?
- They would say, no sir, at times, you find that our fertilisers are not always equal in sizes, sometimes they are little bigger
- And sometimes a little smaller, thus we know that for this year they are of this bigger size hence the planter should spit out so much, I then said you answered me, do you get that?
- Sometimes you put in small quantities when it needs big ones, hence it will not succeed
- Even the depth counts
- When we plant maize, we use a ripper
- So it deepens into the ground
- You don't know it, they hold meetings there even the GrainSA and others are there

- We go to the fields there
- They show you how deep you should put in maize and find this type of soil
- When it rains too much, I would deepen this tool because beans do not need much water
- So I lessen that challenge
- When it rains the water runs in the furrows, I try to lessen that problem
- You see when I had deepened like this here (as shown on the photos)
- Water runs into the furrows
- So that much water never burden the beans whether it rains hard, water will be in the furrows and when it stops those beans are fine and the water also sinks down, you see?
- It is like a tiller, but it is not, it looks like a scuffle
- Yes, I would have used that one before because you would destroy them, so that will be a waste, there is a tool for that to help you destroy weed before they grow sideways, otherwise you destroy them

P14

- identifying suitable fertilisers for your grains

Sub-theme: Soil preparation

P2

- what did you do with the soil, what was the soil situation when you started
- it will require what soil do you plant it into, what kind of fertiliser, so he does not sell fertiliser, he only sells maize seed, you should know its quality and how to support it
- On fertiliser, know chemicals provided, each one has unique role; you should know that after 2 to 3 years, you should improve your soil condition, otherwise the level of acid increases and if it increases, then you should come up with ways to drain it out
- You see, you need to get lime and it is not an expensive commodity but you need to check where you are

P3

- before that, they need to take soil sample and take it to the testers to determine what it needs and what it does not
- Because if you just plant without doing that, you will harvest little or nothing, maybe as a result of soil acid
- You need to get lime because it is a key to a good harvest, if you had put in lime in your good soil, you get good harvest
- Without that key, your soil is locked and you will throw in huge sums of money and only harvest a ton or two; from there, they will advise you on the amount of fertiliser per hectare, they will tell you how many bags of seed, you get all the information from them
- You teach that here you use your disc, from there you plough, even there are sprays and insecticides you should show them that on this you pour in this amount and there that amount, the quantity of your water should be so much per hectare

P6

- Oh yeah, sure, you'll have to have good knowledge of first the ground, the plants you're gonna go and plant, it's maize, it's sugar beans.
- That's why we have broken it down.
- We specialise in this. You get the right cultivars, the right seed and the right conditions because different plants want different things. So you're gonna have to become a specialist in grain or whatever you want to be in.
- That's a specialised job, it's not just you plant, you must first do your ground, do insects.
- Yeah, you're gonna need a little bit of high-skill level as well because the terminologies that they use for plants is microbiology and things like that so you understand that you're gonna need a higher skill level
- You have to have a matric and at least go to a college.
- To understand because there's chemicals involved in this as well which you're going to have to understand (what's nitrogen? what does it do?) … each and every one of them.
- So, like I said, to break it down, you're going to have the ability to understand it.
- So, you're have to have post-matric, at least.
- I won't say that, but you're gonna battle. Look, there's lots of help, but you can't… you must try and identify something and know why it does that.
- But you get a lot of help from your neighbours and you ask as well, but you first have to have that understanding to understand it.

P9

- Know the soil, soil type

P12

- It is to prepare the soil first of all
- Yes, prepare the soil, and never plant when the soil is dry
- It must have moisture, when it rains after you have prepared the soil, that soil is able to retain the moisture
- How, let me say you had used a ripper or you ploughed
- If you had levelled it well using a disc
- No moisture can escape there

- It will keep and by the time you get in with the planter
- You can't plant in the dry soil sir, no
- Without preparing your soil when it rains, it will just flow without penetrating the soil, but if you prepared it, having used a ripper or something else
- It is going to be fine and preserve it so nice
- You first have to kill the dirt and use the ripper first and after that, you plough
- And then you level it well, then you are done with it
- When it rains, it will preserve it
- You will notice after a month or so when you dig up with your finger that it is so wet there
- Even your planter should deepen so much, you will find your maize even if you don't use a ripper you find your maize so small and unable to hold on during strong winds, your maize will be put down
- You will lose, once it has lied down, it is rotten already

P14

- Soil preparation, which includes putting in lime if necessary
- no sleep lover but hard worker

Sub-theme: Time management

P1

- because what mostly important is knowing when is the time to harvest wheat you harvest wheat, you should know when it is time to harvest dry-beans, you harvest dry-beans

P4

- The one we started explaining first when we said you need to do your things on time
- Yes they should always be in good condition and you always are punctual on your work, not be late or too early, just be on time

Sub-theme: Passion

P5

- No, it depends on the passion of the business, the passion
- If you hate to work with soil, you will never plant anything

P6

- So it's really specialist, so whatever you're gonna go and do whether it is dairy farming, you must identify grain farming, bean farming, you're gonna have to become a specialist.
- But if you're doing it and you're not passionate,
- You want to know something about ground; you want to know something about plants; you want to know something about tractors and the equipment that you use; you want to work with people…
- Yeah, it is broad it's a business. It's a complete business, so if you don't even want one of those things, then you're gonna fail, it's a chain: every link must be there.
- If one link is out the whole thing collapses.
- Yeah, that's as simple as I can put it.
- If I see someone shows me interest and wants to know and asks a lot of questions and wants to know of a specific thing (it doesn't matter which areas of agriculture) and make an effort, that is the first sign that they are interested in such a thing

P8

- I think farming needs someone who is not driven by benefits, passion is part of farming
- Passion, why do I say that you can plant something and that may not grow because of environmental factors related to drought
- You still need to persevere under such circumstances, you cannot just throw in the towel, so anyone venturing into agriculture I would encourage people to go there as a result of being driven by passion for your acts
- Never be driven by emotions when doing that, I am not sure if they are all, what I value is that one should be driven by passion and be patient enough to get rewards because it may take time

P10

- Successful farming requires focus and passion like any other business

P12

- Farming is so nice, I love it with all my heart
- No man can cheat me with farming
- What I also like is wheat, these coming months are for it you will see
- Yes, May/June, you will laugh as you get there
- Without rain, you will see it as you go past it there
- You will see man
- Soya that we produced there man on the farm
- Let me check for you on my phone here, I do laugh alone when I check it out
- Here I am (he proudly shows me his photos in the fields where they had grown plenty of beans)

P14

- love for tilling the ground and particular grains

P15

- In order to do anything, you must love it first, my brother
- It is to love it and have interest in it like any other thing, say having a dog
- If you do not like it, you are not going to take care of it, but if you harbour its love
- Never want anything bad to happen to it, then you are going to take care of it
- But besides that, there is no day where you will have love for it

Sub-theme: Locality/local best practice

P5

- Point number two farms are different. The farms, the farm itself is different from another one, how, because of locality
- Eastern Free State is different from central Free State. Eastern Free State borders Northern Natal, some influence of rain because of Natal, you see those are the factors. But the major cause the farm will dictate to you, the farm itself will dictate to you what kind of business to do there, not yourself. You can go to Memel now, they can give you 3000 hectares, only grazing, no fielding

Sub-theme: Emotional stability

P1

- Sometimes you will find that like for the past three years we experienced drought; So if you are a young person like me you quickly give in

P6

- But in farming, you need to also have a certain personality because there's lots emotional ups and downs in farming, for instance, you see this crop here, it might fall flat to the ground, how do you react?
- So, it can put you out of business in twenty minutes.
- You're gonna have to.
- And also, right through your life, you gonna need to able to handle disappointments because you're gonna be disappointed in farming, because you're gonna get a drought, do you know how bad it is to look at your things and they're dying?
- You can do nothing.
- You know how bad it is to look at your animals and they're dying?
- You can do nothing.
- You know it eats you inside.
- So, you're gonna get that in your lifetime of farming.
- So, as a person, you're gonna have to be sort of strong emotionally.
- If something small happens, you don't just give up and run away.

Sub-theme: Humbleness/ Arrogance

P8

- Before we get there, people's backgrounds differ
- There are those who go to farming naturally, em farming will lead you to it as a result of your social needs as a person because of hunger
- There are also others whose background is that they have money or savings which they want to invest in farming
- Such people's attitude to farming starts from a totally different level, completely
- A person driven by hunger is humbled by nature if you want personality
- So he will do everything that is necessary to get food
- If you train him to be productive, he does that under the circumstance that I have to
- But he who is loaded with money is not humble is arrogant
- But the need to perform better is driven by money he has at his disposal, normally people with money coming to farming who are arrogant
- I think that is a personality that is relevant when it comes to commercial farming because the role of the game there is competition
- So in most cases, people with money
- They bargain better than people who went to farming because they had no income or no food

Sub-theme: Patience

P6

- So yeah, it's very lucrative if you've got patience. If you farm well, you make it lucrative yourself.

P8

- These two people what I see farming requires from them is patience, that is the first one
- The second one, it is not possible to excel in farming without acquiring or developing certain skills
- What matters the most is a person's skill
- Yes, both of them either arrogant or humble, they need to have patience because in farming the money you invest today, you can only get it after 5 years
- To be honest, the way it is if you start to invest today
- You can confidently say if things go well for you, it could take about 5 years before you get your returns you invested

- That is how things are. Another thing that I can say is related to one's personality

P15

- No, you will tolerate because you tell yourself that I only lost this year
- It like saying this season hail damaged my produce and insurance settled my debt
- I never worked this season, but I am going to start afresh and I do not owe anybody

Sub-theme: Intelligence

P8

- Before you ask that question, another thing that I am not sure if it is part of personality, but I still believe that you still need a certain level of intelligence to survive in farming
- You need a certain natural intelligence
- No, that you need, in most cases, things that you will encounter as you plough or breeding animals
- Will force you to take decisions always that you had not planned for
- Because it is not written on stones
- Farming is not something you can say is crafted in stones
- This year it may rain early and the other year late
- If you do not have the intelligence to learn those things yourself
- Then you cannot make decision you are bound to make under different circumstances
- You need to have intelligence, I noticed many people are into farming who have resources but unable to co-ordinate all the resources they have for the benefit of producing
- Some of them are better off
- But simply because they don't have the knowledge and intelligence to utilise those resources they become unproductive

Sub-theme: Weather knowledge

P1

- attend short courses related to grains and know that things change and sometimes even the weather patterns change, so you should keep abreast of the times

P9

- Know about the rain, know when it will rain
- You must know the weather, it comes with age

Sub-theme: Human skill

P6

- You want to work with people…
- Yeah, it is broad it's a business. It's a complete business, so if you don't even want one of those things, then you're gonna fail, it's a chain: every link must be there.
- That's what we're doing with our workers, we've got that going as well, we say pick a field and they can pick a field and say that's yours, we plant for you, wheat seed everything.
- And so when we do harvest, they get a share between them. So, that's a way of starting something, but it's also still small, but we're doing it for our staff.
- That's more as a bonus for them because they work very hard.
- Their hours are long in planting time. So that's from our side, but they must look after it.

P9

- A skill to work with people

Sub-theme: Mechanical skill

P6

- It's another thing when you want to become a farmer, you have to be mechanically orientated as well to be able to work with your hands.

Sub-theme: Technology/Work smart

P6

- Because technology improves so that's why I say you must go with the technology.
- So, the first generation, they started with cows ploughing with cows, the second generation already got tractor.
- So, if you look at this and technology, you have to keep up with it, and I think in future it will be just using computerised.
- I can see your cars is computerised, so tractor is computerised, you get the sprayers now have monitors, they spray your crops, and hands-free GPS tractors.
- I don't know where the future is gonna go, but you have to stay in touch with it.

P9

- Work smart

P13

- using available resources wisely
- working hard but smart meaning being time conscious to preserve moisture in the soil

Table 4.4

Selective coding theme: Indicators of grain farming success

Sub-theme: Financial stability

P1

- Is if you are financially stable
- You have experience, like now on drought issues, you know how to channel your affairs

P5

- No, success, you must always have a positive balance in any business

P12

- Settle debts, even tools of trade are now enough
- That this man is going somewhere
- When you enter the fields we check that this man really has achieved something
- If a person does well, you will see in a year or two to three that this person is going somewhere that there is a change in the fields

P15

- You know my brother, the question of skill is not so important, the issue here is the question of funds, we do possess the skills as a result of training we undergo
- If you say today you know this, they come and inform you that we no longer do it that way, there is now a new way of doing it
- The only trouble is funding, even when you present your stuff, the funders should be convinced that really this man…
- That is the only thing no other serious matter, even when you work it is not yet a farm that can generate everything by itself, I can thus say it is still developing
- If not, then it supposed to be making an income on monthly basis
- For now, its income is only generated after harvest

Sub-theme: Farming implements

P2

- A successful man, you see that in his work he has everything that would help him perform his work
- It is true we have many wishes, but you should be having tools that would help you carry out your work, then you are fine
- Tractors I have here as you can see, the likes of Landini and all others, I do not want the 4x4 tractor, well I have only one 4x4, the rest are the ones I afford and are suitable for this area

P4

- For me, they will notice the implements
- To attain them

P12

- You must arrange tools of trade, so that you have them
- Even if you buy them by credit, it is important
- If you buy a tractor on credit or diesel
- No just leave, the fact is at the field, we need tractors to line up
- Then we say you got it, that is how we want it
- But staying in one place with such a single tractor, no wait a little
- Exactly, you know that for your work to improve, we see the tools you use
- It shows that this guy is going somewhere even though first he had been struggling in the previous years, but he will get what he aspires for

Sub-theme: Ability to help others/Altruism

P2

- Success has many dimensions, most importantly is whether you are able to help other people, not only looking after yourself and then claim to be successful, in what?

Sub-theme: Output per unit area

P7

- Well, signs are his planting succeeds, his tons as well like if he makes 5 to 6 tons per ha of maize
- If he planted soya, it should give him 12 tons per ha
- Beans be able to make 14 tons per ha at a minimum and from there, you are were talking about
- If you can reach up to 6 or 7 ton per ha or even get up to 8 to 9 tons per ha on maize
- So I think it starts there because sometimes it would be that 150 maize and also 50 of beans which make it 200

P8

- If you want to measure if a person succeeds in farming
- I say to be realistic, you must measure his output per area
- Yes, we need to measure him according to the area he occupies

- It doesn't help even if we give you many hectares but your output being below the norm
- So I will value farmers' success based on their output per unit area
- Then I will be saying this person is succeeding, my understanding based on what type of a farmer he is whether being a small farmer able to produce in a similar way as the big farmer, to me is a success
- Because we cannot say the size of operation no, success would be can this person be compared to the one we say is successful, normally they are the ones successful, but I can tell you that not all of them are
- Sometimes they are not productive; they are boosted by their scale of production
- Not all big farmers are productive, but because of their scale, their risk is reduced
- Their risk is reduced, so they cover themselves up by ploughing a large area
- Those are the people whom we say they have capital perhaps history in capital
- They are able to use the capital in order to compete
- But to someone without capital but being able to produce at the level of a big one per unit area to me that is a success
- I don't want to say farmers' success be dependent on materialistic things, let us try to be very objective when talking about this issue
- And say firstly why is this person having animals or ploughing, if the true aim of ploughing is to produce food or to multiply it
- And multiplying food has its own principles that if a certain plant has so much potential of multiplying per unit area
- We must always remember that eh, if a farmer is able to exhaust the available potential of the natural resources
- To me, that is success, remember his efforts and contribution to achieve, that are the ones that will tell if he will achieve or otherwise
- So I don't want to view it from the angle that a farmer is able to build his own house
- Being able to take his children to school, able to pay his policies, able to buy his car
- I don't want to view it from that angle because not all people have the same or equal drives, so that will be a weakness on my part to view success on things one can buy
- But to me, it is, given all the challenges we talked about of climate, environment, capital, the political if a farmer can be able to produce a high yield
- Above the norm, to me that will be will be success, then it simply says even if you are young
- But because you can master the dynamics of production, if we give you a large area, it will not be a wasteful exercise
- So I can appreciate basing a farmer's success on his productivity

P12

- We will see through what your yield is from the fields that now you are successful, what you take out of the fields that you are now making it and are able to settle many debts

Table 4.5

Selective coding theme: Importance of grain farming in agriculture

Sub-theme: Food security

P1

- their role is big in agriculture, for example, we know that Free State is the core of agriculture in the whole of South Africa and if you check most of the farmers the commercial farmers are the one leading and balancing the economy as the statistics tell, it is said Free State is the core

P2

- if you are in that side of work, it is production, the first thing is production and that production should be in a position of sustaining you as well as helping others

P3

- But as for us, we are really trying to feed our nation

P5

- No, they are food suppliers; No, no, without them, there is no food
- That's the bottom line, they are food suppliers
- The Free State as a whole, 33% is from agriculture

P6

- It's massive. It's food.
- Yeah, Your maize is food for people (that's white maize), yellow maize is for animals, sugar beans is a big market food; so it's sunflower for oil, soy for oil and also for food for animals.
- So, it's food.

P7

- Yea, from there you have a production after you have harvested, you will have some profit, I think that is the role of farming and because you and your workers are planting for society, I do not know if it answers your question
- You do not plant for you and workers but for the broader community
- Not at all you are not yet there, you should go further and feed the nation, this also should offer the other fraction of people jobs

P8

- Grain is our staple food as Africans
- So, according to me, the production of grain, if done accordingly one there cannot be hunger, so grain farming is against hunger
- Or it ensures that people are food secured
- Grain again or let me put it this way, grain fights hunger in two ways
- One, if a person produces grain for home consumption
- At the level of the household, it halves the rate at which hunger would attack
- Or for animal feed and we use it to make food for the people
- Maize meal, cornflakes are made from maize

P12

- We do not use it that much there, so as far as I am concerned, the key role played by grain is simple, is to fight hunger
- It is food security, broadly speaking the reason it is said people must get employment I think why it is like that
- Grain per se is hunger attacker and even food directly, so that is how I understand the role of grain farming

P15

- It is to feed the nation
- I can say it is to feed the nation and the outside world
- Because without food, we cannot survive, without maize, we cannot have food
- We may have money, but where will we buy with it
- We need to buy maize meal and something else, you know grain I can call it the nation's spine
- Yes, because if we all quit ploughing and go for livestock
- We cannot eat that meat alone without pap

Sub-theme: Job creation

P7

- You are hitting me there, role of farming is when, how can I put it, role of farming as you plough
- You are going to offer people jobs.

P8

- It can be able to create jobs for a mass of people in different levels of the value chain of grain, remember that maize is used for making cattle feed
- So grain per se is the creator of employment in the different value chains of grain, from primary production, processing, we are not that much involved in using maize for energy

P12

- Many jobs are created, sir

Sub-theme: Wealth or income generation

P8

- But if a person produces at commercial level, many opportunities can occur, one income will be generated for the producer and then if it is in a massive scale
- Not everyone will get an opportunity of being a farmer that we must understand, now if we can use farming to create the opportunity for other people to earn an income
- At different levels of the value chain
- And that is the only reason why I produce maize, for food as well as generating an income

P12

- As you are queuing there because men do queue there, that thing is full so
- When they are at the silos there, they do ask, man how you are, one would say I think in a week or two I will be finishing, they say yea
- Those bosses say that and never say I am finishing up, no man so soon
- No man, you should be off-loading tonnes after tonnes
- It should be a load after load
- You work and you will see especially maize
- It can lift you, you should see them as big corns hanging there in the field
- As the combine goes this way, then it is full, then you are the man
- I would go this way and it is full and I go back to off-load

Sub-theme: Economic growth

P12

- I can say even the nation's economy increases

P15

- Yes economy

Table 4.6

Selective coding theme: Methods of acquiring grain farming competencies

Sub-theme: Early child exposure to the farming environment

P1

- start our children from elementary level, if we want these children to the best commercial farmers in twenty years' time, we should ensure their foundation is right; by a right foundation, I am referring to a situation where maybe as a father to a three-year-old son
- I should be going out with him so that he could have passion for agriculture, I think that is what caused the white people to attain the stage they are as commercial farmers

P15

- If you have a child and leave him or her at home, he or she knows nothing
- I say a child or children, let me put it this way I actually had been coming here on the farm as a child I had been rejoicing at driving tractors, not knowing that one day I would be responsible
- And I saw this as something so simple that even planting is not a problem but unaware of the costs involved, unaware of how long you wait

Sub-theme: Person's own preferred method

P2

- no best method because you need to know that these things change year in year out
- The best method is the one suitable to you

Sub-theme: Openness to mentorship

P2

- be in a position to know that you can be guided and you also be able to guide others

P4

- I think if he may approach them because asking is another form of acquiring skill

P6

- I won't say that, but you're gonna battle. Look, there's lots of help, but you can't… you must try and identify something and know why it does that.
- But you get a lot of help from your neighbours and you ask as well, but you first have to have that understanding to understand it.

Sub-theme: Practical training

P3

- If you read from books, you will forget it, he has to be in a job and be determined

P6

- So to answer that question: do a course that can give you practical help as well because I feel your universities (I'm not mocking universities, my kids all went to university), but I saw it afterwards, when they are going into the working environment, they haven't seen the thing they learned about, especially farming because it's so hands-on.
- I would suggest to get a solid young man, competent to start, he needs a lot of practical experience in this course that he is doing and physically see the things because it's all about seeing things.
- You come and you have to work your fields every day because you need to see the insects in there, and the plants that are taking strain, or there's a lot of grass, if I never came here, the grass would be tall.
- It's very hands-on.
- The course should be structured to be very hands-on and practical because it's a practical thing.
- You have to be hands-on, you have to be here, and you have to ensure that your stuff is proper, then you'll get rewarded for that.
- It's like selling chappies: You sell one chappies you're not gonna get anything… so that's the same concept.
- So, you need to do it in volume. And the bigger you are, the more expensive it is, the more tools you need,

P7

- They need to go to school, but school alone is not enough, there is this thing I do not know what you call it after attending school?
- You call it practical in your language
- What you were reading in books should now be done practically because this book cannot get in the field
- You need to practise what is said, yes, that is right, yes, it now comes to being

P8

- There are many people who went to agriculture schools
- But they don't have the skill to practise it
- That is where I said to you farming to me is a lifestyle, if you don't practise it you lose it
- So it doesn't help to have gone to school but not practise what you learned at school

- You will see once you start practising everything falls into place and your understanding becomes even much better when you practise than reading
- I don't know if I would saying they are the best, but what I can say this is the best teacher, you said you look for method, didn't you?
- The first one is practice
- Practice makes perfect
- Mind we look for the best method if you want to be the best farmer
- You must practise to be a farmer as far as I am concerned
- What does practice mean? If you want to farm with cattle, do cattle farming
- There is no other way do cattle farming
- And then training can better advance a person's understanding
- In order to be one of the best producers
- Training, I want to be honest to achieve the level you asked me when starting this interview as how can we encourage or motivate young people to be farmers?
- The time I have worked here in government, I learned only those two things that nothing will liberate our people in agriculture without education
- And training followed by practice I advocate only three things, train, practice and then get someone you can call a coach or a role model
- That we will need if we want to build a developed society because in my Sesotho, we say if you are riding a horse alone, you could say it runs fast as it goes past the grass
- So you need to get a role model in order for us to make a continuous development of our practices, we need to get a person whom you look up to
- And say you want to be like him so you can advance, as far as I am concerned the best way of making farmers is practice
- And then training will increase understanding, training will not make people farmers, but it will expand their understanding of some of the things they see or do
- So that when they perform, they do so with a better understanding

P12

- You know to persevere farming, a person must walk with someone who farms
- You see, when you walk next to him
- You will learn many things and you will develop love for this
- But learning only what you do not love, aikhona, wait a bit
- Aikhona! I used to see young people walking about here on farms wanting to work here
- That was a good thing coming like this
- No, no, you waste your time.
- We milked, we did so many things about farming and we were doing them practically unaware that we do them so
- After school, you would find us on tractors
- We knew all those things, digging up potatoes and all these things, you cannot cheat me, no I refuse
- You cannot because you know our children
- To show him how a farm operates, you need to encourage and show him the importance of a thing
- That the importance is to do this and that, it because I see white people's children are so determined
- They take farming seriously
- Really we black people, when you check that now that these children are not going to school
- Do you know if you take them and go and work with them there?
- They will love it, I am telling you they will love it, they will love it really
- Yes, it because as we were growing up the farmer whom we were staying with
- When we are back from school, he would put us at the back of his van
- And would just leave there in the fields and by then tractors are ploughing going up and down
- And we are so eager to jump on top of them
- You would find this wheat combine here, it would make you mad
- I would test any of them, be it of wheat, maize, beans, sunflower, soya, no man, no
- That is what I loved about farming, that way, we would spend much of our time in the fields
- All these chaps would now bother you by asking, when are we going there?
- Exactly, they even enjoy milking cows and they kick them there
- You put in love like that, that how we loved farming
- You see these people of GrainSA?
- Those are good people, they show their stuff on a television
- Those guys are good, they show you that this thing is done this way and that other one that way, never take that it is your own garden and you want to plant cabbage, no wait
- They will empower you, they will say, man, we are paying you a visit
- They will help you those guys and you will succeed
- You will succeed, their training is free of charge
- They show you that man do this, everything because there are many mixtures

- In so many things they will help you that man do this, do that

P14

- Learning through practice
- make time for refresher courses as technology changes swiftly

P15

- It is practical
- Yes practical, there are those who come here from schools
- Yes practical, it is the first one
- If you have a child and leave him or her at home, he or she knows nothing
- I say a child or children, let me put it this way I actually had been coming here on the farm as a child I had been rejoicing at driving tractors, not knowing that one day I would be responsible

Sub-theme: Educational institutions

P5

- Agricultural academies, universities, all institutions that are prepared to train you, you must go there
- Institutions, training, training, training, the best thing. Why training, good methods of planting give you high yields on a small scale
- If you don't train people, they think that in order to yield more, you must have a larger space, no, no, no; Profitability starts with a smaller scale. If your hectare is giving you 5 ton
- Then that is good for you, but if a hectare gives you zero comma one or comma five, then you are wasting land

P6

- Yeah, you're gonna need a little bit of high-skill level as well because the terminologies that they use for plants is microbiology and things like that, so you understand that you're gonna need a higher skill level
- You have to have a matric and at least go to a college.
- To understand because there's chemicals involved in this as well which you're going to have to understand (what's nitrogen? what does it do?) … each and every one of them.
- So, like I said, to break it down, you're going to have the ability to understand it.
- So, you're have to have post-matric, at least.

P7

- You should know from here to the gate over there how many of the seed should be planted, so all those things require schooling
- Someone once made a fool of me where I even regretted not being educated, I knew that a bag of maize seed covers about 2 ha
- So this man asks me how many population am I going to plant, I then thought this now requires some school and he takes me for no know-how
- Now he takes me to the population
- I then said it needs education, today's farming needs education
- You need to know even the insecticides, truly whites did show us
- When should you spray using which insecticide, even when winter gets in, you should know what changes to make, as all that is related to education,
- Mainly these chemicals to spray, especially beans you can be scared when these whites tell you about chemicals used, I wonder, let me show you some paper here
- I just want to show you that these things now need educated people, you see here they are even not enough
- You see all these are chemicals you are supposed to know how you should mix
- You see that thing, you must know how much should you pour in
- You see this two-time spray, all those things what I mean is that they must be known by someone who has been schooled, you see?
- All those insecticides you must know how to use them, there are so many of these things that exceed what you see here, especially in beans
- Yes, these are things that you should know at least what you are going to do
- So when you check, it really needs one to go to school
- One really needs to go to school, and when he comes back to these dealing in chemicals, training there is necessary
- Where they would show you how a thing operates because, if are not trained, chances are that you will burn maize or beans when spraying
- Right there is that easy way out from the one you buy chemicals to calculate for you that when your spray is like 800 litres you should pour in so much of this, all those things you should note down but know them so that when he is no longer there, you are able to mix on your own
- Yes, but the truth is this thing needs education

Sub-theme: Refresher workshops

P2

- But what stands out is that they have their own unions where they receive training on the new methods of doing the thing I am used to, so you need to come closer and seek help and never work hard unnecessarily because

sometimes what kills us is being used to working in a particular way, since old ways delay and have the understanding that having things like farmer's day

- Such things are sources of information
- As well as kinds of equipment where you see that this has improved the previous one and notice your environment needs such, so that is where you derive determination of improving your work

P5

- Another thing is farmer/s days. You call them boere dag
- That's where you get diamond.
- That's where you get diamond, it is not in the book

P14

- make time for refresher courses as technology changes swiftly

4.5 Process of data analysis: theoretical coding (development of the initial model)

In theoretical coding, the categories are related to each other and the relationships between them are considered. Therefore, this is the critical stage where a theory is being developed, where constructs are found and relationships among them determined (Urquhart, 2013). Theoretical coding refers to how substantive codes (codes generated thus far pertaining to the area of investigation) are then related to each other (Corbin & Strauss, 2008). In classic grounded theory, this is the final stage where a theory is generated. The researcher conceptualises the core category into a substantive theory to explain the phenomenon as revealed and grounded in the data. Once a substantive theory is generated, the researcher may turn to existing literature to support, compare or challenge the emergent theory (Poisseroux, 2010).

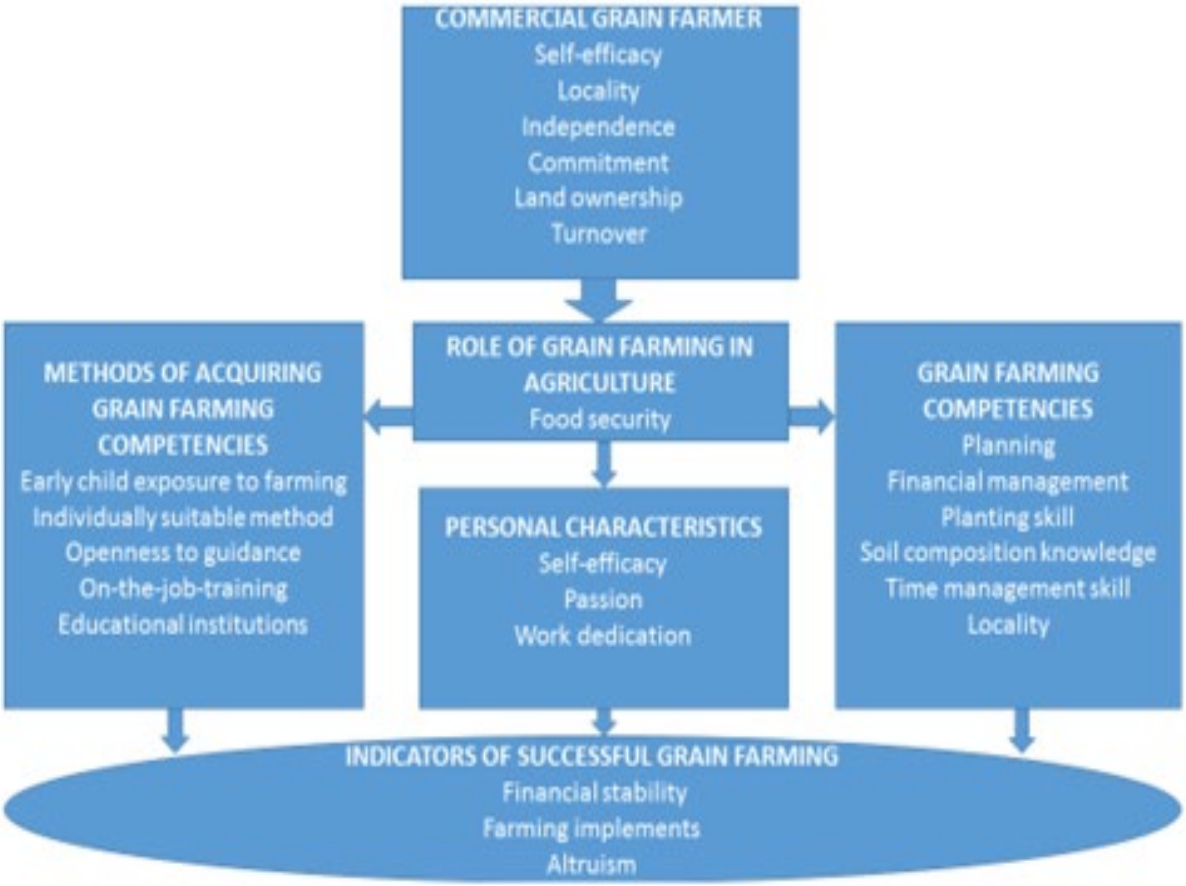
Creswell (2009) states that themes can be connected to a storyline in more sophisticated studies, eventually developing into a theoretical framework. Since the purpose of the current study was to gather and analyse data that would help me develop a competency model for commercial grain farmers, I had to find methods that enabled me to transform and evolve data into the required model. Nieuwenhuis (2012) indicates that once the analysed data is structured, the investigator needs to develop a visual representation of the categories. According to Mathafena (2015), Buzan (1989) stresses that text is a useful vehicle for presenting information, but often pictures can perform the same task more concisely.

While conducting the analysis, the memoing process revealed that some questions related to personal or individual characteristics are addressed under different headings. Therefore, it was grouped into a separate category, as shown in the initial competency model for commercial grain farming (see Figure 4.4). This is

Part 1 of the presentation of a newly developed model and still needs to undergo verification by the experts in the field. Upon verification, it will be presented as a final model in Part 2.

Figure 4.4

Initial competency model for commercial grain farmers



4.6 Summary of practical data analysis (PART 1)

In grounded theory, data gathering and analysis are conducted simultaneously. Therefore, I followed coding phases: open coding, selective coding and theoretical coding, a critical stage where a theory is being developed. According to Urquhart (2013), a bottom-up coding is the only approach to coding suitable for grounded theory research as it is used when codes are suggested by the data and not by the literature. Below is the continuation of the current chapter in the second phase that involves verification of the initially developed model for commercial grain farmers.

PRACTICAL DATA ANALYSIS: DATA VERIFICATION (PART 2)

4.7 Orientation to practical data analysis and verification

Part 1 took place in 2017, and the second phase of practical data analysis in 2020. Part 2 was to test the initial model, which further required me to identify experts who would participate in the second round and conduct interviews with them regarding what had developed from the initial model. I used Nuthall's (2006) identification of experts as discussed in Section 1.3 above with the assistance of GrainSA. This section advances the data analysis process from developing the theoretical codes towards testing the credibility of the emerging theory or hypothesis. Rolfe (2004) in Mathafena (2015) describes the process of ascertaining the credibility of qualitative research as conducting member checking (returning to the research participants following the data collection process) and using an experienced specialist to review the data to ensure that the researcher has analysed it correctly.

4.8 Testing the initial model

The initial model was developed in 2017 following semi-structured interviews conducted with 15 participants ranging from farmers, farm managers, farmers whose businesses went under and professional advisors/experts. The researcher may gain full insight into the complexity of the phenomenon by obtaining information from multiple sources and in numerous ways. Triangulation occurs when data is collected at different times (Mathafena, 2015). In this study, I achieved triangulation by conducting follow-up interviews at different times, using various sources of data, such as interviewing people who were not involved in the initial interviews in 2017. I also used triangulation to determine the credibility of the information shared by participants in the first round. Mathafena (2015) indicates in her study that triangulation can be performed in two ways, namely methodological triangulation and data triangulation, where data triangulation uses face-to-face interviews, documentation and observation. I used data triangulation by conducting face-to-face interviews.

I provided the participants with a document outlining aspects contained in the initial model. This took place at their work and enabled me to secure appointments for the following week. I requested their input about the initial model and to prepare the following questions for the interview:

1. What is missing in the proposed model?
2. What should be added?
3. What should be removed?
4. Does the model cover all the relevant themes related to competencies in commercial grain farming?

4.8.1 Sources of data

I used three one-on-one interviews with a participant from the private sector and two from the public sector as sources of data. Table 4.7 includes a summary of the demographic information of the mentioned participants.

Table 4.7

Summary of the demographic information of research participants in Part 2

Interview date	Participant identity	Participant status	Age in years	Race & Gender	Educational qualification	Years of experience	Sector
03-03-2020	P16	Professional advisor	55	White Male	Bachelor's degree in agriculture	25	Private
03-03-2020	P17	Professional advisor	40	Black Male	Master's degree in agriculture	7	Public
03-03-2020	P18	Retired professional advisor	70	Black Male	Diploma in agriculture	44	Public

4.8.2 Profiles of the research participants

The first participant, P16, was a 55-year-old White male with a degree in agriculture, practising for about 25 years in the private sector. As a professional advisor, he has been involved in supplying suitable fertilisers and grain seeds for local farmers.

The second participant, P17, was a 40-year-old Black male with a postgraduate degree in agriculture serving as an advisor in a government department for a local community that mainly produces maize and dry beans. The third participant, P18, was a 70-year-old Black male with a diploma in agriculture who practiced as an advisor. He also worked in a government department for local farmers producing maize, wheat,

soy, sunflower and dry beans for about 44 years before retiring. Following Nuthall's (2006) advice, the three participants were seen as experts in the field given their knowledge and involvement in the service they render to their clients. Additionally, their individual reputation and the level of recognition their organisations have in the sector made them stand out.

4.8.3 Process of data analysis: selective coding

Prior to beginning the triangulation process, the document handed to the participants had already identified the themes and sub-themes of the model in an elaborate format. Therefore, the duty of the participants was only to answer the four questions mentioned above during the interview, subsequently skipping the initial coding process and conducting selective coding from the onset. I conducted one-on-one interviews with each participant, which also followed a semi-structured format as in Part 1. All interviews were recorded and immediately transcribed. However, each participant listened to the recording to confirm their assertions. The interviews took place over a weekend and were held at the participants' homes, as this was the only available time they had. All the interviews were conducted in English, and transcriptions were done verbatim. The section below illustrates an analysis of the data using tables per theme.

Table 4.8

Selective coding: Defining a commercial grain farmer-2

P16:
• According to me, commercial farming is not what we see in the field, commercial farming is the thinking in what we see physically • That is commercialisation. The thinking that has been put before implementation of the things we have been put, that is where commercialisation starts because not everything that you see on the lands was done through the commercial mind-set • When we were talking about planning, people who are not commercially inclined, their planning will be weaker but people who intend to go commercial, their planning will be strong • Another thing I cannot see here on commercial is that it survives on the scale of operation • So if we define it as a large scale farming operation, but before we look at size, someone with lots of money can do farming thinking that he is doing the right thing • I want this thing of the right thing to be a pillar of commercial farming because a lot of people do not do the right things • Someone may have a lot of money have large fields and big land but not doing the right things and that may cause his downfall in farming, so that is not a commercial mind-set • A commercial mindset must say you do the right thing, at the right time in a right place, only • That is the only opportunity you have to survive in farming • So as far as I am concerned, all those issues are correct. I just want to add this one of the scale of operation • Scale of operation in agriculture survive on a large scale of farming and then to commercialise or a commercial mind-set is important because there are people who can make a lot of money on a small piece of land depending on what their thinking is in what they want to do, so commercialisation is in their heads • To persuade young people to venture into farming, we must sell a commercial mindset into their thinking

- So that they can see the opportunity to generate income, opportunity to own something, opportunity to acquire wealth, opportunity to contribute meaningfully in the economy
- If we want to encourage young people the mindset, we need to sell to show them the spin-offs of farming with the mindset of going commercial

Table 4.9

Selective coding: Grain farming competencies-2

Sub-theme: planting skill

P16:

- Well, maybe let me admit, if a person plants, people use different ways of planting in different times of planting and even the way they will use to plant will also be different
- So I take that as an important skill, let me make an example if you have not applied insecticide with a spray and find it is not working and it does not work, you will not know what made the chemical not to work, but if you spray in the burning sun or early when there is dew
- Even when it had just rained
- When it is very dry on the ground or when it is moisty
- Having practised these things, the skill you will acquire is that under such conditions

Sub-theme: financial management

P16:

- The chemical works in this way, so maybe financial management will be one of the important things
- This side is when a person affords
- Let me fix my statement if you have something happening, your ability to manage finances

Sub-theme: time management

P16:

- I think when talking about it, I answered it saying farming needs a person to do a thing at the right time, do it in a right way
- For you to succeed in farming, you need to do the right thing at the right time in the right way

Sub-theme: planning

P16:

- In order to do these things to be honest, doing planning is one of the fundamentals of working in farming, where many people fail
- You know you want to plant, but you don't prepare whether to plant 50 ha at a particular time
- I am going to use so much fertiliser, so much seed, so much diesel, so many tractors, so many workers and they cost me so much
- That is a kind of planning we need, a detailed one, written down, that is what you need for your strategies to work because your plan is your guidance in terms of making decisions whether they are right or wrong, but if you don't have a plan based on the weather conditions, you can't decide whether I invest or not
- So your plan need to be detailed

P18:

- Yes, sometimes it doesn't help owning a big farm but unable to do anything with it
- Let us say it be caused by plan, if the plan is not right, then you fail

Sub-theme: soil preparation

P18:

- You need to take soil sample for testing where they will tell you what fertiliser is needed

Sub-theme: locality

P16:

- I think he wanted to refer to what we term local best practices
- There are things you can do here but not do in Bloemfontein
- Yes, it is termed local best practices

P18:

- Yes, yes, like here we are afraid to plant sunflower here
- Because if you are the only who have planted it
- Birds here attack you
- Where it is planted by many, it is much better, but if only the two or three of you do, birds will
- attack you

As for all other personal attributes

P16:

- I don't give them…as far as I am concerned, they are not the core
- I don't dispute it sir, eh I even not want to remove it, I think when elaborating, I was trying to identify key issues that if you lack on them
- Yes, if you don't have them, never even try
- These ones are general, they are general in any field
- Yea, agriculture has a problem that if you don't like it, it is going to cause troubles for you sir
- You need to love even if you know that drought has hit you terribly
- Your heart should just remain there, loving
- Yes, if they say you love a person passionately, even if they have clapped you, you still love them

P18:

- You know everything needs passion and knowledge related to what you love

Table 4.10

Selective coding: Indicators of grain farming success-2

Sub-themes: financial stability, farming implements & output per area

P16:

- you will remember I talked about productivity or your output per unit area, I stressed that point

P18:

- Very true, you still can succeed and find yourself strong
- Can succeed still having hired implements

Table 4.11

Selective coding: Importance of grain farming in agriculture-2

P17:

- I just wish our young people could realise this as an avenue for wealth creation, particularly for the black child
- I think it is still tainted by what our ancestors were experiencing whilst suppressed by their colonial masters

Table 4.12

Selective coding: Methods of acquiring grain farming competencies-2

Sub-theme: Early child exposure to farming

P16:

- I want to emphasise this one of exposure of young children
- We don't just expose the kids to farming, we lead the livelihood of farming, we at the forefront
- We don't just show them, we mentor them from the onset
- In other words, they must emulate what we do
- So we can't blame them
- Young people of today cannot be blamed for neglecting agriculture
- I still blame people at the forefront
- If I want to be unjust, I will blame the old people, but I had the liberty of being exposed to certain information
- I understand how we depart from the lifestyle you aspire for today,
- If you depart from the land now, I can tell you if I kick you out of your yard now and put you in the open veld with your family, your way of life, taking away this house and every resource in this yard and put them at a different place, your lifestyle will change, the way you see life will change completely
- For some, it will be an issue of having two sheep
- For another, it will be the issue of having my garden over there
- That's how we view life, but if you think of making a garden this side, it is where your neighbour spills wastewater
- That obviously limits your life of making a garden
- So where will you have one, but if you get your own piece of land, even the way you think will be different
- As far as I am concerned, it was not supposed to be a difficult thing for people to think the other way but simply because we are congested or confined to residential areas
- We find ourselves in this way unaware that there are better ways of living
- So if you want me to talk about the issue of exposure, it is not only about the issue of exposure
- Yes, yes we must lead them into, we must guide them into that kind of lifestyle
- How are you going to culture Christianity in your family if you yourself cannot behave?
- If you are not a farmer, do you ever think there will be a farmer in your family?
- That is where I said if we want people in agriculture, let the people have access to all the resources that are necessary to do what we want and it starts with the issue of land
- Once we unlock access to land, then it will be easy for people to farm, but as far as I am concerned for now, not everyone will be a farmer, that we must understand, especially the commercial farming
- I still maintain that commercial farming is not the destination we would lead the country into if I were the president, I would not say to people to practise commercial agriculture, I would not say that
- I would say produce your own food and sell the surplus to everyone
- Produce from it and sell the surplus to those who can't produce what you produce
- Trading would start there and it limits the competition in terms of the incentives that we make the exchange from, maybe I would be a socialist, when it comes to farming and the issue of food
- I would be very socialist in that regard but not with other things where I expect trade with other nations on a massive scale
- My policy would be very socialist, where everyone must produce what he eats

These interviews tested the model in relation to the data and determined the relevance of the emergent themes to grain farming. The participants did not suggest any elimination of themes, codes and concepts on the proposed model. They added and stressed certain key issues requiring inclusion.

4.8.4 Theoretical coding

Upon completing the selective coding, I embarked on merging concepts suggested by experts into the final model. At this point, similarities and differences in categories have already been established.

4.8.5 Literature review and refinement of the model

Before I could finalise the model, I consulted relevant literature addressing competency in farming to test and validate the data in relation to the theory. I then incorporated the emerging themes into the initially developed competency model.

4.9 Conclusion

Having highlighted the profiles of the research participants in the current project, it is evident that practical data analysis consists of three phases of coding. In open coding, voluminous data is broken down into smaller parts to make sense of what it means. In selective coding, I selectively looked for cases that illustrate themes, comparing and contrasting after gathering all the data. In theoretical coding, substantive codes (i.e., codes generated thus far pertaining to the competencies of grain farmers) are then related to each other. I conceptualised the core category into a substantive theory to explain the phenomenon as revealed and grounded in the data.

In the first part of this chapter, I conducted interviews with research participants using a semi-structured format. This helped with developing themes and sub-themes in the competencies of commercial grain farmers. The second part aimed to test and validate information gathered in Part 1 of the study. The next chapter focuses on an overview of literature covering the competencies of successful farmers.

CHAPTER 5: COMPETENCY MODEL FOR COMMERCIAL GRAIN FARMING: LITERATURE OVERVIEW

5.1 Introduction

In this chapter, attention is drawn to an overview of literature related to farmers as entrepreneurs. Also included are discussions about key aspects linked to a successful business, literature on approaches to competency modeling and applying the relevant model to successful commercial grain farming.

5.2 Commercial grain farming: an overview of the literature

Literature related to the work done by Fourie (2013) and other researchers is further explored and how they relate to the current study is determined. Before embarking on studies related to commercial farming, specifically grain farming, it is important to define these terms. The overview of the literature concludes by highlighting the models of agricultural commercialisation in Africa.

5.2.1 Commercial farming

Commercial farms within the American context refer to farms that generate annual gross sales of $40 000 or more (Kraenzle et al., 1989). Commercial farming refers mainly to “increased participation in remunerative agricultural commercial output markets” (Khapayi & Celliers, 2016, p. 26). For example, in the livestock sector, commercial farming aims “to achieve faster growth, less mortality, high turnover which all translate into higher profits” (Masika et al., 1998, p. 34); the same could be assumed for grain farming. Farm sizes also form a distinguishing criterion between smallholder farmers and commercial farmers (Cousins, 2009). Hall (2009, p. 51) “indicates that a higher degree of labour-intensity distinguishes smallholders from commercial farmers, and sometimes smallholding appears to be equated with farming that relies mainly on household labour.” Therefore, the definition adopted in this study considers the features mentioned above. Measures to make commercial and subsistence smallholder farming more productive and sustainable, as proposed by the World Bank (2007), include: improve price incentives and increase the quality and quantity of public investment; make product markets work better; improve access to financial services and reduce risks; enhance the performance of producer organisations; promote innovation through science and technology (Baiphethi & Jacobs, 2009).

“Smallholders, whether in the former homelands or on new land reform projects, require a range of support services both to expand production and to compete with large commercial producers” (Lahiff & Cousins, 2005, p. 130). Lahiff and Cousins recommend that to change from smallholder to commercial farming, the following levels should be addressed:

- At the farm level: this level includes agricultural extension and veterinary services, research, mechanical services, credit facilities, transport services, development of irrigation and other infrastructure, training and market information.
- At a wider level: this includes upgrading of roads and bridges in rural areas, construction of market places and storage and processing facilities, such as mills and abattoirs, and support for local providers of agricultural services. Institutional support will also be required to build dynamic farmers’ unions and cooperatives and to expand opportunities for farmer education.

5.2.2 Grain farming

The Pocket Oxford Dictionary defines grain as “fruit or seed of a cereal” (Thompson, 1992, p. 380). “In Southern Africa, the most prevalent diets for many households are a combination of grains from both cereals (maize or sorghum/millets) and legumes” (Manzeke et al., 2012, p. 2).

Farming as an occupation has several classifications, such as animal farming (including game and domestic), lower animal farming (including beekeeping and worm grower), domestic fowl farming (including canary breeder and poultry farming) and crop farming (US Department of Labor, 1977). For this study, the general farmer is adopted, which the US Department of Labor (1977) defines as someone who does the following:

> Raises both crops and livestock: Determines kinds and amounts of crops to be grown and livestock to be bred, according to market conditions, weather, and size and location of farm. Selects and purchases seed, fertilizer, farm machinery, livestock, and feed and assumes responsibility for sale of crop and livestock products. Hires and directs workers engaged in planting, cultivating, and harvesting crops, such as corn, peas, potatoes, strawberries, apples,

peanuts and tobacco, and to raise livestock, such as cattle, sheep, swine, horses and poultry. Performs various duties of farm workers, depending on size and nature of farm, including setting up and operating farm machinery. (p. 280)

5.2.3 Models of agricultural commercialisation in Africa

During the colonial period and the post-independence era on the African continent, many models of commercialising agriculture have been in existence. Each of these models had benefits and challenges in terms of generating quality employment at scale, avoiding dispossessing local people of their land, promoting diversified and sustainable livelihoods and catalysing more vibrant local economies (Hall et al., 2017).

Hall and colleagues examined the three models of agricultural commercialisation as plantations or estates with on-farm processing, contract farming and out-grower schemes and medium-scale commercial farming areas. Their examination of the models was carried out in three different countries: Ghana, Kenya and Zambia.

Regarding plantations or estates, the model involves the outright takeover of land and related resources while displacing other land users and uses. There is some evidence that they are typically poorly integrated into their surrounding society and economy. The focus of the plantations was mainly on global markets rather than interacting with the local economy. These plantations are thus defined as large self-contained agribusiness farms that are vertically integrated into value chains. The finding of this study in this regard showed that plantations or estate models led to the displacement and dispossession of existing farming communities (Hall et al., 2017).

Out-growing or contract farming involves developing processing facilities, thus integrating small producers into commercial value chains. “In this way, contract farming links capital to out-growers via contracts, providing opportunities for accumulation by ‘smallholders’ but on terms of incorporation that may be more or less advantageous, depending on the institutional arrangements” (Hall et al., 2017, p. 519). These out-growers are linked to a processing firm that sometimes also holds a nucleus estate but augments its supply from these out-growers who supply their produce. Benefits attached to this arrangement are the creation of opportunities for wage employment through permanent and seasonal employment. The out-growers model indicated existing opportunities for livelihood improvement and accumulation, particularly in Ghana; however, in Kenya “outgrowing provided a crucial source of

income and autonomy for poor women but without prospects for any significant accumulation, which is why better off smallholders, especially men, chose not to engage in the scheme" (Hall et al., 2017, p. 532).

Medium-scale commercial farming areas involve the amalgamation of medium-scale commercial farmers who acquire land through rental or sale and often specialise in the same crop or commodity. The beneficiaries of these medium-scale farming areas are primarily male, wealthy, middle-aged or retired, from professional positions, including civil servants. These medium-scale commercial farming areas are defined as localities dominated by medium-scale farms generally larger than those in the surrounding area. Individuals or small companies own them. Findings regarding this model determined to be important and becoming a growing phenomenon in certain areas associated with particular crops. This model is better embedded in the local economy with strong forward and backward linkages and is reliant on local rather than foreign investment (Hall et al., 2017).

5.3 Key aspects that are linked to successful farming

Farmers are also viewed as entrepreneurs. According to Vesala and colleagues (2007):

> Farmers are those occupied on a part- or full-time basis on a range of activities, which are primarily dependent on the farm and by agriculture, by which is meant the practice of cultivating the soil, growing crops and raising livestock as the main source of income. (p. 51)

Carter and Rosa (1998) and McNally (2001) "argue that the methods used to analyse business entrepreneurs in other sectors can be applied to rural businesses, such as farms" (McElwee, 2008, p. 467). One of his key themes emerging from his paper, where a conceptual understanding of the farmer as an entrepreneur was developed, found that farmers are business people because they run businesses; in practice, they do not necessarily have well-defined business skills (McElwee, 2008). Therefore, predictors of entrepreneurial or farmer success can be classified into three categories: individual, organisational and environmental characteristics. Strategies for success among the black farmers in the United States of America showed that their success was directly related to good management practices, knowledge and early

adoption of new technology, strong work ethics, love of farming, size of operation, participation in government programmes, as well as strong family support (McLean-Meyinsse & Brown, 1994). For this study, only the individual characteristics are discussed because DuBois views competency as an underlying characteristic of an individual that leads to successful performance in life (Grobler *et al*., 2011).

5.3.1 Individual characteristics

As each person is unique, several characteristic patterns of thoughts, feelings and behaviour make up an individual's personality. The frequently used framework to study personality is the Big Five model, which addresses the following dimensions: neuroticism, extraversion, conscientiousness, openness to experience and agreeableness (Boz & Ergeneli, 2014).

Some researchers also refer to these characteristics as types; to be a successful entrepreneur involves self-nurturing, being self-motivated, energetic and the ability to take risks (Moses, 2012). In Moses (2012), Vesper includes entrepreneurial types such as pattern multipliers, economies of scale exploiters, acquirers, conglomerates, and speculators.

Other leading personality themes that predict entrepreneurial success are the commitment and determination of entrepreneurs, their leadership and the ability to build teams, drive for finding opportunities, tolerance for risk, creativity, self-reliance, and general enthusiasm to do extremely well (Alstete, 2008). According to Ayala and Manazano (2014), resilience refers to a dynamic adaptation process, allowing entrepreneurs to continue to focus on the future despite harsh market conditions and destabilising events. In order to determine if resilience has a predictive validity on the success of entrepreneurs, these researchers conducted a longitudinal study where results showed that three dimensions of resilience predicted success, namely hardiness, resourcefulness and optimism.

Certain personal factors also affect the activities as entrepreneurs graduate from entrepreneurial start-ups to successful business ventures, including factors such as their personal background, leadership, beliefs, and values (Bann, 2009). For example, LeBlanc (2013) asserted that the more information, education, knowledge, experience and understanding the entrepreneurs had, they were better able to lessen the risks for the business. Furthermore, people are likely to organise expectations and

perceptions of others based on race, gender, age and attractiveness (LeBlanc, 2013). Harvey's (2005) study on determining how race, gender and class affected African American female hairstylists found that these variables were clear in decisions that led them to become entrepreneurs and in the relationship with their stylists.

In a study conducted by Panda and Panda (2005), where they studied traits leading to entrepreneurial success, results showed that two key sources were the main determinants: personal profiles and managerial competence of the entrepreneur. Other attributes found to play a significant role in the competence of an entrepreneur include high self-efficacy, ability to spot and recognise opportunities, high personal perseverance, high human and social capital and superior social skills (Markman & Baron, 2003).

5.3.1.1 Self-efficacy

Bandura (1986, p. 391), the original developer of the social cognitive theory, defines self-efficacy as "people's judgements of their capabilities to organise and execute courses of action required to attain designated types of performances". Krecar and Coric (2013) regard it as a person's belief in their ability to establish a company. Self-efficacy influences occupational choice, performance and persistence in given tasks and behaviours. Low self-efficacy expectations lead to behaviour avoidance, while high self-efficacy expectations encourage the behaviour toward specific tasks (Creed et al., 2002).

Lent's social cognitive career theory (SCCT) was formally introduced more than 15 years ago (Lent et al., 2010). SCCT is embedded in the larger social cognitive theory developed by Bandura (1986) and has sparked a great deal of research. It explains the interaction among personal, contextual and behavioural variables in the process in which vocational interests and career choices develop, and an individual persists in her or his career (Flores et al., 2010; Lent et al., 2000). The core variables are perceived self-efficacy, outcome expectation and future performance or goals. Self-efficacy affects individuals' expectations about outcomes, as well as their intentions towards performance. Outcome expectations affect individuals' future performance or goals and, ultimately, their actual career goals. Individuals are motivated to choose a career based on their intentions towards performance and outcome expectations (Lent et al., 1994; 2000). This theory and its core focus on self-

efficacy, outcome expectations, barriers and goals can help with career and academic decision-making (Gibbons & Shoffner, 2004).

These core social cognitive variables are dependent and independent, depending on whether a researcher's interest is in the variables that shape them or in the outcomes they help to foster (Lent & Brown, 2006). According to Creed and colleagues (2002), self-efficacy, the first core construct in SCCT, influences occupational choice, performance and persistence in given tasks and behaviours. Low self-efficacy expectations would lead to behaviour avoidance, while high self-efficacy expectations would encourage the behaviour toward specific tasks.

As the second core construct in SCCT, outcome expectations deal with beliefs about the consequences or outcomes of performing particular behaviour (Lent & Brown, 2006). "Whereas self-efficacy beliefs are concerned with one's capabilities (e.g., 'can I do this?'), outcome expectations involve imagined consequences of particular courses of action (e.g., 'if I try doing this, what will happen?')" (Lent, 2005, p. 104). There are types of outcome expectations classified as social, material and self-evaluative, which also differ in evaluative direction and strength. For example, a person may expect either positive, negative, or neutral outcomes due to engaging in a particular activity. It is therefore believed that people are prone to attempt behaviours they see as likely to gain them highly valued outcomes and to avoid those that may result in particularly adverse consequences (Lent & Brown, 2006).

The third construct is the goal, which refers to producing a particular outcome or engaging in a particular activity. Types of goals covered in SCCT are choice-content and performance goals. Choice-content goals are types of activities one wishes to pursue, motivatin students and workers to pursue their preferred vocational options. Performance goals refer to levels of performance toward which one aspires within a given domain, and they help determine the level of success that individuals achieve at chosen tasks (Lent & Brown, 2006).

The fourth construct is interest, which refers to people's likes and dislikes regarding different activities. An assumption held on the application of SCCT is that people are drawn to specific tasks or activities based on the interests they attach to them (Lent & Brown, 2006).

The fifth construct is the contextual support and barriers concerned with the environmental factors that facilitate goal achievement or those that appear as obstacles to goal achievement. The presence of high support and low barriers in the

environment is assumed to strengthen goals and their likelihood of being enacted (Lent & Brown, 2006).

5.3.1.1.1 Determinants of self-efficacy

In his social cognitive theory, Bandura argues for four main forms of influence that shape people's beliefs: personal experiences, vicarious experiences, physiological and emotional states, and verbal persuasion (Krecar & Coric, 2013).

Personal experiences are seen as the most powerful source of self-efficacy. The relationship between personal experiences and self-efficacy depends on many other factors, such as previous assumptions about one's own abilities, perceived difficulty of the task, the amount of time and effort, performance circumstances, time patterns of success and failure, and how the experiences are cognitively organised and reconstructed in memory (Krecar & Coric, 2013).

Verbal persuasion is another source of self-efficacy that comes through a credible person who might be a family member, friend or teacher who can provide real support or encouragement to a particular activity. This credible person's encouragement could likely help someone put more effort in that activity, resulting in increased self-efficacy. If failure results from the effort put in an activity despite the encouragement from a credible person, the chances are that persuaders are seen as incompetent. Therefore, persuasion should have the appropriate form to be effective (Krecar & Coric, 2013).

According to Bandura (1995), the other source of self-efficacy is the physiological and emotional states that can accompany an activity. In these states, people follow and interpret their physical signs, which are performed based on self-reports of competence or incompetence. Traits such as self-esteem, self-monitoring, depression and locus of control will affect cognitive bias in interpreting own physiological-emotional reactions (Krecar & Coric, 2013).

Vicarious experience or modelling is based on observing another person who may be regarded as a role model, including the consequences of that role model's behaviour. The underlying process in vicarious learning is social comparison of whether individuals are in a particular activity better, average or worse than others, especially in relation to the monitored model (Krecar & Coric, 2013).

5.3.1.2 Opportunity recognition

According to Markman and Baron (2003), the notions of opportunity recognition suggest that the ability to identify high-potential from low-potential opportunities and to spot obstacles before they become insurmountable would lead to the creation of superior ventures. For example, research suggests that novice entrepreneurs differ greatly from established entrepreneurs regarding entrepreneurial behaviours, background, and cognitions. Novices tend to search for information less extensively than their mature counterparts. Entrepreneurs spend more time scanning non-verbal cues and pay special attention to risk cues about new opportunities, while executives tend to focus more on the economics of opportunities.

5.3.1.3 Personal perseverance

As far as learned industriousness theory goes, different people display contrasting levels of perseverance based on their history of persistent and effortful behaviour. Thus, a person's success is determined by her ability to handle adversity measured through the adversity quotient (AQ). A study found that successful entrepreneurs had higher AQ scores than the less successful ones as measured by higher personal earnings, higher levels of perceived control over adversity they face and higher accountability for the outcome of the adversity (Markman & Baron, 2003).

5.3.1.4 Human and social capital and social skills

Human capital is influenced by genetic factors (e.g., intelligence, health, personality) and acquired skills (e.g., education, job training, tenure, work experience and interpersonal relationships). This type of capital is related to firm survival. Social capital refers to a proxy of resources made available through organisational positions, elite institutional ties, social networks and contacts, as well as relationships with others. Both human and social capital are complementary in that high levels of social capital facilitate flows of knowledge and thus, determine access to resources and stand a chance of contributing to one's success. Social skills are competencies that enable people to interact effectively with others. These skills have been found to influence negotiation outcomes, the frequency with which people engage in conflict and aggression, as well as personal happiness (Markman & Baron, 2003).

5.3.2 Organisational characteristics

Factors highlighted here briefly focus on the internal environment of an organisation. The characteristics that determine the success of entrepreneurs within organisations include, for example, the level of technology, business planning, size of an organisation, company's resources and business strategy (Erofeev, 2002).

5.3.3 Environmental characteristics

According to Conger in Erofeev (2002), an environment where a venture starts and operates is never stable, forcing entrepreneurs to forecast changes to align businesses to face new changes and mobilise workers to operate in those changing environments. Determinants of entrepreneurial success in the environment include hostility, complexity, the dynamism of the market, competitiveness or supportiveness (Erofeev, 2002).

5.3.4 Sources of successful farmer imagery

In agrarian mythology, a successful farmer is a hard-working, self-reliant and religious individual who lives and works harmoniously with nature to preserve land for the future generation of farmers (i.e., for the family and community). This mythology was transformed by agricultural industrialisation, giving rise to individualism, maximum production, and technical efficiency and innovation. In commercial form, success flows from the exploitation of natural resources; the successful farmer is an efficient producer who subordinates other values to the operation of the farm business (Walter, 1997). According to Walter, sources of successful farmers are images of a farmer as steward, as a manager, as conservative and as agrarian. These images are described below.

5.3.4.1 Successful farmer as steward

A steward cares for the land and environment. He/she does not believe that success comes from maximum production and aggressive growth, nor does rapid expansion enhance chances for success. The following statements scored a strong negative: 'Rates growth in corn yields as his most significant farming accomplishment;' 'Won the state corn yield contest two years in a row, and the national contest two after that;' 'Is a hero with farm media; they wrote about him and film him often;' 'Was among the first in the area to invest in computerised production technology' (Walter, 1997, p. 60).

5.3.4.2 Successful farmer as manager

This category defines a successful farmer in terms of analytical capabilities. Manager's attention to farm records produces impressive profits and judgement contributes more to his success than the size and newness of machinery. Efficiency and business orientation tend to be more important than a lifestyle for a manager's image of success. They rated the following statements high: 'Doesn't have a new tractor, planter, or pickup. But has production figures and management numbers that would impress the most astute banker;' 'Figures his production costs, keeps a close watch on price movements, talks with merchandising professionals, subscribes to two market advisory letters, does some charting, and sets up a tentative marketing plan' (Walter, 1997, p. 60).

5.3.4.3 Successful farmer as conservative

This group combines aspects of stewardship, financial conservatism and concern for the family to construct an image of a successful farmer committed to keeping the farm a family enterprise. They rated high on statements such as 'Has not only high production but also all-round wise use of the land and soil conservation;' 'Instead of setting his sights on expansion, his goal is to pay off operating debts as quickly as possible;' 'Is a farmer who balances family obligations above all else;' 'He and his wife have a programme that will keep their family farm intact for a lifetime' (Walter, 1997, p. 62).

5.3.2.4 Successful farmer as agrarian

This group shares several attributes with the conservative, but for them, success comes from hard work, practical knowledge and community involvement. They find intrinsic value in farming as a way of life, though they recognise that it is a business as well. They gave prominence to statements such as 'Enjoys watching the crops grow, seeing different scenery each day, and having the freedom to make decisions;' 'Applies practical, down to earth knowledge on his farm;' 'Both he and his wife put in long hours on the farm, as well as volunteering for a slew of committees and offices with church, community, and farm organisations' (Walter, 1997, p. 63).

Although the literature focuses on these individual characteristics to farmer success, this study tried to investigate the same area further, as indicated by Díaz-Pichardo et al. (2012); a scarcity exists in emerging economies (BRICS), including

South Africa. In the next section, the focus is on literature showing that farmers need to be considered entrepreneurs.

5.3.5 Farmers as entrepreneurs

Building from McElwee's (2008) work referred to in Chapter One (Section 1.3), the discussion starts by defining what the term entrepreneur means. Also important is the distinction between an entrepreneur and entrepreneurship; the first refers to the content of the phenomenon and the second to the process itself (Phelan, 2014). There are disagreements on the definitions of these two terms as they are evidently linked to innovation, opportunity recognition, profit, economic growth, venture creation and change (Misra & Kumar, 2000). A further disagreement is concerning whether either of these two terms should be analysed at individual or organisational levels.

Though entrepreneur as a term has continually been defined, re-defined, extended and re-interpreted for more than two centuries, literature still lacks unanimity (Bull & Willard, 1993). Some definitions focus heavily on founding firms (Gartner, 1985), others focus on opportunity as central to the definition (Shane & Venkataraman, 2000), while others focus on specific functional, individual and processual elements that underpin the conceptualisations offered (Omrane & Fayolle, 2011).

Thus, the review of the literature starts by discussing the approaches of studying entrepreneurship. Entrepreneurship can be studied from various approaches, namely trait, behavioural, opportunity and human capital perspectives.

5.3.5.1 Trait theory

Studying entrepreneurship from the trait theory equips us with the knowledge that this theory is embedded in the personality theories and assumes that an enterprising individual is distinguishable from the masses by exhibiting specific personality traits (Phelan, 2014). Therefore, an entrepreneur is portrayed as a heroic figure within society, seeking to identify the characteristics that distinguish the entrepreneur from 'mere mortals' (Ogbor, 2000). Literature on entrepreneurial traits mainly emphasises discussions on the "big three" as the need for achievement, locus of control and risk-taking propensity (Chell, 2008).

5.3.5.1.1 Need for achievement (nAch)

David McClelland, the proponent of this theory of motivation, the cornerstone of the trait theory, advocated that the motivation to achieve is higher among entrepreneurs

than non-entrepreneurs. Phelan (2014) reports that a large body of empirical work tested and supported the nAch construct, such as Fineman (1977), Johnson (1990), and Stewart and Roth (2007). Others contrast those findings by showing that nAch identifies a weak predictor of an individual's predisposition to start a venture (Hull et al., 1980), easily attributing it to salespeople, professionals and managers (Low & MacMillan, 1988), with a variety of push and pull factors influencing the venture start-up intention (Chell, 2008). Consequently, literature remains divided regarding this issue even though the interest in it is still high.

5.3.5.1.2 Locus of control

Rotter (1966) in Phelan (2014) suggested a proposition comprising the dichotomy of one's belief. A belief that events occur within one's control refers to an internal locus of control, while such a belief that they occur outside of one's control refers to an external locus of control. Rotter hypothesised that individuals with an internal locus of control would pursue an entrepreneurial career because of a desire to control their own destiny. On answering the question of whether the internal locus of control is the predictor of entrepreneurial careers, Kobia and Sikalieh (2010) confirmed that many high achievers exhibit a high internal locus of control. Conversely, Chell (2008) found that research into the locus of control as a personality characteristic that predicts entrepreneurial behaviour is by no means convincing.

5.3.5.1.3 Propensity for risk

Within the trait theory, the risk-taking propensity is central to the psychology of the individual entrepreneur and not just as an economic activity that he or she engages in (Phelan, 2014). This risk-taking element is best highlighted in entrepreneurship as it is defined based on its economic role. David McClelland's nAch work emphasises this role in the proposition that high achievers are predisposed to taking risks. Studies conducted by Hull et al. (1980) and Timmons (1994) support McClelland's proposition by showing that entrepreneurs have a greater propensity to take risks. However, Stearns (1996) warns that successful entrepreneurs may also be effective risk managers than wild-eyed risk-takers.

5.3.5.1.4 Criticisms against the trait theory

Many studies have been conducted to test and measure the trait construct; results, however, do not reach any consensus. The big three that gained prominence in

research have recently been replaced by the big five: neuroticism, extraversion, openness, agreeableness and conscientiousness (Phelan, 2014). A meta-analysis reviewed by Zhao and Seibert (2006) indicates that entrepreneurs differ from others in terms of their basic personality. The review further indicates that the entrepreneurs rate higher than managers on dimensions of personality such as conscientiousness and openness, but lower on neuroticism and agreeableness, with no difference in respect to extraversion. Thus, Phelan (2014) states that the central criticism of the trait theory is that many of the traits identified and discussed are shared by entrepreneurs and non-entrepreneurs alike.

Furthermore, another problem emanates from the disagreement around the definition of an entrepreneur where Gartner's (1989) meta-analytic review identified the fact that such definitions are inconsistent with other studies. The failure of the trait theory calls for an alternative approach, namely the behavioural approach, with elements of cognitive psychology being pursued to understand entrepreneurship and an entrepreneur as an individual (Phelan, 2014).

5.3.5.2 Behavioural approach

Unlike the trait theory that focuses on who the entrepreneur is, the behavioural approach focuses on what the entrepreneur does; the activities carried out by entrepreneurs. Phelan (2014) emphasises that this approach addresses entrepreneurship as it considers the set of activities and processes associated with creating a new venture.

5.3.5.2.1 Entrepreneurship as venture creation

Venture creation as the main entrepreneurial function is pioneered by William Gartner's (1989) work in a seminal article 'Who is the entrepreneur is a wrong question' where an argument is presented that organisation distinguishes an entrepreneur from non-entrepreneurs. Davidsson (2003) states that Gartner's work laid the foundation on entrepreneurship research by revealing that entrepreneurship is about behaviour, rather than dispositions or characteristics; it is a process, and it is about emergence.

Though the behavioural approach is concerned with the entrepreneur's actions, it does not neglect the individual and the individual behaviour because it is the necessary ingredient for venture creation (Phelan, 2014). This approach considers organisation as a primary level of analysis and the individual is viewed in terms of

activities undertaken to enable the organisation to come into existence (Kobia & Sikalieh, 2010).

5.3.5.2.2 Cognitive processes

Cognition and cognitive psychology explain the mental processes within individuals and how they interact with the environment and people. Cognitive processes refer to “all processes by which sensory input is transformed, reduced, elaborated, stored, recovered, and used” (Phelan, 2014, p. 73). Cognitive psychology has attracted many entrepreneurship scholars intending to explain how entrepreneurs think and behave (Mitchell, Busenitz et al., 2002; Katz & Shepherd, 2003; Baron, 2004; Grégoire et al., 2011; Sánchez et al., 2011). Entrepreneurial cognitions are defined as knowledge structures people use to assess, judge and make decisions regarding opportunity recognition, venture creation and growth. Through the cognitive approach, an entrepreneur pieces together information that helps to establish and grow a business (Mitchell et al., 2002). Phelan (2014) notes that cognitive processes used to explain entrepreneurial behaviour include self-efficacy, scripts, cognitive bias and opportunity recognition.

5.3.5.2.2.1 Self-efficacy

Self-efficacy in entrepreneurial behaviour aids in distinguishing between entrepreneurs and non-entrepreneurs as it explains why individuals of equal ability perform tasks differently. Entrepreneurs with high self-efficacy can identify opportunities, persevere any uncertainties and feel competent to overcome challenges (Phelan, 2014).

5.3.5.2.2.2 Scripts or schema

Scripts or schema in entrepreneurship refers to the knowledge structures that people use to make assessments, judgements and decisions whenever business opportunities arise, including its creation and growth (Sánchez et al., 2011). These scripts are simplified models that entrepreneurs use to develop new products or services and identify venture creation resources (Phelan, 2014). Entrepreneurial scripts can separate expert entrepreneurs from novice and non-entrepreneurs; experts have refined knowledge about a particular domain that allows them to perform better in certain environments than others (Sánchez et al., 2011).

5.3.5.2.2.3 Cognitive bias

According to Baron (2004), cognitive bias affecting entrepreneurs includes optimistic bias, planning fallacy and affect infusion. Optimist bias refers to an inflated tendency to expect things to turn out well. Planning fallacy refers to a tendency to believe that more work can be completed within a given time than is actually possible, while affect infusion is the tendency for affective states to strongly influence perception and decisions. As a result, entrepreneurs' cognitive bias influences them to expect more favourable results than are practically justified on others.

5.3.5.2.2.4 Opportunity recognition

Opportunity recognition within the cognitive approach is studied from the perspective of understanding the perceptions. It has to do with object or pattern recognition and assumes that at some level, opportunities exist as patterns or configurations of observable stimuli (Phelan, 2014). Our memories store the new patterns as they are distinctive from those readily stored. The stimuli may have distinctive features that include newness, practicality, novelty or uniqueness that the entrepreneur may recognise and exploit. The cognitive model assumes that through experience, prototypes of opportunities will form as mental abstractions that compare ideas for new products or services with existing prototypes opportunity (Baron, 2004). Thus, the behavioural approach assumes that the entrepreneurial function ends once an organisation is created (Gartner, 1989).

5.3.5.3 Opportunity identification approach

Entrepreneurship comes into existence due to entrepreneurs identifying opportunities (Shane & Venkataraman, 2000). Nielsen and colleagues (2012) further argue that the theory of entrepreneurship is made unique by focusing on opportunities. Below is a discussion on the frequently cited key theorists in this area, namely Schumpeter and Kirzner (Phelan, 2014).

5.3.5.3.1 Schumpeterian and Kirznerian opportunities

Schumpeterian theory proposes that opportunities arise through combinations of existing resources, while Kirznerian theory assumes that opportunities arise resulting from identifying gaps in the market and the use of existing market information (Phelan, 2014). As regards access to new information on entrepreneurial opportunities, Schumpeter held the view that changes in technology, political forces, regulation,

social trends and macro-economic factors offered new information that entrepreneurs could use to recombine resources. However, Kirzner believed that entrepreneurs should focus on optimising and making the existing market more effective. Kirznerian approach to entrepreneurial opportunity is considered not innovative as the focus is on replicating the existing information, while the Schumpeterian approach is innovative as it focuses on emphasising new knowledge (Phelan, 2014).

5.3.5.3.2 The individual and opportunity

Shane (2003a) states that the opportunity identification approach emphasises the individual's ability to exploit opportunities. Such an ability is affected by individual-level characteristics, some of which are psychological and others non-psychological. On the non-psychological factors, entrepreneurs with experience and a certain level of education are better at exploiting opportunities than those with lesser experience and education. Career experience is another factor to consider, as it reduces the uncertainty of an entrepreneur regarding the opportunity and the pursuit of profit.

Regarding the psychological factors, Shane (2003b) emphasises that they do not cause individuals to exploit opportunities, but they influence the exploitation decision. Psychological factors such as motivation, locus of control, vision, the desire for independence, passion and drive operate as general motivators. In contrast, goal setting and self-efficacy operate as task-specific motivators. Discussions on the previous approaches indicate that no single approach can be used to capture the true picture of understanding entrepreneurship (Kobia & Sikalieh, 2010). This calls for an additional body of literature that considers competencies as elements of entrepreneurial human capital (Phelan, 2014).

5.3.5.4 Entrepreneurial human capital, skills and competencies approach

The origin of human capital theory is found in economics as it focuses on the relationship between financial success and human resources (Phelan, 2014). Becker in Phelan (2014) views human capital as a set of skills and characteristics that increase a worker's productivity by arguing that these can be acquired by investing in education and training. Research on human capital and entrepreneurship focusing on education, experience, knowledge and skill found a positive relationship between these human capital variables and success (Skuras et al., 2005; Ucbasaran et al., 2008; Onphanhdala & Suruga, 2010; Unger et al., 2011).

Criticism against entrepreneurial human capital is that human capital is usually operationalised as several years of experience or type of education one has and touches superficially on entrepreneurial behaviours and activities. The study of entrepreneurial human capital gave rise to the concept of competency in small firms (Phelan, 2014). Entrepreneurial competency is linked with business performance and growth, and the reason for increasing skills and competence contribute to venture start-up, survival, growth and profitability (Chandler & Jansen, 1992; Bird, 1995; Mitchelmore & Rowley, 2010; Omrane & Fayolle, 2011). Bird (1995) maintains that since competence is observable, it can portray a stronger relationship between individual differences and venture outcomes than the personality trait-based approach referred to earlier. Omrane and Fayolle (2011) support the same view by stating that competencies are the best predictors of entrepreneurial performance. Thus far, it is clear that the terms competence and competency are used interchangeably, which may create some confusion. A clarification of these and other related terms is presented in the section below.

5.3.5.4.1 Understanding the skill, knowledge and competency

For an entrepreneur, starting a business requires numerous factors such as knowledge, skills, abilities, expertise, acumen and competency (Phelan, 2014). According to Chell (2013), the skill construct is under-researched, rendering its definition vagueness but acknowledges that it generally includes talents, abilities and capabilities. Interpretations of skill include those that are technical, behavioural or cognitive in nature. A skill is technical if it relates to the exercise of labour power, behavioural if it reflects the personal qualities of labour and cognitive if it is related to education, training and qualifications (Ashton & Green, 1996; Buchanan et al., 2004). Unlike knowledge, skill is demonstrable through application, while knowledge is elicited through the use of more abstract means of conversation or questioning (Jessup, 1991).

A further distinction needs to be made between skill and competency, which pose a challenge in our daily use. Parry (1998) cautions that skill is normally situational and specific while competency is generic and universal. Kanungo and Misra (1992) distinguish them by referring to skill as the ability to relate to unconcealed behaviour, whereas competency refers to the ability to relate to cognitive activity. Kanungo and Misra provide a summary of the two terms (see Table 5.1). With the confusion of using

these terms interchangeably, more confusion arises in using the terms competences and competencies (Phelan, 2014). Competence refers to the ability based on work-related tasks, while competency refers to the ability based on behaviour (Whiddett & Hollyforde, 2003; Hayton & McEvoy, 2006; Whiddett & Hollyforde, 2007).

Table 5.1

Distinction between skills and competencies

Skills		**Competencies**
Nature of manifestation	Overt behavioural system or sequence	Cognitive meditational activities
Nature of tasks	Routine or programmed	Non-routine or unprogrammed
Environmental characteristics	Handle stable environment	Handle complex volatile environment
Generalisability to other tasks and situations	Limited to similar tasks and situations	Extended to a wide variety of tasks and situations
Locus/mainspring	Task-driven	Person dependent
Generic potential	Fixed	Unlimited

(Source: Kanungo & Misra, 1992, p.1322).

The use of these terms in different ways can be linked to two distinct schools of thought, with the term competency linked to the American school and competence associated with the UK school (Phelan, 2014). Table 5.2 presents the differences between competences and competencies. According toLe Deist and Winterton (2005), competence refers to a typology; cognitive competence captures both knowledge and understanding; functional competencies capture skills; social competence captures both behavioural and attitudinal competencies; and meta-competencies facilitate the acquisition of the other substantive competencies.

Table 5.2

Key differences between competency and competence

Competency (plural competencies)		**Competence (plural competencies)**
Focus	The person	The job / role
Summary	Behaviours observed in effective people	Related tasks in the job / roles
Examples	Interpersonal effectiveness	Dealing with enquiries
Performance indicators	Behavioural statements	Outputs from the job, task or role
Examples	Adopts style of interaction to take account of feelings of others Shares information to gain commitment from others	Accurately completes enquiry forms Replies within agreed deadlines Accurately enters details on database

(Source: Whiddett & Hollyforde, 2003, p.6).

5.3.5.4.2 Entrepreneurial skills

In order to run a successful business, there is a need for an entrepreneurial and managerial skill set, which include leading and managing people, managing finances, personal organisation, innovation, strategic planning and investigating opportunity (Rae, 2007). The ability to recognise the opportunity as an entrepreneurial behaviour is an indicator that Chell (2008) coined alertness, further stating that social and strategic competencies are indicators for networking and growing and sustaining the business. She set up the criteria for judging entrepreneurial behaviour as highlighted in Table 5.3.

Table 5.3

Criteria for judging entrepreneurial behaviour

Creativity	Resourcefulness	Judgement	Resilience
Alertness	Persuasiveness	Risk Propensity	Flexible
Perception & Interpretation	Self-Efficacy	Social Competence	Manipulative
Business Acumen	Self- Confidence	Political Astuteness	Stamina
Social / Market Awareness	Leadership	Adeptness	Strategic Competence

(Source: Chell, 2008, p. 211).

As far as Lazear (2004) is concerned, an entrepreneur may not necessarily possess a single skill but rather be a jack-of-all-trades (JAT), adding that to be successful, he or she should be equipped with a variety of skills to put together many ingredients required to create a successful business (Lazear, 2005). However, acquiring a wider skill set using the JAT approach was found not to be significant in a longitudinal study with Italian entrepreneurs (Silva, 2007). Nascent entrepreneurs who do not possess a complete skill set may acquire additional skills (Lazear, 2004).

The skills acquisition is supported by Lichtenstein and Lyons (2001), who developed a framework termed entrepreneurial development system (EDS) applied in the rural areas of the United States to establish areas of entrepreneurial capital. The system is premised on the fact that (1) ultimate success in entrepreneurship requires the mastery of a set of skills; (2) these skills can be developed; and (3) entrepreneurs do not all come to entrepreneurship at the same skill level. Table 5.4 below presents the Entrepreneurial Development System skills framework. Qualitative interviews carried out in a study by Lou and Baronet (2012) with entrepreneurs in France, Canada and Algeria on the skills and competencies identified the following clusters of skills and competencies: (1) Opportunity recognition and exploitation (2) Financial management (3) Human resources management (4) Marketing and commercial activities (5) Leadership (6) Self-discipline (7) Marketing and monitoring (8) Intuition and vision.

Table 5.4

Entrepreneurial Development System skills framework

Technical Skills	o Operational: the skills necessary to produce the product or service o Supplies/raw materials: skills to obtain them, as necessary o Office or production space: the skills to match needs and availability
Managerial Skills	o Management: planning, organising, supervising, directing, networking o Marketing/sales: identifying customers, distribution channels, supply chain o Financial: managing financial resources, accounting, budgeting o Administrative: people relations, advisory board relations o Higher-order: learning, problem-solving
Entrepreneurial Skills	o Business concept: business plan, presentation skills o Environmental scanning: recognise market gap, exploit market opportunity o Advisory board and networking: balance independence with seeking assistance
Personal Maturity Skills	o Self-awareness: ability to reflect and be introspective o Accountability: ability to take responsibility for resolving the problem o Emotional coping: emotional ability to cope with a problem o Creativity: ability to produce a creative solution to a problem

(Source: Schallenkamp & Smith, 2008 in Phelan, 2014, p. 88).

Though Lou and Baronet started distinguishing between skills and competencies, a separate discussion on entrepreneurial competencies must be addressed.

5.3.5.4.3 Entrepreneurial competencies

The competency approach has become a popular means to study entrepreneurial characteristics as entrepreneurial competencies have been identified as important to business growth and success (Mitchelmore & Rowley, 2010). These competencies help us understand why some succeed and others fail in the business environment (Omrane & Fayolle, 2011). A distinction is made between entrepreneurial and managerial competencies, with entrepreneurial competencies being considered important to starting a business and the managerial ones needed for its growth and survival (Man et al., 2002). This competency approach is criticised for not being definitive as few competencies are possessed by all entrepreneurs; some are possessed by non-entrepreneurs (Bridge et al., 2009). Brinckmann (2007) suggests that literature on entrepreneurial competency is in its early stage while competency, in general, is firmly established in wider business and management literature. White first introduced competency as a concept to describe motivation and superior job performance. David McClelland followed by describing characteristics that strengthen superior performance as competence, and ultimately tests were developed to predict competence, known as the job competence assessment (Phelan, 2014).

On competency in entrepreneurship literature, an investigation found that two constituents surfaced: (1) established specific entrepreneurial competencies needed for various industries are sought for, and (2) self-assessed competencies of individual entrepreneurs with business performance were linked (Phelan, 2014). In operationalising the competency of firm founders, Chandler and Jansen (1992) assume that firm founders have entrepreneurial, technical-functional and managerial roles. Chandler and Jansen surveyed about 134 Utah firm founders to provide self-ratings on 26 measures in six competency dimensions where five factors emerged: (1) the ability to recognise opportunity, (2) the drive to see firm creation through to fruition, (3) technical-functional competence, (4) political competence and (5) human and conceptual competence.

A subsequent study carried out by Chandler and Hanks (1994) explored the moderating effects of founder competence on venture performance of manufacturing

firms in Pennsylvania and found that a direct relationship between a founder's entrepreneurial and managerial competence and firm performance exists. This study demonstrated that not experience alone but competency too may be effective to predict firm performance.

Some years later, Man and colleagues (2002) further developed an entrepreneurial competency that clustered (1) opportunity, (2) relationship, (3) conceptual, (4) organising, (5) strategic and (6) commitment competencies. Propositions made by Man and others are that entrepreneurs need to hold a balance on a variety of these competencies and that a lack of organising competency will affect the development of organisational competency, which will further hinder the utilisation of strategic and commitment competencies. In order to test the framework developed by Man and colleagues, Man et al. (2008) did an empirical study to determine the relationship between entrepreneurial competencies and SME performance in the Hong Kong service sector, but it became difficult to comment on their findings resulting from lack of clarity on the research design (Phelan, 2014).

Table 5.5

A framework for entrepreneurial competencies

Entrepreneurial Competencies	o Identification and definition of a viable market niche o Development of products of services appropriate to the firms chosen market o Idea generation o Environmental scanning o Recognising and envisioning taking advantage of opportunities o Formulating strategies for taking advantage of opportunities
Business and Management Competencies	o Development of the management system necessary for the long term functioning of the organisation

	o Acquisition and development of resources required to operate the firm o Business operational skills o Previous involvement with start-ups o Managerial experience o Familiarity with industry o Financial and budgeting skills o Previous experience o Management style o Marketing skills o Technical skills o Industry skills o The ability to implement strategy o Familiarity with the market o Business plan preparation o Goal setting skills o Management skills
Human Relations Competencies	o Development of the necessary organisational culture Delegation skills o The ability to motivate others individual and in groups o Hiring skills o Human relations skills o Leadership skills
Conceptual and Relationship Competencies	o Conceptual competencies o Organisational skills o Interpersonal skills o The ability to manage customers o Mental ability to coordinate activities o Written communication skills o Oral communication skills

	o Decision-making skills o Analytical skills o Logical thinking skills o Deal-making skills o Commitment competencies

(Source: Mitchelmore & Rowley, 2010 in Phelan, 2014, p. 97).

Another conceptual framework that proposed a distinction between entrepreneurial and business management competencies was developed by Mitchelmore and Rowley (2010). This framework was generated from using a review of literature on entrepreneurial competencies as presented in Table 5.5 above.

Mitchelmore and Rowley (2013) applied the framework (named Female Entrepreneurial Competency-FEC) in a survey of female entrepreneurs in England and Wales out of which four clusters of competencies were identified: (1) personal and relationship, (2) business and management, (3) entrepreneurial and (4) human relations competencies. The FEC was empirically tested and found that each cluster's specific skill and competencies are less generalised; additionally, the FEC strongly contributes to a minimal discourse on entrepreneurial competency (Phelan, 2014). Therefore, it is imperative to review the literature on farm entrepreneurial competency.

5.3.5.4.3.1 Farming entrepreneurship

Phelan (2014) regards Wilcox as one of the early writers on farming operation where farmers discharge their entrepreneurial function and how this is performed that are essential human factors in farm management. A study confirming Wilcox's assertion was undertaken by Westermarck, who investigated entrepreneurial human capital variables of Swedish farmers, including age, theoretical and vocational education, and mental ability. The study found that younger farmers had a greater enterprise outlook as they were using farm business planning advisory services.

It may sound like a lot has been done on studying farm entrepreneurship, given that the phenomenon has been covered for over eighty years. Unfortunately, a literature review shows the opposite. Alsos et al. (2003, p.436) maintained that "there is still a paucity of knowledge about which factors trigger the start-up of entrepreneurial activities among farmers."

McElwee (2008) developed a typology of farmers as entrepreneurs, farmers, business persons, social animals, social entrepreneurs and custodians of the countryside. Couzy and Dockes (2008) similarly generated a typology of farming in two French regions comprising six farming profiles, with some having a managerial identity and others an entrepreneurial identity. Couzy and Dockes's profiles ranged from modernist farmer, traditional farmer, dependent farmer, farming entrepreneur, entrepreneurial creators and farmer with personal objectives.

Alsos et al. (2003) conducted 16 in-depth interviews with farm households in Norway and found three types: (1) the pluriactive farmer - farmers bound to engage in business activity, (2) the resource exploiting entrepreneur - farmers who do not have strong ties to the core farming activity, and (3) the portfolio entrepreneur - farmers who are motivated to start businesses to exploit business ideas. This confirms that farmers are not a homogenous set of actors when addressing their involvement in entrepreneurship (McElwee & Smith, 2012). The next section presents the farm entrepreneurial skills and competencies.

5.3.5.4.3.2 Farm entrepreneurial skills and competencies

The nature of skills identifiable from farmers who present entrepreneurial orientation includes (1) business and management skills such as accountancy, financial capability, strategic planning and people management, (2) co-operation and networking skills, (3) information technology skills, (4) marketing and selling skills, (5) entrepreneurial quality and values and (6) technical and professional skills such as exact farming skills (McElwee & Robson, 2005). Another study conducted by Hill (2007) in Phelan (2014) generated a set of skills ranging from business planning, financial management, people management, sales and marketing, collaboration to leadership and risk management. Though the list outlines skills that are generally entrepreneurial in nature, they may also be described as business and management skills and competencies (Phelan, 2014).

An EU fund developed a project to examine the economic, social and cultural factors that hinder or stimulate the development of the 'Entrepreneurial Skills of Farmers (ESoF)' across six countries (i.e., Switzerland, the UK, Finland, the Netherlands, Poland and Italy). The initial phase of the ESoF project interviewed about 125 experts to identify requisites skills for succeeding in a farming business, while the

subsequent phase gathered data using questionnaires and follow-up interviews; these were administered to and conducted with 151 farmers representing across the six nations (Phelan, 2014). Skills identified in the initial phase by experts were clustered (see Table 5.6) as professional, management, opportunity, strategic and co-operation and/or networking skills.

Furthermore, these experts identified additional traits and human capital variables that play a role in determining farm success, such as age and educational level of farmers. Research participants mentioned a relationship between education, especially higher education and entrepreneurial success (Phelan, 2014). De Wolf and colleagues (2007) stated that with regard to age, a paradoxical relationship exists; despite younger farmers having less experience, they are in a better position and more suited to develop entrepreneurial skills.

Table 5.6

The skills that a farmer needs to succeed in business

Category	**Underlying skills**
Professional Skills	Plant or animal production skills
	Technical skills
Management Skills	Financial management and administration
	Human resource management
	Customer management
	General planning
Opportunity Skills	Recognising business opportunities
	Market and customer orientation
	Awareness of threats
	Innovation skills
Strategic Skills	Risk management skills
	Skills to receive and use feedback
	Reflection skills
	Monitoring and evaluation skills
	Conceptual skills

Cooperation / Networking Skills	Strategic planning skills Strategic decision-making skills Goal-setting skills Skills to cooperate with other farmers and companies Networking skills Team-working skills Leadership skills

(Source: de Wolf et al., 2007, p.688).

Table 5.7 below depicts personal characteristics, attitudes and other factors reported by participants in the ESoF project as skills-related remarks.

Table 5.7

Skills-related remarks made by ESoF respondents

Personal characteristics	Attitudes	Other
Flexibility, dealing with uncertainties	Positive attitude	Education
Creativity, innovative	Pro-active attitude	Experience
Ambition, motivation, commitment	Open-minded	Age
Self-knowledge	Open to new things	Gender
Feeling responsible	Attitude to feedback	
Courage to do new things	Being interested in the job	
Carefulness	Risk-taking attitude	
Honesty		
Immunity to stress		
Communicativeness, politeness		
Humour		
Dynamism		

(Source: De Wolf et al., 2007, p.112).

The subsequent phase of the ESoF project that focused on farmers highlighted that professional and managerial skills form their basic requirement. In contrast, opportunity, strategic, co-operation and networking skills were considered proper

entrepreneurial skills. Some of the skills were deemed to be higher-order entrepreneurial in areas such as (1) recognising and realising opportunities, (2) networking and utilising contacts, and (3) creating and evaluating a business strategy (Vesala & Pyysiäinen, 2008a).

Generally, the ESoF project findings suggest that a discussion on entrepreneurial skills has to be linked with discussing the roles and strategies that farmers are adopting and giving careful consideration to the geographical area where all these take place (Morgan et al., 2010). Another proposition made by farmers is where they agree that entrepreneurial skills are relevant and very important for their business activities (Vesala & Pyysiäinen, 2008b).

A study conducted by Dutch dairy farmers, explored the craft, managerial and entrepreneurial competencies in relation to psychological variables and venture success (Bergevoet, 2005). Using craft, managerial, entrepreneurial, opportunity, strategic, conceptual, organising and relationship competencies as well as skills, Bergevoet found a positive relationship between higher scores in these competencies and entrepreneurial venture success. In a subsequent study, Bergevoet and Van Woerkum (2006) found that entrepreneurial competencies can be enhanced using farmer-led study groups.

Phelan (2014) further reported that the Wageningen University in the Netherlands contributed significantly through its ‘Education and Competency Study Group’ where several projects were carried out using mainly male and fellow researchers’ (2002) competencies to explore entrepreneurial competencies in the agrifood sector (e.g., farmers, market-gardeners and greenhouse horticulturalists). Entrepreneurship is seen as a specific profession where knowledge and skills are needed for successful professional performance, thus conceptualised as professional competence (Mulder et al., 2007).

Lans et al. (2007) conducted a study with 20 greenhouse horticulture entrepreneurs who were asked to indicate the competencies they had developed over the past five years and those they believe they could acquire in the future. Lans and colleagues also provide triangulation of data by including internal assessment of these competencies by an employee or co-worker together with an external assessor (e.g., a consultant). Competencies such as learning orientation and facility for self-

management were considered essential by entrepreneurs, co-workers and consultants.

Phelan (2014) used a mixed-methods approach to analyse the entrepreneurial competencies required for diversifying into farm tourism in the North West of England. Since the study involved two phases, Phelan surveyed 118 diversified farm tourism businesses in the initial phase and found that farmers value business and management competencies at the expense of entrepreneurial competency. The second phase used a Q-methodology in analysing data from 15 farm tourism entrepreneurs where a 42-item instrument was used to gather data. The Q-analysis provided three distinct perspectives on entrepreneurial skill and competency, which farmers identified as necessary for successful diversification: (1) the Reflective Leader, (2) the Opportunity Aware Organiser and (3) the Opportunity Driven Innovator.

Recently, Arellano and Reyes (2019) randomly sampled and interviewed 40 rice farmers in the Philippines (Laguna) to analyse the effects of personal entrepreneurial competencies on production and technical efficiency. This study indicated that rice farmers generally had weak opportunity seeking, persistence, commitment to work contract, demand for quality/efficiency, risk-taking, goal setting, and systematic planning and monitoring competencies. The study found that these rice farmers had a strong information-seeking competency.

Seeing that the debate on farm entrepreneurial competency is still at an infancy stage, the current study is better positioned to positively contribute to this discussion, particularly from an African point of view. The classic grounded theory adopted in this study could bring a totally different perspective in the farm entrepreneurial competency discussion regarding the methodologies adopted in the previous studies.

5.4 Literature review: Competency model approaches

This section addresses the definition of the term competency, presents the steps involved in developing a competency model and the methods used to identify competencies. The discussion concludes by presenting the different competency approaches used in various contexts.

5.4.1 Defining competency or competence

Competency and/or competence cannot be used interchangeably. “Competence is a combination of the complex attributes of knowledge, skills, and attitudes; with the ability to make professional judgement and to perform intelligently in specific situations” (Leung et al., 2016, pp. 189-190).

> Competency is described as an underlying characteristic of performance; it is multifaceted and difficult to measure. Broadly speaking, competence reflects a person's cognitive approach to a task, encompassing the multiple attributes of knowledge, skills and attitudes, whereas competency highlights a person's ability to perform those tasks within the defined context of professional practice. (p. 190)

According to Schippmann (2010, p. 198), competencies refer to “measurable, organizationally relevant, and behaviourally based capabilities of people.” McLagan defines competency as “an area of knowledge or skill that is critical for producing key outputs” (Grobler *et al*., 2011, p. 560). Competency includes “a broad range of knowledge, skills, traits and behaviours that may be technical in nature (e.g., being a good computer programmer), relate to interpersonal skills (e.g., having good communication skills) or be business-orientated (e.g., being a good financial advisor)” (Van Aswegen, 2012, p. 135). According to Spencer and Spencer, it is “an underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation.” Similarly, DuBois views it as “an underlying characteristic that leads to successful performance in life” (Grobler *et al*., 2011, p. 561). Pulakos (2009) adds that knowledge, skills, abilities and other personal characteristics are most instrumental for achieving important job outcomes and contribute to organisational success.

A Cambodian study examined the core competencies among the agricultural development professionals famously known as extension workers. The survey used in that study consisted of 48 competencies representing eight core competencies; each competency had a level of importance and competency parts. The findings showed that extension workers in Cambodia deemed all competencies highly or very highly important to their extension work. Conversely, these extension workers’ perceived level of competency in those competencies appeared not to meet the expectations. Their level of competency in all, but communication skills and diversity significantly differed by gender, but not by age and experience. The study further found

four methods of acquiring core competencies (pre-service, in-service, basic induction training, and participation in seminars, workshops, and webinars) as appropriate (Suvedi et al., 2018).

This study adopts the view held by Spencer and Spencer, and DuBois because this one is much more inclusive of knowledge or skill and any number of other characteristics, such as the level of motivation and personality traits. The following section encompasses a discussion about the types of competencies.

5.4.2 Types of competencies

Kuijpers (2003) cited in De Vos *et al*. (2015) classifies the types of competencies at work into functional, learning and career competencies. The following section elaborates on each of these competencies.

5.4.2.1 Functional competencies

These competencies are defined as the knowledge and skills necessary for employees to successfully perform their jobs since they are based on employees' tasks and roles. They differ according to the industry and function. For example, "developing and writing new software programs, testing these programmes and debugging them are functional competencies that are specifically relevant for IT consultants" (De Vos et al., 2015, p. 2546).

5.4.2.2 Learning competencies

According to Kuijpers (2003) cited in De Vos *et al*. (2015), learning competencies are individual characteristics that enable employees to develop new functional competencies. De Vos *et al*. (2015) thus argue that displaying an ongoing commitment to developing oneself and taking ownership are examples of learning competencies that are considered important across various industries and organisations.

5.4.2.3 Career competencies

Career competencies are characteristics that enable employees to guide their functional and learning competencies in the right direction. They refer to the "employee's creation of a career identity by gaining insight into their own possibilities and motives, and to the employee's ability to proactively translate these insights into concrete actions that can direct their career" (De Vos *et al*., 2015, p. 2546).

5.4.3 Competency components

In their study on the process of intergenerational farm transfer, Uchiyama et al. (2008) cited in Van Niekerk and others (2015) argue that this is embedded in both the physical and the intangible assets. Physical assets include agricultural land, while intangible assets include values, ethics, knowledge, skills, networks and attitudes, which generally receive little attention in the literature than the physical assets. “These intangible assets are always difficult to observe and quantify, yet they have an influence on the future performance of the farming business” (Van Niekerk *et al*., 2015, p. 68). The following section outlines the components of competency from the perspective of an employee.

5.4.3.1 Skill

Skill is a capability used on the job that can be seen directly by someone watching the employee (Van Aswegen, 2012). According to Brits (2012, p. 28), skill “is an ability that has been acquired by training and education.” Vazirani (2010) describe it as a person’s ability to perform a certain task, such as a surgeon’s skill to perform a surgery.

5.4.3.2 Knowledge

“Knowledge is the body of information in a particular subject area that the employee needs to be able to perform the job efficiently” (Van Aswegen, 2012, p. 60). Brits (2012, p. 27-28) considers knowledge as “factual information that a person knows.” Vazirani (2010) describes knowledge as information and learning resting in a person, such as a surgeon’s knowledge of human anatomy.

5.4.3.3 Ability

Ability refers to mental or physical activities that a new employee should be able to perform; for example, a computer programmer should be able to install required programmes into a computer (Van Aswegen, 2012, p. 60).

5.4.3.4 Attributes

According to Brits (2012, p. 27), attributes “include the personal characteristics, traits, motives, values or ways of thinking that affect an individual’s behaviour.” The next section elaborates on the terms outlined in the definition of what attributes are.

5.4.3.4.1 Traits

Traits are personality characteristics exhibited in a large number of situations (Robbins *et al*., 2003). According to Morgan et al. (1986, p. G-24), traits are "aspects of personality that are reasonably characteristic of a person, are relatively consistent over time, and distinguish that person in some way from other people," or are inherent compositions that cannot be changed but are characteristics that can be learned. These components are malleable by the entrepreneur's actions and conscious decisions to progress (Hand, 2010).

5.4.3.4.2 Motive

The Pocket Oxford Dictionary defines a motive as "what induces a person to act in a particular way" (Thompson, 1992, p. 530). Vazirani (2010) describes motives as emotions, desires, physiological needs or similar impulses that prompt action; an example of surgeons scoring high on interpersonal orientation is taking personal responsibility for working well with other members of the operating team.

5.4.3.4.3 Values

"Values represent basic convictions that "a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (Robbins *et al*., 2003, p. 66). Hand (2010, p. 16) views values as "principles held to be important in one's life or business that lead one toward goals, actions, motivation, and end-state attainment. Ethical values are behavioural principles that guide one's attitudes and behaviours."

5.4.3.4.4 Behaviour

"Behaviour is the way a person acts" (Van Aswegen, 2012, p. 134). The paragraphs below highlight and discuss the competency model, competency approaches, as well as several methods used to identify competencies.

5.4.4 Competency identification methods

The methods used to identify areas of competency include those listed in the section below.

5.4.4.1 Job Competencies Assessment Method (JCAM)

A method that relies on the collection and analysis of data obtained through a process called behaviour event interviewing, which is one of the first methods created to

provide information on workers and the work they do. It involves asking a series of detailed questions about the actions performed in the work setting that workers perceive to be successful or unsuccessful and their thoughts, feelings and outcomes. Researchers should conduct six to 12 individual interviews with workers, and once completed, they should work together to identify competencies. From this process, three sets of characteristics are identified: those used by exemplary performers only, those used by both exemplary and fully successful performers and those cited by fully successful performers. A problem with this method is that key employees must always be available for interviews, which results in lost work time (Grobler *et al*., 2011).

5.4.4.2 Competency Menu method

This method relies on competency lists developed by practitioners in the private and public domains, many of which are readily available on the internet. For these lists to be useful, they should be comprehensive for the work they embrace and represent the current state-of-the-art as these issues affect the validity and reliability of the competency models developed from them (Grobler *et al*., 2011).

5.4.4.3 The Modified DACUM method

Known as 'Developing A CurriculUM' method, this is a popular job analysis process that uses focus groups to gather data, analyse, and present results. It uses abstract competencies such as patience. Work activities carried out by employees daily to achieve results are identified by a group of work experts. Challenges with this method involve inadequate time and resources allotted to the project, resistance from staff and lack of continued management support and commitment. These challenges may be overcome by using the same language across the organisation, communicating and teaching competencies more effectively, devoting sufficient time, implementing and maintaining alignment of competencies with the organisation strategy, and not developing competency models in isolation (Grobler *et al*., 2011).

5.4.5 Competency model

According to Schippmann (2010, p. 198), a competency model refers to "the research procedure used for arriving at a definition and structure of the requirements for individual success for a given target of jobs." Generally, the main features of this model include a focus on individual capabilities required for success, emphasis on broadly applicable individual characteristic capabilities, a clear link to broad business strategy,

and a coherent organisational development and change emphasis (Schippmann, 2010). Vazirani (2010) refers to a competency model as a descriptive tool that identifies the competencies needed to operate in a specific role within a job, occupation, organisation or industry. Schippmann in Vazirani further states that a competency model would depict a group of about seven to nine competencies for a particular job in a competency model as informed by the work and organisational environment. Alldredge and Nilan (2000) described the development of an executive-level global competency model as 3M. The work on the model was completed in partnership with the company's top executives and a global team of in-house professionals. The competency model itself consisted of 12 competencies and generalisable behavioural anchors for each competency.

Vazirani (2010) reviewed competency literature and attempted to shed some light on the field of competencies and competency models. Additionally, the advantages and challenges of using a competency model in an organisation were considered.

Prifti et al. (2017) analysed employee competencies for employees with higher education in Industry 4.0. An Industry 4.0 competency model is based on a behavioural-oriented approach concerning three variants: Information Systems, Information Technology and Engineering developed by extending the SHL Universal Competency Framework through a structured literature review and focus groups with academic staff. This study contributed to research by providing a starting point for further research regarding employee competencies for Industry 4.0 and contributing to practice as the provided competency model could be applied to Industry 4.0 job descriptions.

5.4.5.1 Advantages for using competency models

A competency model has several advantages, such as enhancing the recruitment process by facilitating the placement of candidates to appropriate opportunities. This model further enhances the development of employees by linking the development activities to corporate goals, organising areas of talent strengths and weaknesses, and serving as development targets for those who aspire to a senior leadership position (Vazirani, 2010).

Vazirani further states that a competency model enhances performance management and identifies training needs and employee development. It provides a unified corporate culture across business units by creating a common culture, especially unifies employees in a decentralised corporate environment. It establishes connectivity through the integration of HR processes by aligning the HR system vertically with the other HR functions to ensure harmony across many HR activities that impact human performance. It establishes clear expectations for success by enabling employees to self-manage their standardised performance.

5.4.5.2 Challenges for using competency models

Total reliance solely on competency models as a solution for every hiring and selection decision or other managerial functions can be a problem (Vazirani, 2010). Cockerill et al. (1995) further caution against considering them as the only tool utilised in meeting education and training needs.

Framing competencies as an outcome can ignore the mental and personal processes used in developing and demonstrating skills and exploiting knowledge (Ashworth & Saxton, 1990). Therefore, if a competency model is used to strategically select only staff that fit this model and do not rely on developmental resources to facilitate the acquisition of competencies where a gap exists, certain competencies that may assist a person in being successful in their job may be overlooked (Vazirani, 2010).

Awareness of the pros and cons of using competency modelling made me realise its usefulness in developing job description and overreliance, leading to overlooking some other important competencies that could improve organisational effectiveness. On weighing the two sides, I concluded that the gains of using competency models outweigh their challenges as they provide the basis against any litigation employers could face from employees regarding the job content. Therefore, for the current study, a competency model is a written description of all competencies that a firm needs (Grobler *et al.*, 2011).

5.4.6 Competency approaches

Competency approaches have evolved over a long period of time and became popular in work settings since the Second World War. Three schools of thought around these

approaches are the differential psychology approach, the educational and behavioural psychology approach, and the management sciences approach (Naughton, 2014).

The differential psychology approach focuses on human differences, in particular the capabilities that are hard to develop. Practitioners of this approach acquire training in psychology since they emphasise intelligence, cognitive abilities, hard-to-develop physical abilities, values, personality traits, motives, interests and emotional qualities. Their focus is on process capabilities and drives, rather than subject matter or knowledge and single out qualities that distinguish superior performers from average or typical ones (Naughton, 2014).

The educational and behavioural psychology approach "emphasises the unique and more innate abilities that people bring to work; the educational-behavioural approach is driven by the desire to shape and develop people so that they can be successful" (Naughton, 2014, p. 36). Practitioners of this approach do acquire education and training background; thus, their models include subject matter and knowledge, as well as all competencies that are important to quality performance (Naughton, 2014).

The management sciences approach is emphasised by job evaluation consultants, personnel administrators and remuneration specialists, re-engineering and total quality experts and task analysts as they produce job descriptions and job evaluations. The effective performance is guided by those models that include task and activity lists, as well as descriptions of tools to be used, while knowledge, skills and other personal characteristics needed to do the work may be added to the description, only come secondary (Naughton, 2014).

Prifti et al. (2017) further identified three more approaches to studying competency modelling. The behavioural approach focuses on attributes beyond cognitive ability such as self-awareness, self-regulation and social skills. This approach contends that competencies are essentially behavioural, unlike personality or intelligence but can be taught through learning and development. The functional approach argues that competencies are requirements for successfully fulfilling a task by restricting competencies to the skills and know-how required for conducting a task at hand. The multi-dimensional approach describes competencies as gathering

individual competencies required from individual and organisational competencies required on the organisation level to achieve the desired results.

Consequently, the current study adopted a multi-dimensional approach in that farm owners, farm managers, farmworkers and professional advisors were all involved in contributing to the development of the competency model for grain farmers. Therefore, various views from individual and organisational perspectives have been incorporated into one project.

5.5 Applying a competency model to predict successful grain farming

In applying a competency model to predict successful grain farming, the same model developed by Prastacos and others cited in Grobler *et al.* (2011) was adopted in this investigation. The specific method used to develop those competencies was the job competencies assessment method. Though the JCAM method recognises the use of workers strictly for gathering data, its suitability in the current study was informed by the fact that generally emerging farmers are perceived to be the ones possessing all the competencies to transfer them to their workers in the long run. The central research questions for this study are as follows:

1 How is a commercial grain farmer defined?
2 What are the indicators of successful grain farming?
3 What is the importance of grain farmers in agriculture?
4 Which core competencies (skills, knowledge and personal attributes) should grain farmers possess?
5 What are the best methods of acquiring grain farming competencies?
6 What would be included in a competency model for grain farmers in South Africa?

For this study, as discussed in Chapter 3, the following steps were followed to develop a competency model for commercial grain farmers:

1. Step 1 (Data collection)

   This step entailed gathering data using a semi-structured interview. The questions as contained in the interview schedules were directed to farmers, farmers' workers and experts, respectively (see Appendices A, B, C and D).
2. Step 2 (Data analysis)

In grounded theory, data gathering and analysis happen simultaneously. Therefore, open coding started in the first interview (Charmaz, 2006); I went through the data line by line and attached codes to see what emerged from the data. Following this, I did selective coding; selectively looked for cases that illustrate themes and made comparisons and contrasts after most or all data collection was complete. Finally, I did theoretical coding where categories were related to each other and the relationships between them were considered (Neuman, 1997; Urquhart, 2013).

3. Step 3 (Validation and verification of the initial competency framework for commercial grain farming)

   To verify and validate the initial model, I revisited some of my research participants and asked their opinion on the newly developed model. Based on their inputs, suggestions to modify the initial model were dealt with. Over and above this, experts were involved in validating the initial model.

4. Step 4 (Literature review summary)

   This last step highlighted in a summary format the literature review on the competency of commercial grain farmers.

5.6 Conclusion

Grounded theory requires that a detailed review of literature follows after the analysis of data. In this chapter, I indicated that during the colonial period and post-independence era on the African continent, many models of commercialising agriculture have been in existence and were explored. The extent to which they provide benefits and losses were also considered.

This literature review expanded on integrating farming into entrepreneurship, which can be studied from various approaches: trait, behavioural, opportunity and human capital perspectives. The recent project carried out in the EU that saw the development of the 'Entrepreneurial Skills of Farmers (ESoF)' across six countries made considerable strides in trying to close the gap that McElwee (2008) first identified, which involves knowing the skills farmers need to possess to succeed in their business. Regarding the competency approaches, I stated that the current study adopted a multi-dimensional approach. Farm owners, farm managers, farmworkers and professional advisors were all involved in contributing to the development of the

competency model for grain farmers. The next chapter presents a competency model for commercial grain farmers.

CHAPTER 6: PRESENTATION OF A COMPETENCY MODEL FOR COMMERCIAL GRAIN FARMERS

6.1 Introduction

This chapter presents a detailed discussion about the steps followed to construct a competency model and indicate the elements or variables that formed the intended competency model.

6.2 Steps in the construction of the competency model (data and theory)

In constructing the competency model in this study, I followed the steps as set out below:

6.2.1 Step 1 (Data collection)

A brief literature review was done while embarking on a proposal for the current project. In it, I purported to answer the following key questions that would guide the whole research study:

1 How do farmers define a commercial grain farmer?
2 What are the indicators of successful grain farming?
3 What is the importance of grain farmers in agriculture?
4 Which core competencies (skills, knowledge and personal attributes) should grain farmers possess?
5 What are the best methods of acquiring grain farming competencies?
6 What would be included in a competency model for grain farmers in South Africa?

I used semi-structured interviews as a data gathering tool to help me answer the questions mentioned above. The interview schedules containing the questions were directed to research participants: farmers, farm managers, farmers whose businesses went under, farmworkers and professional advisors/experts, respectively (see appendices A, B, C and D).

6.2.2 Step 2 (Data analysis)

This process started with open coding; I went through the data line by line and attached codes to see what emerged from the data. From there, I did selective coding and selectively looked for cases that illustrate themes and made comparisons and contrasts after most or all data collection is complete. Finally, I did theoretical coding

where categories were related to each other and the relationships between them were considered (Neuman, 1997; Urquhart, 2013).

I followed Mathafena's (2015) approach in her study to identify the emergence of themes and sub-themes from the data; she stated that the analysis process involves careful reading and re-reading of the data to identify themes, patterns and concepts. With open coding, clustering the research questions helped to formulate themes (see Table 6.1).

Table 6.1

Summary of the open coding process

Themes	Research questions
Defining a commercial grain farmer	Question 1
Grain farmer competencies	Question 2
Indicators of successful grain farming	Question 3
Role of grain farming	Question 4
Methods to acquire grain farming competencies	Question 5

On completion of the open coding, which yielded themes, I did selective coding where sub-themes emerged that are substantiated and supported by excerpts from the interview scripts. A summary of the selective coding process is presented in Table 6.2.

Table 6.2

Summary of the selective coding process

Selective theme	Sub-theme
Defining a commercial grain farmer	Scale of operation; Independence; Own or leased land; Turnover
Grain farmer competencies	Work dedication; Planning; Financial management; Planting skill; Soil preparation; Time management skill; Passion; Locality; Emotional stability; Determination; Humbleness/arrogance; Patience; Production skills; Intelligence; Work smart; Weather knowledge; Human skill; Technology
Indicators of successful grain farming	Financial stability; Farming implements; Ability to help others; Output per unit area

Role of grain farming	Food security; Job creation; Income generation; Economic growth
Methods to acquire grain farming competencies	Early child exposure to farming environment; Person's own preferred method; Openness to mentorship; Practical training; Educational institutions

6.2.3 Step 3 (Toward the development of the initial competency model for commercial grain farmers)

In Chapter 4, theoretical coding led to identifying the interrelatedness and the relationships between the concepts, themes and sub-themes, leading to developing the initial competency model for commercial grain farmers. Paull and colleagues (2013) identified sense-making as a process of understanding information and putting it into context to make even more sense of it. Similar to Mathafena (2015), I also searched throughout the data gathering and analyses stages for information in the data that could lead to developing a competency model for commercial grain farmers. Furthermore, the sense-making of the data that resulted in the initial and proposed model for commercial grain farmers was supported and influenced by a combination of prior knowledge (deductive) and emergent insights (inductive) from the data (see Table 6.3). Thomas (2006) refers to inductive analysis as a detailed process of reading the data to derive concepts, themes, models and frameworks, while deductive data analysis sets out to test and illuminate consistency with prior assumptions, knowledge and theory.

Table 6.3

Summary of the initially proposed competency model for commercial grain farmers

Concept	Explanation	Source
Commercial grain farming	Farming in grain on a massive scale	Deductive and inductive
Individual characteristics	Person's unique characteristics	Deductive and inductive
Organisational characteristics	Factors influencing a company from within	Deductive and inductive
Environmental characteristics	Factors influencing a company from outside	Deductive
Competency	Covers the skills, knowledge and personality attributes	Deductive and inductive
Competency methods	Ways of acquiring competencies	Deductive and inductive
Success indicators	Signs of progress in farming enterprise	Deductive and inductive

Table 6.3 summarises the key concepts contained in the initial competency model for commercial grain farmers. I have also indicated what formed the concepts used to generate the model in deductive and inductive thinking.

6.2.4 Step 4 (Validation and verification of the initial competency model for commercial grain farming)

In order to test, triangulate, verify and validate the initial model, I conducted interviews in the second phase of the study with three professional advisors/experts and asked their opinion on the newly developed model. Based on their inputs, suggestions to modify the initial model were incorporated. While two participants almost completely accepted the initial model without modifications, one expert had a lot of input in bringing concepts close to the discipline of agriculture around the many key questions addressed by this study. All those modifications were added to the final model. The modifications were incorporated because this participant was directly involved with clients in the private sector, where markets and competition are the order of the day for the survival of commercial farmers.

6.2.5 Step 5 (Literature review summary)

This last step highlighted the literature review on the competency of successful commercial farmers, mainly covering two areas.

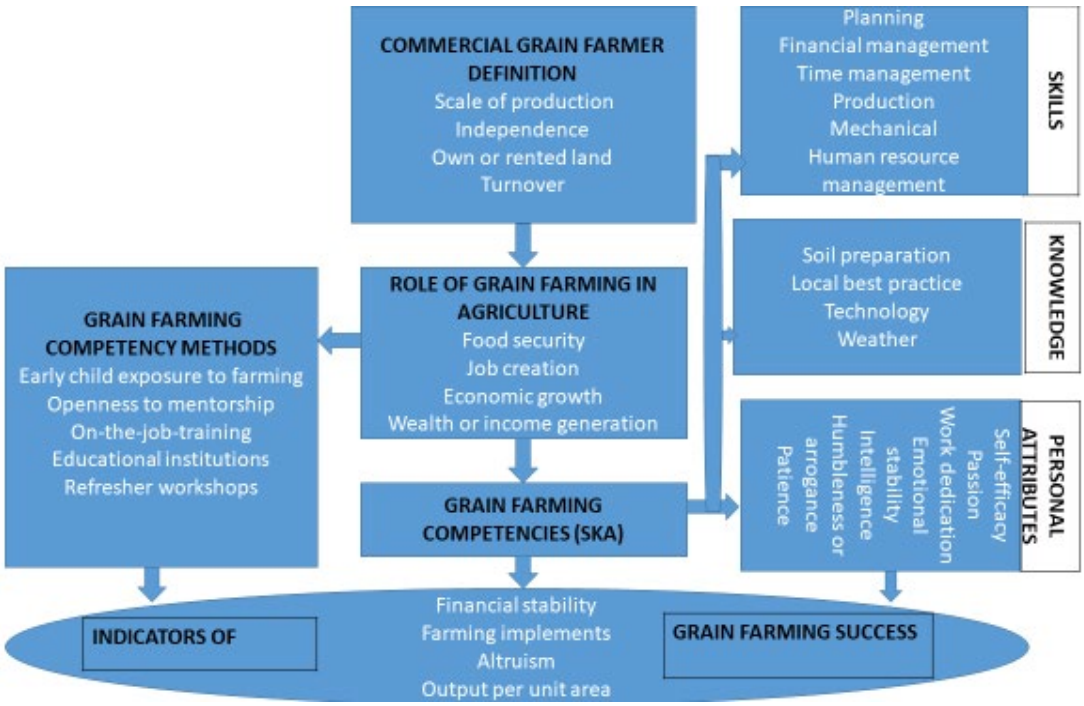
1 Key aspects linked to successful farming: focus has been on individual characteristics that influence a person's performance in running an organisation, which are mainly controllable. Brief consideration was also given to organisational and environmental characteristics within the company and those outside the company, which may not be within a person's control. Here, sources of successful farming are highlighted.

2 Competency: the focus here has been on the definition of the term, types of competency, competency components, competency model, competency identification methods and competency approaches.

Therefore, from the five steps summarised above, I developed a competency model for commercial grain farmers, as depicted in Figure 6.1.

Figure 6.1

Competency model for commercial grain farmers



6.3 Variables/elements of the competency model

As variables/elements of the competency model cannot be predetermined in grounded theory research, they were established through deductive and inductive data analysis processes. Nieuwenhuis (2011, p. 77) affirms that a grounded theory "is contrary to the scientific method, where theory is first developed and then tested empirically to verify whether the data corroborate it." The section that follows elaborates on the variables/elements contained in the model.

6.3.1 Defining commercial farming

This study has shown that commercial farming is distinguishable from other levels of farming based on four features: scale of operation, independence, turnover and own or rented land. Each of these features is discussed below.

6.3.1.1 Scale of operation

Food production for oneself and the broader community calls for intensive planning and ways to carry it out. Producing food on a large scale concerns how much to yield per unit area; thus, the quantity of the yield. One research participant (P16)

commented: “Another thing I cannot see here on commercial is that it survives on the scale of operation. So if we define it as a large scale farming operation, but before we look at size, someone with lots of money can do farming thinking that he is doing the right thing. I want this thing of the right thing to be a pillar of commercial farming because a lot of people do not do the right things. Someone may have a lot of money have large fields and big land but not doing the right things, and that may cause his downfall in farming, so that is not a commercial mindset. A commercial mindset must say you do the right thing, at the right time in a right place only.”

Though not within the context of defining a farmer, this finding is consistent with McLean-Meyinsse and Brown’s (1994) research into the determinants of success for farmers. The finding of this study directs that a commercial grain farmer is identifiable by determining the scale of operation measurable by the yield per unit area and not the size of the farm.

6.3.1.2 Independence

Independence concerns carrying out farming activities without relying on bodies, such as government assistance issuing grants or subsidies. In this regard, when a farmer makes a decision, they should be able to stand by them and account for whatever consequences they will come to bear. One research participant (P3) remarked: “you see signs because there is no one helping you, you are on your own, are independent, you are not looking at anyone, there is no like government will take care of you, no, you are on your own.”

Shane (2003b) states that psychological factors such as the desire for independence operate as general motivators. Lahiff and Cousins (2005) recommend that to change from smallholder to commercial farming, supporting smallholder farmers takes place at farm level through the provision of veterinary and agricultural extension services, research, mechanical services, credit facilities, transport services, development of irrigation and other infrastructure, training and market information. This level of support is shrinking considerably once a farmer becomes commercial in the operation of the business, as shown in the current study.

6.3.1.3 Turnover

Turnover refers to the total output a business generates at a particular time. Thus, to be a commercial grain farmer, one needs to achieve a certain level of output. Research participant, P5, commented: “The turnover is the second question, yeah but you must have land first, but if you don’t have land, working on contract basis, so can I call me myself a commercial farmer when contract expires in three years, the fourth year I don’t have any land, am I still a farmer? I’m not, because I’ll be out of business, I’m not, I’m not, that thing is not sustainable, it’s not sustainable.” Another participant (P8) went further, stating that “it doesn’t matter if a commercial farmer harvests six tons per hectare. And then if there is a possibility that a small farmer can also harvest the same yield even if he does not plough 1000 hectares. I think it will be fair to measure the performance of those two people.”

The finding regarding turnover in the current study defines how a commercial grain farmer can be identified. This finding is supported by Masika et al. (1989) where they cite an example with the livestock sector commercial farming, which may aim to achieve faster growth, less mortality, coupled with high turnover, all translating into higher profits. Khapayi and Celliers (2016) concur that higher participation in remunerative agricultural commercial output markets defines commercial farming. There is little research so far that can be used for the identification of commercial farmers in general.

6.3.1.4 Own or rented land

There must be land available to plough the ground, either owned or on a lease, where grain has to be planted. Though some advocate for land ownership, with the previously disadvantaged group perceiving this as a criterion to qualify as a commercial grain farmer, their counterparts do not perceive it as necessary. One research participant (P5) remarked: “They said no you producing more than others, commercial farmer is not the question of producing to me, is a question of having land, I don’t have land, so where do I commercialise my business.” Another participant (P6) brought out a different idea by stating that “we haven’t got our own farm. We rent from others” while participant P7 confirmed this by saying, “then they call you a commercial farmer, but then they do not include things like tractors, whether you are using yours or hired that is not considered, they only consider that ability on a farm.”

Though the debate on land ownership is important, particularly among the previously disadvantaged South Africans, the finding of this study accommodates both ownership and renting to commercialise farming. As far as this finding states, land is crucial for the sake of primary agricultural production. Khapayi and Celliers (2016) found that insufficient land availability to expand production limits emerging farmers from becoming commercial. Cousins (2009) contradicts this finding only in terms of the size of the land as smaller land is attributed to smallholder farming and bigger ones to the commercialised farmers.

6.3.2 Methods to acquire grain farming competencies

6.3.2.1 Early child exposure to farming

If children are exposed to the farming environment from an early age, chances of loving it will be high. As one research participant (P15) remarked: “If you have a child and leave him or her at home, he or she knows nothing. I say a child or children, let me put it this way I actually had been coming here on the farm as a child I had been rejoicing at driving tractors not knowing that one day I would be responsible.” Another participant (P1) took this further by including the fact that as parents we should “start our children from elementary level, if we want these children to the best commercial farmers in twenty years’ time we should ensure their foundation is right; by a right foundation, I am referring to a situation where maybe as a father to a three-year-old son. I should be going out with him so that he could have passion for agriculture. I think that is what caused the white people to attain the stage they are as commercial farmers.”

In his self-efficacy theory, Albert Bandura asserted that vicarious learning or modelling is one of the determinants of self-efficacy. Vicarious experience or modelling is based on observing another person who may be regarded as a role model, which includes the consequences of that role model’s behaviour (Krecar & Coric, 2013). Although it was used in a different context, Taylor and Bhasme (2018, p. 1) argue that “model farmers therein serve as a community repository of knowledge while also helping to translate and embed an agricultural innovation into local contexts.” This finding proposes that if farmers expose their children to farming operations in their early years, they stand a chance of developing a love for the grain farming occupation.

6.3.2.2 On-the-job training

On-the-job training is commonly known as learnership, internship or practical work where the learner acquires knowledge by doing it and learning from veterans in a practical setting. One research participant (P8) remarked: “There are many people who went to agriculture schools. But they don’t have the skill to practise it. That is where I said to you farming to me is a lifestyle; if you don’t practise it, you lose it.” Another participant (P7) confirmed the previous statement by adding that “they need to go to school, but school alone is not enough, there is this thing I do not know what you call it after attending school? You call it practical in your language. What you were reading in books should now be done practically because this book cannot get in the field.” The other participant (P6) went further, indicating that “I would suggest to get a solid young man, competent to start, he needs a lot of practical experience in this course that he is doing and physically see the things because it’s all about seeing things. You come and you have to work your fields every day because you need to see the insects in there, and the plants that are taking strain, or there’s a lot of grass, if I never came here, the grass would be tall. It’s very hands-on.” These sentiments were further confirmed by several other participants such as P3, P12, P14 and P15.

Especially for promising entrepreneurs, in-service training, which is equivalent to on-the-job training, improves the performance of businesses. Suvedi et al. (2018) found in-service training and other methods appropriate for improving core competencies of agricultural extension workers but not farmers.

6.3.2.3 Educational institutions

Findings indicate that educational institutions are also available to impart knowledge to those willing to acquire grain farming competencies. These are agricultural schools, colleges and universities. These institutions incorporate a lot of practice in the theory taught. One research participant (P5) remarked that “agricultural academies, universities, all institutions that are prepared to train you, you must go there. Institutions, training, training, training, the best thing. Why training, good methods of planting give you high yields on a small scale. If you don’t train people, they think that in order to yield more, you must have a larger space, no, no, no; profitability starts with a smaller scale. If your hectare is giving you five ton, then that is good for you, but if a hectare gives you zero comma one or comma five, then you are wasting land.” Another participant (P6) confirmed this by remarking that “yeah you’re gonna need a little bit of

high-skill level as well because the terminologies that they use for plants is microbiology and things like that, so you understand that you're gonna need a higher skill level."

Research on human capital and rural entrepreneurship focusing on education, experience, knowledge and skill found a positive relationship between these human capital variables and success (Skuras et al., 2005). This finding is validated by the recommendations in a survey investigating farmer knowledge and perception of production constraints in Cambodia, which had included droughts and heavy rain, declining crop yields and cash flow shortages. Farmer education was recommended for them to learn more about the non-traditional methods of conservation agriculture (Montgomery et al., 2017). Khapayi and Celliers (2016) asserted that low education levels among emerging farmers inhibit them from becoming commercial farmers, resulting in an inability to interpret market information to be used in production planning and marketing. Terblanché (2006) recommended that developing a new generation of farmers and agriculturists requires the following: the Education Department must carry the responsibility, and all role players must take charge in forming coordinating structures and linkages, participating in agricultural projects for learners, and developing new programmes for learners in all schools and college level. The role of educational institutions in upskilling society is paramount, as the current study found and previous studies validated.

6.3.2.4 Openness to mentorship

This refers to willingness and openness to mentor others or learn from those who already achieved success. Willingness in this aspect would fulfil service to humanity, which similarly translates into social responsibility to lift those lower in the ranks in society. One research participant (P6) commented: "But you get a lot of help from your neighbours and you ask as well, but you first have to have that understanding to understand it." Another participant (P2) indicated that a farmer should "be in a position to know that you can be guided and you also be able to guide others" while participant P4 added, "I think if he may approach them because asking is another form of acquiring skill."

Šūmane and colleagues (2018, p. 239) argue that "personal curiosity and willingness to learn, together with social networking, farmers' organisations, and

supportive formal knowledge and governance structures, are central elements for successful learning, integrating knowledge and innovating for sustainability." As far as the finding on this aspect goes, not only does willingness fulfil self-actualisation, it also serves as a farmer's social responsibility role from the business side. Mentorship plays a significant role in transferring knowledge and skill from the expert to the trainee (Terblanché, 2011).

6.3.2.5 Refresher workshops

Attending refresher workshops was raised by several participants, with P5 commenting, "another thing is farmers' days. You call them 'boeredag'. That's where you get diamond. That's where you get diamond; it is not in the book." P1, P2 and P14 also supported the refresher workshop aspect.

Learning in any occupation is a continuous process that is enhanced by attending refresher workshops to be up to date with the current trends in one's trade. This finding is validated by the recommendations in a survey where Khapayi and Celliers (2016) investigated factors limiting and preventing emerging farmers from progressing to commercial agricultural farming in the Eastern Cape in South Africa. They advised government to provide planned workshops to all farmers to equip them with marketing knowledge.

6.3.3 Role (importance) of grain farming

6.3.3.1 Food security

Provision of food is the primary role of grain farming within the broader agriculture spectrum. The farmer in this role is no longer serving self-interests but provides food to society. One research participant (P6) commented: "It's massive. It's food. Yeah, your maize is food for people (that's white maize), yellow maize is for animals, sugar beans is a big market food; so it's sunflower for oil, soy for oil and also for food for animals." Another participant (P5) emphasised: "No, they are food suppliers; No, no, without them there is no food, that's the bottom line, they are food suppliers. The Free State as a whole, 33% is from agriculture." P1, P2, P3, P8, P12 and P15 shared similar comments.

As shown in the current study, food security is the reason for engaging in agriculture, particularly for many communities in South Africa. I am directly quoting a

study published by the Human Sciences Research Council, which confirms this study's findings:

> The most common reason given for engaging in agriculture is procuring "an extra source of food", which has seen an expansion over time at the expense of the reason given for engaging in agriculture as a "main source of food" or purely for subsistence. In addition, the number of people engaged in agriculture as a main or extra source of income is small but consistent over time. (Baiphethi & Jacobs, 2009, p. 20)

6.3.3.2 Job creation

Commercial grain farming involves a massive production scale, which translates into employing many people to carry out such jobs that may even need a variety of skills. One research participant (P8) remarked: "So grain per se is the creator of employment in the different value chains of grain, from primary production, processing, we are not that much involved in using maize for energy." Another participant (P7) highlighted: "You are hitting me there, role of farming is when, how can I put it, role of farming as you plough, you are going to offer people jobs." Participant P12 also shared this statement.

The finding that farming can create jobs is confirmed by a recent study conducted on the African continent. Hall et al. (2017) used different agricultural commercialisation models in three African states and found that the plantation or estate model created more jobs and helped in reducing poverty. The creation of jobs by the farming sector is further supported by Arellano and Reyes (2019).

6.3.3.3 Economic growth

Once jobs are created and farmers can make profits, then the economy in the sector increases. One expert (P17) commented: "I just wish our young people could realise this as an avenue for wealth creation, particularly for the black child." This was initially raised by participant P12, stating: "I can say even the nation's economy increases" and repeated by P15.

The growth in the economy at a village or community level contributed by grain farming can be seen in the current study and confirmed by other previous studies. A Limpopo Thorndale village attests to this as Dovie et al. (2003) found that the net

direct-use value of arable crops was estimated at US$443.4 per annum across the village. The village produce of commodities such as maize, watermelon, peanuts and common beans contributed 90% to the total direct-use value of crops. Shim (2017) states that the developing world has seen a significant increase in foreign direct investment inflow in agriculture since the late 2000s. Ghadiyali and colleagues (2011) attested that agriculture contributes to economic growth where it accounts for about 19% of GDP to India. Arellano and Reyes (2019, p. 46) summarised it as follow: “Government and private investors are interested in entrepreneurs, anticipating in them the element of growth that leads to innovation, success, job creation and economic growth.”

6.3.3.4 Wealth or income generation

People employed in the sector can earn an income while owners of production can amass their wealth. This goes both ways as communities would experience contributions when unemployment declines and returns for owners rise. One research participant (P8) remarked: “But if a person produces at commercial level, many opportunities can occur, one income will be generated for the producer and then if it is in a massive scale. Not everyone will get an opportunity of being a farmer that we must understand, now if we can use farming to create the opportunity for other people to earn an income. At different levels of the value chain.” Participant P12 confirmed this idea indirectly.

This study shows that farming helps generate wealth or income for individuals and is confirmed by research conducted recently on the African continent. Hall et al. (2017) employed three different agricultural commercialisation models in three African states and found that the smallholder contract farms and medium-scale commercial farms models are seen to be more embedded in local economies, employing locally, and resulting in consumption and other linkages that benefit local businesses.

6.3.4 Competencies

Competency includes a broad range of knowledge, skills, traits and behaviours that may be technical in nature and relate to interpersonal skills or business-orientated (Van Aswegen, 2012). This section explores findings related to the skills, knowledge and personal attributes a commercial grain farmer should have to succeed in this business.

6.3.4.1 Skill

Van Aswegen (2012) defines a skill as a capability used on the job that can be seen directly by someone watching the employee. Therefore, this study found that a commercial grain farmer should at least have the following six sets of skills:

6.3.4.1.1 Production

Production skills encompass a broad range of other related skills, such as ploughing, planting, cultivating, spraying for diseases and harvesting. A skill in this area results in high yields for the commercial grain farmer, subsequently determining his or her success in the business. One research participant (P6) remarked: “We specialise in this. You get the right cultivars, the right seed and the right conditions because different plants want different things. So you’re gonna have to become a specialist in grain or whatever you want to be in.” Another participant (P8) added, “the skills that I will talk about which I find very important that people who survive in agriculture are one, there must be production skills. You need to know how to separate maize from each other within the rows and between rows; just to cite example, you need to know diseases that are likely to attack your crops as well as things that could help you prevent them.” P16, an expert, confirmed this skill.

Farmers who are entrepreneurially oriented require production skills for the success of their enterprises. McElwee and Robson (2005) found that the nature of skills identifiable from farmers who present entrepreneurial orientation include technical and professional skills such as exact farming skills. De Wolf et al. (2007) also confirm these skills for a successful enterprising farmer.

However, a recent study among rice farmers in the Philippines that analysed personal entrepreneurial competencies on production and technical efficiency found contradicting results. The results indicated that rice farmers generally had weak opportunity seeking, persistence, commitment to work contract, demand for quality or efficiency, risk-taking, goal setting, and systematic planning and monitoring competencies (Arellano & Reyes, 2019).

6.3.4.1.2 Financial management

Commercial grain farmers should be skilled in managing the business's finances to determine if the business runs at a loss or makes any profits. These skills are interrelated: if the financial management is low, it will affect production, as the farm

would no longer be able to plough, plant or perform any other important duty in the production line. Participant P2 commented: “To achieve that profitable farm calls for the right foundation. That is your skill, you know the right stuff about the work you do; but it should not be something reliant on the increase of debts because you work hard relying on debts, it is the same as doing nothing, there is nowhere you will delight, debt can be incurred but not wholly relying on it.” Participant P6 added: “To start this business, to kick it off, that’s the most negative thing I think that puts off a lot of potential good farmers because it’s costly. The input cost is extremely high and it’s very few people that can do it. Very few banks is gonna help you. You can have everything, but if you haven’t got someone who can finance you and help you to get your first step, it’s basically impossible. The input cost is so much, like sugar beans to give you an example, it is R14 000/hectare, so, you put 100 hectares it’s R1,4m. That’s just your cost; it’s your seed, it’s your poison that … it’s your fertilisers, and then your diesel for your tractors to work. I’m not even talking about your equipment.” P16, an expert confirmed all these statements.

Regarding financial management skills, McElwee and Robson (2005), similar to this study’s findings, indicated that the nature of skills identifiable from farmers who present entrepreneurial orientation include business and management skills such as accountancy and financial capability. Phelan (2014), in a study conducted by Hill (2007), also found that the set of skills ranged from business planning, financial management, people management, sales and marketing, collaboration to leadership and risk management. De Wolf et al. (2007) also confirmed these skills for a successful enterprising farmer.

6.3.4.1.3 Time management

If the season for any crop has passed, it can never be regained as all grains are planted as per their due season; otherwise, it is a question of waiting for the next season. One research participant (P1) remarked: “because what is mostly important is knowing when the time to harvest wheat is, you should know when it is time to harvest dry beans, you harvest dry beans.” Another participant (P4) commented that “the one we started explaining first when we said you need to do your things on time. Yes, they should always be in good condition and you always are punctual on your work, not be late or too early, just be on time.” P16 again confirmed these ideas.

The time factor is a very important aspect of farming success. Time management is a prime factor during the preparation, ploughing, planting, and harvesting of crops.

6.3.4.1.4 Human resource management

A commercial grain farmer should be skilled in managing workers who are an invaluable asset for the enterprise's success. They will be dealing with workers, suppliers and customers. Thus, human capital, social capital and social skills are paramount. One research participant (P6) stated: “You want to work with people. Yeah, it is broad; it’s a business. It’s a complete business, so if you don’t even want one of those things, then you’re gonna fail; it’s a chain: every link must be there.” P9 shared the idea of being able to work with people.

People are the basic assets for any business to flourish. The finding of acquiring these skills is supported in general and farming entrepreneurship studies where some focus is on human capital, social capital, and social skills. Social skills are competencies that enable people to interact effectively with others. These skills have been found to influence negotiation outcomes, the frequency with which people engage in conflict and aggression, as well as personal happiness (Markman & Baron, 2003). These authors further found that both human and social capital are complementary as high levels of social capital facilitate flows of knowledge and thus, determine access to resources and stand a chance of contributing to one’s success. Jordaan and Grobler (2010) agreed that farmers needed training on people management skills for improving their business practices. Phelan (2014) reported that there are human capital variables that play a role in determining farm success, such as age and the educational level of farmers.

6.3.4.1.5 Planning

Drafting a detailed plan on how the farm must be managed requires planning skills because the execution of the plan depends initially on how it was formed. Erofeev (2002) confirmed this by stating that business planning contributes to business success. The planning idea was first raised by several participants such as P1, P13 and P15. One expert (P16) confirmed the planning by stating: “Yes, sometimes it doesn’t help owning a big farm but unable to do anything with it. Let us say it be caused by plan; if the plan is not right, then you fail.” Another expert, P18, shared these views: “In order to do these things, to be honest doing planning is one of the fundamentals of

working in farming where many people fail. You know you want to plant but you don't prepare whether to plant 50 ha at a particular time. I am going to use so much fertiliser, so much seed, so much diesel, so many tractors, so many workers and they cost me so much, that is a kind of planning we need, a detailed one, written down, that is what you need for your strategies to work because your plan is your guidance in terms of making decisions whether they are right or wrong, but if you don't have a plan based on the weather conditions, you can't decide whether I invest or not. So your plan need to be detailed."

The benefits for farmers to possess this planning skill generally assists in getting business processes organised timeously. In their tabulation of skills that a farmer needs to succeed in business, De Wolf et al. (2007) categorise acquiring strategic skills and state that the underlying skills include conceptual skills, strategic planning skills, strategic decision-making skills, and goal-setting skills. Arellano and Reyes (2019) refer to this competency as systematic planning and monitoring, which they found to be weak among rice farmers in their study. As a finding of the current research, planning skills are thus an important ingredient for farming success.

6.3.4.1.6 Mechanical

Commercial farming is capital intensive, requiring skills and a hands-on approach regarding the repairs and maintenance of the machinery. Without this skill, machinery could become damaged if not serviced regularly or if the operator is unaware of minor repair issues that need attention. One research participant (P6) stated: "it's another thing when you want to become a farmer, you have to be mechanically orientated as well to be able to work with your hands."

Since farming is mainly a hands-on profession, having this skill helps farmers fix their machinery timeously without queuing for limited government assistance. This finding is supported from a smallholder farmer's perspective, as Lahiff and Cousins (2005) recommend the government provide.

6.3.4.2 Knowledge

Van Aswegen (2012) sees knowledge as the body of information in a particular subject area that the employee needs to perform the job efficiently. This study found that a commercial grain farmer should know about soil preparation, local best practice, technology and weather.

6.3.4.2.1 Soil preparation

Research participants emphasised that soil preparation is the first thing to do before doing anything on their land. This involves taking soil samples for testing to determine the soil type, its deficiencies, and the suitable fertiliser for the intended seed. One research participant (P2) remarked: “what did you do with the soil, what was the soil situation when you started? It will require what soil do you plant it into, what kind of fertiliser so, he does not sell fertiliser, he only sells maize seed, you should know its quality and how to support it” and P3 added: “because if you just plant without doing that you will harvest little or nothing maybe as a result of the soil being acidic.” P6, P9, P12 and P14 supported these statements.

This knowledge is crucial for farmers to boost their crop production. Khapayi and Celliers’s (2016) work with emerging farmers in determining factors that limit their progress to commercial farming showed that about half the sample size had acquired adequate knowledge in soil preparation.

6.3.4.2.2 Local best practice or locality

Knowledge in this area means that the commercial grain farmer understands what needs to be done in the environment he or she occupies, meaning which seeds are suitable to be grown where he or she is based. Thus, the environment dictates what you should plant, for example, trees or other suitable crops. One research participant (P5) remarked: “Point number two farms are different. The farms, the farm itself is different from another one, how, because of locality. Eastern Free State is different from central Free State. Eastern Free State borders Northern Natal, some influence of rain because of Natal, you see those are the factors. But the major cause the farm will dictate to you, the farm itself will dictate to you what kind of business to do there, not yourself. You can go to Memel now, they can give you 3000 hectares, only grazing, no fielding.” P16, an expert, confirmed by stating: “I think he wanted to refer to what we term local best practices. There are things you can do here but not do in Bloemfontein. Yes, it is termed local best practices.” Another expert, P18, also confirmed this.

The knowledge regarding the locality of a farm, as found in the current study, is also consistent with previous findings. Morgan et al. (2010) suggest that a discussion on entrepreneurial skills has to link with the discussion of the roles and

strategies that farmers are adopting and give careful consideration to the geographical area where all these take place.

6.3.4.2.3 Technology or working smart

Commercial grain farmers need to keep up with the rapid changes in the world of technology. Otherwise, they will opt for tools that may use more energy with minimal returns. One participant (P5) commented about previous generations and how they ploughed with oxen, following by the invention of tractors and how planters are nowadays computerised. P6 remarked: “Because technology improves, so that’s why I say you must go with the technology. So, the first generation, they started with cows ploughing with cows, the second generation already got tractor. So, if you look at this and technology you have to keep up with it, and I think in future it will be just using computerised. I can see your cars is computerised, so tractor is computerised, you get the sprayers now have monitors, they spray your crops, and hands-free GPS tractors. I don’t know where the future is gonna go, but you have to stay in touch with it.” Participants who brought up the idea of working smart are P9 and P13, who defined working smart as using fewer resources to achieve more.

Even though it was in a different context, McLean-Meyinsse and Brown (1994) also found that early adoption of new technology leads to farming success. In the current study, this technology or working smart is necessary knowledge for a successful grain farmer. Ghadiyali et al. (2011) further add that farmers get a low price for their yield for several reasons: lack of price information and lack of technological knowledge.

6.3.4.2.4 Weather

Weather knowledge helps a commercial grain farmer to thoroughly prepare for the season and do planning accordingly. Findings in this regard indicate that it comes with age. P9 raised this: “Know about the rain, know when it will rain. You must know the weather; it comes with age.” P1 also raised this idea.

Knowledge regarding the weather is particularly important for the grain farmer, as shown by this study. It is a necessary knowledge worth acquiring for successful farming. Nuthall (2006) explored expert competency to include the ability to understand and cope with risk and uncertainty, particularly in primary production where the weather has such a major impact. For Shannon and Motha (2015), it is

important to teach farmers how to incorporate weather and climate information in their decision-making process to improve annual farm productivity. Such knowledge forms the backbone of managing weather and climate risks to agriculture.

6.3.4.3 Personal attributes

Attributes are personal characteristics, traits, motives, values or ways of thinking that affect an individual's behaviour (Brits, 2012). Findings state that the following six attributes suit a commercial grain farmer:

6.3.4.3.1 Passion

Passion refers to what a person likes or loves doing, as shown by one participant that a person who loves a dog would take care of it and look after it. One research participant (P5) remarked: "No, it depends on the passion of the business, the passion. If you don't like pigs, you won't farm with piggery, you won't. If you don't like sheep, you will never produce mutton. If you hate to work with soil, you will never plant anything. So the passion, passion, passion number one. Passion, what you like, what makes you happy, then you concentrate on that. If you like chicken, work with chicken, you'll be massive; you can have now a storage from here, that takes about 60 000 chicken because you love them, then you are going to make profit out of it." Several other participants, such as P6, P8, P10, P12, P14 and P15, mentioned similar attributes.

McLean-Meyinsse and Brown (1994) conducted a study to determine the strategies for success among black farmers in the United States of America. Their findings, which are similar to the current study's results, also showed that success was directly related to a love of farming. Recent studies about this important attribute are limited.

6.3.4.3.2 Work dedication and determination

Work dedication refers to the effort a person puts in to achieve success, despite challenges that might occur. Alstete (2008) predicted that commitment and determination as personality traits lead to entrepreneurial success. One research participant (P13) remarked: "using available resources wisely, working hard but smart meaning being time conscious to preserve moisture in the soil." Referring to determination, P12 stated: "Farming needs you to work very hard, very hard. Yes,

deprive yourself of the nice times. Farming? If you are prepared to work, you will work. You will work, you will work." This attribute was also raised by P1, P7, P9 and P13.

According to McLean-Meyinsse and Brown (1994), a strong work ethic leads to farming success. Similarly, Alstete (2008) found that the determination of entrepreneurs and some other personality themes seem to predict entrepreneurial success. Their findings, therefore, support the results of the current study that determination plays a valuable role in the total make-up of a grain farmer's personal attributes.

6.3.4.3.3 Self-efficacy or ability

Self-efficacy is the belief that one can perform given tasks. It is all about the level of confidence in carrying out what one is assigned to execute. One research participant (P2) commented: "Being commercial is reliant on the ability to produce food." Participants P3, P7 and P15 also shared a similar viewpoint.

Furthermore, this finding is supported mainly by general entrepreneurship; I have reiterated that little work has been covered in farming concerning this aspect. Starting a grain farming business requires this trait because it aids in distinguishing between entrepreneurs and non-entrepreneurs as it explains why individuals of equal ability perform tasks differently. Phelan (2014) asserted that entrepreneurs with high self-efficacy can identify opportunities, persevere any uncertainties and feel competent to overcome challenges.

6.3.4.3.4 Humbleness or arrogance

Research participant P8 indicated that some people farm naturally, while others pursue farming because of economic reasons. The importance of this attribute applies to persons who approach grain farming from the perspective of hunger because once they are trained, it is possible to become commercial grain farmers. Arrogance normally comes with people who are resourceful and want to invest in farming. Once trained, they can bargain better, and this attribute works in a competitive platform.

This finding is a fairly new attribute to be associated with commercial farmers or entrepreneurship in general. I am not aware of any literature that endorses or criticises either humbleness or arrogance with any successful entrepreneur.

6.3.4.3.5 Intelligence

Natural intelligence helps in making proper decisions that are required to run a profitable business. A person with this intelligence can plan accordingly and implement what had been strategised. Participant P8 stated: “You need to have intelligence. I noticed many people are into farming who have resources but unable to co-ordinate all the resources they have for the benefit of producing.”

This finding is supported by a study that does not refer to intelligence but critical reflection. Debruyne et al. (2016) studied the competencies of an agro-ecological farmer and found that they can use this attribute to reflect critically on their own actions and the actions of their environment. Thus, they try to move away from a priori judgements and act consistently in line with the vision for the farm.

6.3.4.3.6 Emotional stability

Rainy seasons result in high yields that eventually translate into huge profits, while hail and drought have the opposite effect. One research participant (P6) remarked: “But in farming you need to also have a certain personality because there’s lots emotional ups and downs in farming, for instance, you see this crop here, it might fall flat to the ground, how do you react? So, it can put you out of business in twenty minutes.”

Despite only one participant mentioning this, it finds expression in the literature with entrepreneurial skills. In their development of an entrepreneurial development system skills framework, Schallenkamp and Smith (2008) enlist personal maturity skills consisting of other skills such as emotional coping, which refers to the emotional ability to cope with a problem.

6.3.4.3.7 Patience

Without this attribute, no farmer can succeed because the return on investment time is lengthy. Participant P6 remarked: “Yes, both of them either arrogant or humble; they need to have patience because in farming the money you invest today, you can only get it after five years.” P8 and P15 also emphasised this.

Patience as a necessity for business success is supported in the general entrepreneurship literature. This is consistent with Markman and Baron’s (2003) personal perseverance, where a person’s success is determined by their ability to handle adversity.

6.3.5 Indicators of grain farming success

Grain farming success does not only comprise materialistic aspects. Participant P8 asserted: “I don’t want to say farmers’ success be dependent on materialistic things; let us try to be very objective when talking about this issue.”

6.3.5.1 Financial stability

Financial stability differs from person to person. For some, it might be the ability to fulfil their basic needs, such as taking children to school, paying school fees, and fulfilling basic family needs. Others, such as Participant P12, views it as: “Settle debts, even tools of trade are now enough. That this man is going somewhere. When you enter the fields, we check that this man really has achieved something. If a person does well, you will see in a year or two to three that this person is going somewhere that there is a change in the fields.” P1, P5 and P15 shared similar views.

Studies in general entrepreneurship literature support this finding. Chandler and Hanks (1994) explored the moderating effects of founder competence on venture performance of manufacturing firms. They tested entrepreneurial and managerial competence in the context of firm performance. They equate it to both measured and perceived growth in market share and cash flow and sales growth changes and found a direct relationship between a founder’s entrepreneurial and managerial competence and firm performance. Arellano and Reyes (2019) assert that acquiring entrepreneurial competencies make farming enterprises and operations profitable and responsive to market demands.

6.3.5.2 Farming implements

Participants emphasised the acquisition of the tools of the trade to perform the work successfully. Lacking them at some point results in the delay of work performance, which eventually may affect the yield quality and the speed at which harvesting occurs to storage facilities or silos. This aspect further touches on the costs incurred on hiring from those who have them. Participant P12 commented: “You must arrange tools of trade so that you have them. Even if you buy them by credit, it is important. If you buy a tractor on credit or diesel. No just leave, the fact is at the field we need tractors to line up. Then we say you got it, that is how we want it.” Having implements were also raised by P2 and P4 and confirmed by experts P16 and P18.

Hiring implements is a costly exercise if a farmer wants to be successful in their business. This study found that having them alleviates problems as work could be completed within a reasonable time without incurring huge costs. Khapayi and Celliers's (2016) support this finding by stating that the lack of agricultural implements to better production inhibits emerging farmers from becoming commercial farmers.

6.3.5.3 Ability to help others (Altruism)

An indicator of success as a commercial grain farmer is the ability to help those in need. Altruism refers to the helping behaviour a person may have towards others. Participant P2 stated: "Success has many dimensions, most importantly is whether you are able to help other people, not only looking after yourself and then claim to be successful, in what?" The ability to help others fulfils the self-actualisation need within a person, and it serves as a farmer's social responsibility role from an individual perspective. This drive may be attributed to a farmer's intrinsic motivation.

6.3.5.4 Output per unit area

Output per unit area refers to the yield made after a farmer has exhausted the available potential of the natural resources without taking them to waste. One research participant (P8) remarked: "If you want to measure if a person succeeds in farming. I say to be realistic, you must measure his output per area. Yes, we need to measure him according to the area he occupies. It doesn't help even if we give you many hectares, but your output being below the norm. So I will value farmers' success based on their output per unit area. Then I will be saying this person is succeeding, my understanding based on what type of a farmer he is whether being a small farmer able to produce in a similar way as the big farmer, to me is a success." This output indicator was also raised by P7 and P12 and further confirmed by expert P16.

This finding can be compared with an Asian study conducted recently. Arellano and Reyes' (2019) study with rice grain found that in terms of yield on average, farmer-respondents in the province of Laguna in the Philippines had 5.54 metric tons per hectare, which is much higher than the national average yield of 3.9 and 3.87 metric tons per hectare in 2015 and 2016, respectively.

6.4 Conclusion

Steps followed in constructing the competency model provided the key to the end-product of this project. This chapter addressed the research questions of this study:

1 How do farmers define a commercial grain farmer?
2 What are the indicators of successful grain farming?
3 What is the importance of grain farmers in agriculture?
4 Which core competencies (skills, knowledge and personal attributes) should grain farmers possess?
5 What are the best methods of acquiring grain farming competencies?
6 What would be included in a competency model for grain farmers in South Africa?

Based on these research questions, several themes developed from the gathered data: defining the commercial grain farmer, competencies of a commercial grain farmer, indicators of a successful grain farmer, importance (role) of grain farming in agriculture, and methods to acquire grain farming skills.

Defining a commercial grain farmer is embedded upon the scale of operation, with the defining factor being the quantity of the yield and not the size of the operation. Independence refers to the ability to withstand the decisions a farmer takes as there is nobody to rely on for consequences. Turnover then relates to the ability to achieve a certain level of output on the sale of the produce. Availability of land is of primary importance. The finding regarding land possession is unclear in the current study because it has shown that some farmers can commercialise their business without owning it. These factors emerged as the main features that define a commercial grain farmer as proposed by this study.

There are methods that can be used for acquiring grain farming competencies. This study found that the love for farming can develop once children are exposed to the farming environment at an early age. On-the-job training refers to a situation where a trainee acquires knowledge and skills by doing and learning from veterans in a practical setting. Educational institutions such as agricultural schools, colleges and universities are places available to impart knowledge to those willing to acquire grain farming competencies. Openness to mentorship refers to willingness and openness to mentor others or learn from those who achieved success in life or their occupation. Attending refresher workshops shapes and sharpens the farmer's knowledge and skills regarding the current trends and developments in the trade because learning in any occupation is a continuous process.

This study shows that the importance of carrying out grain farming fulfils four roles. It serves to provide food security, the primary function of grain farming within the broader agriculture spectrum. It further helps create jobs, grows the economy and generates wealth for farmers and an income for farmworkers.

The core of the study was on developing competencies for commercial grain farmer classifiable as skills, knowledge and personal attributes. Those observable competencies referred to as skills. Production skills encompass a broad range of other related skills such as ploughing, planting, cultivating, spraying for diseases and harvesting. Financial management skill refers to the ability to do basic bookkeeping, budgeting and determining loss or profit. Time management skills, which I could not endorse from any previous studies, play a key role. Human resource management skills are at the core of every business without whom no success can be claimed as farmers need to be trained as an asset to a farming business. Planning skills help grow the business regarding the strategies a farmer takes for the development of the enterprise. Mechanical skills enable farmers to coordinate their implements or tools so that ploughing, planting, spraying for diseases and harvesting duties are performed.

The body of information farmers need to capture and process in relation to their occupation is knowledge which comes in various ways. Soil preparation is one such knowledge that requires farmers to know the type of soil on the farm so that suitable fertilisers would be identified to maximise productivity. Locality refers to knowing what type of farming would be suitable in the area they farm because the environment determines the nature of farming to be undertaken. Technology is about working smart using fewer resources to maximise the output. Weather knowledge helps farmers to prepare for crops that can withstand harsh climatic conditions in terms of risk management.

Many personal attributes contribute to shaping a commercial grain farmer. Seven attributes came to the fore in this study. Passion deals with interest in the profession without which challenges that come would be tolerated. Work dedication requires farmers to be fully involved in their businesses all the time and not on a part-time basis. Self-efficacy concerns the belief and confidence that farmers can manage or perform all the duties on a farm. Humbleness is elicited by individuals for whom farming comes naturally while individuals driven by economic reasons elicit arrogance. Intelligence

deals with the ability to coordinate resources maximally. Emotional stability deals with managing own feelings during challenges encountered in running the business. Patience refers to the ability to withstand hardships until success is achieved. These skills, knowledge and personal attributes are the competencies that a commercial grain farmer should have, as shown by this study.

Success in grain farming encompasses four indicators. Financial stability refers to having a positive balance and the ability to fulfil basic needs and settle debts. Having farming implements concern with dealing with the acquisition of the tools of the trade to perform the work successfully. Being altruistic refers to having the behaviour of helping others as this fulfils a farmer's intrinsic motivation. Output per unit area refers to the yield made after a farmer has exhausted the available potential of the natural resources without taking them to waste. The next chapter concludes with a synopsis, contribution and recommendations of the current study.

CHAPTER 7: SYNOPSIS, CONTRIBUTIONS AND RECOMMENDATIONS

7.1 Introduction

This final chapter provides a synopsis of the study. I conclude with the highlights of the key contributions and recommendations of the study, including its limitations.

7.2 Synopsis of the study

Each chapter provides a synopsis in terms of the following aspect as per the specific chapter:

1. Chapter 1: Introduction and background to the study

Chapter 1 provides a background to this study, outlining its importance and the rationale for undertaking it. It addresses the key question and how the investigation envisaged contributing from a theoretical, methodological and practical perspective. The central research questions for this study were:

1 How do farmers define a commercial grain farmer?
2 What are the indicators of successful grain farming?
3 What is the importance of grain farmers in agriculture?
4 Which core competencies (skills, knowledge and personal attributes) should grain farmers possess?
5 What are the best methods of acquiring grain farming competencies?
6 What would be included in a competency model for grain farmers in South Africa?

The theoretical value of this study was in developing a competency model for commercial grain farmers. Also, validating the competency model for use by current and future prospective farmers was necessary. In terms of the methodology, the Glaserian or classic grounded theory expanded our knowledge in grain farming competency, human resource management, entrepreneurship, and general management studies in South Africa. This knowledge extension is a direct result of integrating the literature and data insights from the research participants. The application of these methodologies indicates their value and utility and how they can be applied in various disciplines. The practical value is that trainers, mentors, agriculture advisors and all other stakeholders can identify the skills, knowledge and

personality attributes that those interested in grain farming should be equipped with. The topic for this study further contributes to the ongoing debate of food security, entrepreneurial development, and rural and economic development.

2. Chapter 2: Research methodology

This chapter illustrates how the current study, inductive thinking, purported to build a theory from an open-minded platform and distinguished this form of reasoning from deductive thinking. The selection of the grounded theory approach was further informed by the desire to develop a substantive theory in the form of a framework or a model. “A substantive theory is considered a basic theory, or it can be a tentative theory that provides the framework leading to an empirically tested formal theory” (Locke, 2003, p. 5). Another reason for studies generating theories is based on Partington’s (2000, p. 91) call that “there is a persistent call from significant minority of writers for more inductive, theory-building studies, using empirical data to build theories which are useful, relevant, and up-to-date”.

3. Chapter 3: Data analysis methods

Many methods have been developed within the qualitative approach to analyse available data. Suitable analysis methods usable in grounded theory were also identified. Constant comparison was used in this study to analyse gathered data to build a model. Constant comparison as a qualitative analysis method was used to establish analytic distinction and thus, make comparisons at each level of analytic work (Charmaz, 2006). Grounded theory emphasises the generation of a theory, as well as the data on which the theory is grounded (Strauss, 1993).

4. Chapter 4: Practical data analysis

This chapter showed how three phases in the constant comparison method were used to analyse the data. Firstly, open coding was used to create labels by condensing line by line or paragraph by paragraph. Secondly, selective coding was used to selectively look for cases that illustrate themes and make comparisons and contrasts upon completing the data gathering process. Thirdly, theoretical coding was done as it is the critical stage where a theory is being developed; this is where constructs are found and relationships among them determined. The analysis ran in two phases. The first phase involved analysing interview data from farmers, farm managers,

farmworkers and professional advisors or experts. The second phase involved analysis of interview data from only professional advisors or experts who validate the information given by research participants in the first phase. This is where a competency model for commercial grain farmers was developed.

5. Chapter 5: Overview of literature on competency model of successful grain farming

In order to avoid diluting the investigator with pre-conceived ideas, a literature review was done to establish the basis for the project. The focus was on the components of competency, which are popularly referred to as SKAs (skills, knowledge and attributes). These were discussed in relation to how they affect the work performance of individuals within organisations. A detailed discussion on integrating farming into entrepreneurship literature and various farming models developed in other parts of the world have been made in this project. Some writings that addressed developing a competency model, including approaches adopted, were considered to help generate the purported model.

6. Chapter 6: Presentation of a competency model of successful grain farmers

Chapter 6 presented the steps that I followed in constructing the competency model that provided the key to the end-product of this project. The model was laid out and all its features fully explained, as indicated in the five themes: definition of a commercial grain farmer, best methods of acquiring grain farming competencies, role of grain farming in agriculture, competencies of a commercial grain farmer, and success indicators of commercial grain farming.

7. Chapter 7: Synopsis, contributions and recommendations

A summary of the findings is included in this chapter and the contributions the study made using the classic grounded theory. Besides several recommendations made, a particular focus relates to the fact that this study was conducted before Covid-19. Therefore, it would be interesting to learn if the core competencies would remain the same post-Covid-19 and extend such a project to include women.

7.3 Key contributions and implications of the study

A major contribution made by this study is the generation of a model that paved the way toward understanding the competencies that a commercial grain farmer should have in today's world. This study serves as a guide for future research in laying the

foundation for formulating hypotheses in this area of successful grain farming. Farmers could define a commercial grain farmer that evolved based on deductive thinking, despite existing definitions. The key contributions that this study made as per each research question include:

1 How do farmers define a commercial grain farmer?

This study gave an understanding that a commercial grain farmer is defined as a farmer who meets the following four features: scale of operation, independence, turnover and owning or renting land.

2 What are the indicators of successful grain farming?

The indicators of successful grain farming emerged as financially stable, having farming implements, being altruistic (able to help others) and the ability to yield necessary outputs per unit area.

3 What is the importance of grain farmers in agriculture?

Findings explored the importance (role) of grain farming in agriculture as the provision of food security, job creation, income or wealth generation and economic growth.

4 Which core competencies (skills, knowledge and personal attributes) should grain farmers possess?

Grain farmers should have a wide range of core competencies: six sets of skills (planning, financial management, time management, production, mechanical and human and social); knowledge in four areas (soil preparation, local best practice or locality, technology or working smart and weather); and seven personal attributes (self-efficacy or ability, passion, work dedication & determination, emotional stability, intelligence, humbleness or arrogance and patience).

5 What are the best methods of acquiring grain farming competencies?

The main methods identified to acquire the competencies mentioned above include early childhood exposure to the farming environment, on-the-job training, educational institutions, openness to mentorship and refresher workshops.

6 What would be included in a competency model for grain farmers in South Africa?

Five elements were identified for inclusion in the model: commercial grain farming definition (e.g., scale of operation, independence, turnover and own or rented land); grain farming competency methods (e.g., early childhood exposure to the farming environment, on-the-job training, educational institutions, openness to guidance and refresher workshops); the role of grain farming in agriculture (e.g., food security, job creation, income or wealth generation and economic growth); grain farming competencies (e.g., planning, financial management, time management, production, mechanical and human and social); knowledge in four areas (e.g., soil preparation, local best practice, technology and weather); seven personal attributes (e.g., self-efficacy and ability, passion, work dedication and determination, emotional stability, intelligence, humbleness or arrogance and patience); and indicators of grain farming success (e.g., being financially stable, having farming implements, being altruistic and the ability to yield necessary output per unit area).

The findings serve as a guide for policymakers and industry practitioners on what competencies to look for among aspiring and emerging grain farmers so that they may graduate into being commercial grain farmers. These findings may be used as a point of departure to address the National Development Plan (NDP) 2030 vision of identifying potential farmers who would be better positioned to create many jobs in this sector.

The practical application of the findings is that there is now a basis for competencies what trainers, mentors, agriculture advisors and all other stakeholders would be looking for to equip those interested in grain farming. Also, a foundation has been laid for the development of job descriptions for employees in this sector. Employers can defend themselves at the CCMA and labour courts against litigation regarding tasks and duties assigned to the employees.

This newly developed model provides an implication for generating and measuring instruments constructed to assess its validity and reliability. The established competencies could be used on aspiring grain farmers to determine their recruitment and selection for mentorship programmes and enable their prediction to succeed in the grain farming business.

7.4 Limitations of the study

In a qualitative study, one of the limitations is that it uses a non-probability sampling method, which indicates that the sample is not representative of all commercial grain farmers; only a few cases are involved in gathering data. As this project was an exploratory study, future projects may consider using probability sampling methods where the likelihood of generalising findings to the broader population of all commercial farmers may be possible.

Findings of this Glaserian grounded theory may not be generalised to the broader population of grain farmers across the district municipality, province, country, or even globally, but rather serve as the foundation for carrying out similar future projects. Thus, the findings of this grounded theory research could be strengthened in subsequent projects that employ other approaches or methodologies.

7.5 Recommendations for future research projects

This study employed a qualitative research approach, particularly a Glaserian grounded theory whose purpose was to generate a model from data. Future projects may test the model's applicability in other settings such as livestock farming and other related operations. Different research designs may also be employed to determine the credibility of this newly developed model, which could use either a quantitative or a qualitative approach, even a mixed-methods approach.

I further recommend using surveys with bigger samples to construct a standardised instrument that could measure each of the themes developed in this model and test its applicability on future prospective grain farmers. I also recommend testing hypotheses raised in this study as to whether methods of acquiring grain competencies, including the competencies themselves, lead to success.

It is noteworthy that the grounded theory route is less travelled. Therefore, I recommend that researchers consider adopting any methods within the grounded theory approach where formulation of typologies or frameworks would be realised, particularly in the management studies.

Many previous studies have developed exact competencies for different occupations or jobs, including some in the agricultural sector. Therefore, unlike other studies that developed competencies for various occupations, even for some in the

agricultural sector, the current study came up with different skills, knowledge and personal attributes that broadly form general competencies for commercial grain farming.

Regarding the mixed methods design, a research design such as exploratory sequential design may be used as an alternative to the grounded theory method adopted here. Based on this, I recommend researching women farmers in grains using exploratory sequential design to formulate a conclusive model as there were none represented in the current study. Because this study was conducted before Covid-19, it would be interesting to learn if the core competencies would remain the same post the coronavirus pandemic.

7.6 Concluding note

A significant contribution of industrial psychology to the field of agriculture is noteworthy in this project. A lot of knowledge is expected to be generated from this project, where industrial psychology and agriculture collaborations, particularly agricultural economics, could advance what is currently known and may be accepted as a norm. However, the topic of entrepreneurial competency in the context of the farmer is under-researched. There is also limited literature available to address challenges related to the topic. Seeing that the debate on farm entrepreneurial competency is still at an infancy stage, the current study contributes positively to this discussion, especially from an African perspective. Michel-Villarreal and colleagues (2020) maintained that current literature focuses on countries of the Global North, while the same issues are yet to be addressed in the low- and middle-income countries in the Global South (Bellante, 2017). As this study shows, there is also a need to study commercial grain farming competencies in sub-Saharan Africa.

While a number of entrepreneurial skills and competency frameworks have now been supported (Chandler & Hanks, 1994; Man et al., 2002; Mitchelmore & Rowley, 2010; Omrane & Fayolle, 2011; Phelan, 2014), these are often conceptual in nature and still require empirical validation. The model developed in this research contributes to our existing knowledge about the field and provides a basis for future research.

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APPENDIX A (INTERVIEW SCHEDULE FOR FARMERS & FARM MANAGERS)

Opening

- Thank you for your participation
- Ask for permission to audio record the conversation
- Remind the participant about the content of the consent form, especially confidentiality and stopping the interview at any point
- Indicate that the purpose of the study is to develop a competency model for commercial grain farmers in South Africa to identify, train and mentor future prospective grain farmers
- Inform the participant that the interview will be conversational in nature and that focus will be on what s/he thinks is important
- Ask if there are any questions I need to clarify before we start

Questions

- What is your age?
- What is your gender?
- What is your highest level of education?
- Are you a full time bona fide farmer?
- How long have you been involved in farming business?
- Do you own the farm, or it is leased land or communal land?
- What is the size of your farm?
- How much of this land is arable and how much is grazing?
- Do you live on the farm?
- If not, how far is your home from the farm?
- What type of crop(s) do you prefer among various grains (grains, oilseeds and winter cereals)?
- Do you have a livestock component in your farming?
- Do you have your own mechanisation?
- If not, how do you manage the mechanization on the farm?
- How much (in tonnes) did you achieve a drop/increase in crop yield over the last three years?

- How do you manage your crops to get a higher yield?
- How do you maintain your machinery and implements?
- What is your short-term and long-term plan for your farm?
- Do you keep records of farm expenses?
- Are you a member of a farmer's organisation?
- How do you manage the fertility of your farm?
- Do you have good management of your workers?
- Are you part of any training and development programme?
- What is a commercial grain farmer, according to you?
- Which areas of competence should one possess to run a profitable grain farm?
- How can a successful grain farmer be identified?
- What is the current role of grain farmers in agriculture?
- What are the best methods of acquiring grain farming competencies?

Closing

- Thank you for your participation
- Ask: "Is there anything you wanted to discuss that we didn't get a chance to cover?"
- Enquire about willingness for a follow-up conversation if necessary
- Invite to contact me regarding questions or further thoughts
- Thank you again for taking the time to participate in the research

APPENDIX B (INTERVIEW SCHEDULE FOR FARMERS WHOSE BUSINESSES WENT UNDER)

Opening

- Thank you for your participation
- Ask for permission to audio record the conversation
- Remind the participant about the content of the consent form, especially confidentiality and stopping the interview at any point
- Indicate that the purpose of the study is to develop a competency model for commercial grain farmers in South Africa to identify, train and mentor future prospective grain farmers
- Inform the participant that the interview will be conversational in nature and that focus will be on what s/he thinks is important
- Ask if there are any questions I need to clarify before we start

Questions

- What is your age?
- What is your gender?
- What is your highest level of education?
- Were you a full time bona fide farmer?
- How long have you been involved in the farming business?
- Did you own the farm, or was it a leased land or communal land?
- What was the size of your farm?
- How much of this land was arable and how much was grazing?
- Did you live on the farm?
- If not, how far was your home from the farm?
- What type of crop(s) did you prefer among various grains (grains, oilseeds and winter cereals)?
- How do you manage your crops to get a higher yield?
- How do you maintain your machinery and implements?
- What is your short-term and long-term plan for your farm?
- Do you keep records of farm expenses?
- Are you a member of a farmer's organisation?
- How do you manage the fertility of your farm?

- Do you have good management of your workers?
- Did you have a livestock component in your farming?
- Did you have your own mechanisation?
- If not, how did you manage the mechanisation on the farm?
- Were you part of any training and development programme?
- What is a commercial grain farmer, according to you?
- Which areas of competence should one possess to run a profitable grain farm?
- How can a successful grain farmer be identified?
- What is the current role of grain farmers in agriculture?
- What are the best methods of acquiring grain farming competencies?

Closing

- Thank you for your participation
- Ask: “Is there anything you wanted to discuss that we didn’t get a chance to cover?”
- Enquire about willingness for a follow-up conversation if necessary
- Invite to contact me regarding questions or further thoughts
- Thank you again for taking the time to participate in the research

APPENDIX C (INTERVIEW SCHEDULE FOR FARMERS' WORKERS)

Opening

- Thank you for your participation
- Ask for permission to audio record the conversation
- Remind the participant about the content of the consent form, especially confidentiality and stopping the interview at any point
- Indicate that the purpose of the study is to develop a competency model for commercial grain farmers in South Africa to identify, train and mentor future prospective grain farmers
- Inform the participant that the interview will be conversational in nature and that focus will be on what s/he thinks is important
- Ask if there are any questions I need to clarify before we start

Questions

- What is your age?
- What is your gender?
- What is your highest level of education?
- How long have you been working on a farm?
- Do you consider your employer a full time bona fide farmer?
- Which areas of competence should one possess to run a profitable grain farm?
- How can a successful grain farmer be identified?
- Do you regard your employer as a successful grain farmer?
- What is the current role of grain farmers in agriculture?
- What are the best methods of acquiring grain farming competencies?

Closing

- Thank you for your participation
- Ask: "Is there anything you wanted to discuss that we didn't get a chance to cover?"
- Enquire about willingness for a follow-up conversation if necessary
- Invite to contact me regarding questions or further thoughts
- Thank you again for taking the time to participate in the research

APPENDIX D (INTERVIEW SCHEDULE FOR PROFESSIONAL ADVISORS/EXPERTS)

Opening

- Thank you for your participation
- Ask for permission to audio record the conversation
- Remind the participant about the content of the consent form, especially confidentiality and stopping the interview at any point
- Indicate that the purpose of the study is to develop a competency model for commercial grain farmers in South Africa to identify, train and mentor future prospective grain farmers
- Inform the participant that the interview will be conversational in nature and that focus will be on what s/he thinks is important
- Ask if there are any questions I need to clarify before we start

Questions

- What is your age?
- What is your gender?
- What is your highest level of education?
- Do you consider your client a full time bona fide farmer?
- How long have you been supporting farmers in a farming business?
- What is a commercial grain farmer, according to you?
- Which areas of competence should one possess to run a profitable grain farm?
- How can a successful grain farmer be identified?
- Do you regard your client as a successful grain farmer?
- What is the current role of grain farmers in agriculture?
- What are the best methods of acquiring grain farming competencies?

Closing

- Thank you for your participation
- Ask: “Is there anything you wanted to discuss that we didn’t get a chance to cover?”
- Enquire about willingness for a follow-up conversation if necessary
- Invite to contact me regarding questions or further thoughts
- Thank you again for taking the time to participate in the research

APPENDIX E (INFORMED CONSENT FORM)

UNIVERSITY OF THE FREE STATE

TJ MOLOI

DEPARTMENT OF INDUSTRIAL PSYCHOLOGY

tjmoloi62@gmail.com

CONSENT FORM/*FOROMO YA HO DUMELA*

THE DEVELOPMENT OF A COMPETENCY MODEL FOR COMMERCIAL GRAIN FARMERS/*TSOSOLOSO YA SETSHWANTSHO SA BOIPHIHLELO SA BALEMI BA DIJO BA ATLEHILENG*

INVITATION TO PARTICIPATE/*MEMO YA HO NKA KAROLO*

You are being asked to participate in this research study because of the experience you have regarding grain farming.

O koptjwa ho nka karolo diphuputsong tsena ka baka la boiphihlelo boo o nang le bona temong ya dijo e atlehileng.

PURPOSE/*SEPHEYO*

Your participation in this research will shed light on the key competencies a grain farmer should possess in order to be successful.

Ho nka karolo ha hao diphuputsong tsena ho tla tlisa lesedi boiphihlelong boo balemi ba dijo ba lokelang ho bo rua hore ba atlehe.

PROCEDURES/*METJHA*

As a participant, you will be enrolled in the study and you will be asked to give your honest opinion on questions raised by the researcher. Your opinions will be recorded using a voice recording device. The whole process will take place at your convenient site.

Jwale ka ya nkang karolo, o tla ngodisetswa ho nka karolo diphuputsong, mme o tla koptjwa ho arolelana maikutlo a hao a lokolohileng hodima dipotso tseo radiphuputso a tlang ho o botsa tsona. Maikutlo a hao a tla hatiswa motjhining mme tsohle tsena di tla etsahala sebakeng se tla kgethwa ke wena.

DURATION OF THE INTERVIEW/*BOLELE BA DIPUISANO*

The researcher expects the interview to last approximately 45 minutes to 90 minutes.

Radiphuputso o lebelletse hore dipuisano di nke metsotso e 45 ho ya ho e 90.

RISKS/*DITLAMORAO*

Some of the questions may touch on sensitive areas. However, every effort will be made by the researcher to minimise your discomfort. You are encouraged to discuss with the researcher any negative or difficult feelings or experiences you have as a result of participating in this research project. If at any time you feel you would like to stop your participation in the study, you will be free to do so.

Tse ding tsa dipotso di ama dibaka tse hlokolosi. Leha ho le jwalo, radiphuputso o entse makgobonthithi a hore a fokotse seo. O kgothaletswa ho abelana le radiphuputso maikutlo a thata kapa se sa o thabisang kamora ho ba o nke karolo diphuputsong tsena. Nakong efe kapa efe ha o ikutlwa hore o sitwa ho nka karolo diphuputsong tsena, o ka etsa jwalo.

COSTS AND FINANCIAL RISKS/*DITSHENYEHELO TSA DITJHELETE*

There are no financial costs directly associated with participation in this project.

Ha ho ditshenyehelo tse amang tjhelete tseo ba nkang karolo ba tlang ho di jara.

BENEFITS/*MELEMO*

There is no guarantee that you will benefit from the study. However, the investigator believes that it is likely that participants may benefit from attending the interviews.

Ha ho tiiso ya hore ho na le molemo oo o tlang ho o una diphuputsong tsena. Leha ho le jwalo, radiphuputso o dumela hore hon a le kgonahalo ya hore ba nkang karolo bat la una ho se tla qoqwa lipuisanong.

COMPENSATION/*MOPUTSO*

You will not receive any compensation for participating in this study.

Ha ho moputso oo o tlang ho o fumana ka ho nka karolo diphuputsong tsena

ALTERNATIVES/*KGETHO TSE DING*

Participation in this research project is entirely voluntary and you may choose not to participate.

Ho nka karolo diphuputsong tsena ke boithaopo ka hohlehohle, mme o na le kgetho ya ho se nke karolo.

ANONIMITY AND CONFIDENTIALITY/HO PATEHA HA YA NKANG KAROLO LE HO ETSA TABA TSENA *PINYANE*

Every attempt will be made by the investigator to keep all information collected in this study strictly confidential. This means that confidentiality will be ensured. Only aggregated data will be communicated in published research. In addition, qualitative data will not be linked to an identifiable participant.

Radiphuputso o tla etsa ka matla a maholo hore ditaba tseo o tla mo tsholela tsona e be pinyane. Sena se bolela hore o netefaletswa hore taba ena e tla ba pinyane. Hodima moo, ha ho phatlalatswa tse fumanweng diphuputsong tsena, ditaba ha di na ho amahangwa le monga tsona.

ADDITIONAL INFORMATION/*TABA TSE DING*

Your participation in this study is entirely voluntary, and you are free to refuse participation. You may discontinue your participation at any time without prejudice or without jeopardising the future care either of yourself or your family members. If you discontinue participation in the project, you may request that we not use the information already given us. You are encouraged to ask questions concerning the study at any time as they occur to you during the process. Any significant new findings developed during the course of the study that may relate to your willingness to continue participation will be provided to you.

Ho nka karolo ha hao diphuputsong tsena ke ka boithaopo kahohle mme o lokolohile hore o ho latole. O ka ikgula ho nkeng karolo nakong efe kapa efe ntle le ho duka tlhokomela ya hao kapa ya wa leloko nakong e tlang. Ha o ikgula ho nkeng karolo, o ka ikopela hore re se sebedisi ditaba tseo o seng o fane ka tsona. O kgothaletswa ho botsa mabapi le diphuputso nakong efe kapa efe ha di ntse di tswela pele malebana le wena. Tse bohlokwa, tse ntjha tse tsetollwang nakong ya diphuputso, tse amang kgahleho ya hao ya ho tswela pele ho nkeng karolo, o tla di tsebiswa.

DISCLAIMER/WITHDRAWAL/*HO IKGULA*

You agree that your participation in this study is completely voluntary and that you may withdraw at any time without prejudicing your standing within the University of the Free State-Qwaqwa campus.

O dumela hore ho nka karolo ha hao diphuputsong tsena ke boithaopo kahohle le hore o ka ikgula boithaopong nakong efe kapa efe ntle le hore maemo a hao a sulafale Unibesithing ya Foreistata- Qwaqwa.

PARTICIPANT RIGHTS/*DITOKELO TSA YA NKANG KAROLO*

If you have any questions pertaining to your participation in this study, you may contact the Principal investigator (Mr TJ Moloi) by telephoning 058-718 5050.

Ha o ena le dipotso mabapi le ho nka karolo diphuputsong tsena, o ka iteanya ka mohala le Radiphuputso e moholo (Mong. TJ Moloi) ka ho letsetsa 058-718 5050.

CONCLUSION/*QETELLO*

By signing below, you are indicating that you have read and understood the consent form and that you agree to participate in this study.

Ka ho saena meleng e ka tlase, o tiisa hore o badile mme o utlwisisa tsa foromo ya ho dumela le hore o dumela ho nka karolo diphuputsong tsena.

_____	_____
Participant's signature Tshaeno ya ya nkang karolo	Date Letsatsi
_____	_____
Researcher's signature Tshaeno ya radiphuputso	Date Letsatsi

APPENDIX F (ETHICAL CLEARANCE FORM APPROVED BY THE UNIVERSITY)

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA

UFS·UV
ECONOMIC AND MANAGEMENT SCIENCES
EKONOMIESE EN BESTUURSWETENSKAPPE

Faculty of Economic and Management Sciences

01-Sep-2016

Dear **Mr Thapelo Moloi**

Ethics Clearance: **THE DEVELOPMENT OF A COMPETENCY MODEL FOR COMMERCIAL GRAIN FARMERS**

Principal Investigator: **Mr Thapelo Moloi**

Department: **Industrial Psychology (Qwaqwa Campus)**

APPLICATION APPROVED

With reference to you application for ethical clearance with the Faculty of Economic & Management Sciences, I am pleased to inform you on behalf of the Ethics Committee of the faculty that you have been granted ethical clearance for your research.

Your ethical clearance number, to be used in all correspondence is: **UFS-HSD2016/0133**

This ethical clearance number is valid from **12-Aug-2016** to **13-Aug-2021**. Should you require more time to complete this research, please apply for an extension.

We request that any changes that may take place during the course of your research project be submitted to the ethics office to ensure we are kept up to date with your progress and any ethical implications that may arise.

Thank you for submitting this proposal for ethical clearance and we wish you every success with your research.

Yours Sincerely

Dr. Petrus Nel
Chairperson: Ethics Committee Faculty of Economic & Management Sciences

Economics Ethics Committee
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www.ufs.ac.za

APPENDIX G: OPEN CODING: DEFINING A COMMERCIAL GRAIN FARMER

Interview data	Coding
• Being commercial is reliant on the ability to produce food • That will feed you as well as others, that is being commercial because you are able to eat and even sell	Graduating from self-sufficiency to feeding others
• Being commercial as a title without producing anything is meaningless	
• I do not have any fear to call myself commercial • I produce, whatever I do, I do with full force • When I want something, I ensure its accomplishment, so receiving that title is informed by my expertise	Using all effort
• We learn so much because these things were done by the whites	Learning from whites
• But what stands out is that they have their own unions where they receive training on the new methods of doing the thing I am used to, so you need to come closer and seek help and never work hard unnecessarily because sometimes what kills us is being used to working in a particular way since old ways delay and have the understanding that having things like farmer's day	Training them on the new work methods by their unions Seeking their help is important since old ways delay progress Attending farmers' day is very important
• Such things are sources of information	
• As well as kinds of equipment where you see that this has improved the previous one and notice your environment needs such, so that is where you derive determination of improving your work	Improving equipment improves your work
• These white people have their study groups and they are not lazy to attend them	Having study groups helps and requires dedication
• No, that is where they conquer because they even have much dedication, often they are not urban dwellers instead, they are at their businesses	Being in town for a reason not to waste time on trivial matters
• Often, even if they are in town, they are there to buy what they need and rush back to the work.	
• So we are people who spend time in town drinking coke	
• It is important to use people who have an understanding of what they do	Using people who understand what they do helps
• you see signs because there is no one helping you, you are on your own, are independent, you are not looking at anyone, there is no like government will take care of you, no, you are on your own	Being independent Expecting government support but not forthcoming
• You cannot say you no longer need it because it is difficult, it is difficult here on farms, we are still expecting government support, but we can't receive it, government is looking others, they no longer care about us	
• You know where we come from, when we started, there was no government support	
• There was Agriqwa where we received loans which we had to repay, they would help us that way, but many could not survive but went under	Considering old systems of governance as effective even though others could not survive
• So when you have just harvested, you need to repay that guy who lent to you.	Being firm on repaying loans from lenders
• It is the same with the co-operatives when you want a loan, or you go to the bank, they will give and you will plant	Lending from co-operatives and banks to plant
• After harvesting, you know that you need to repay so that you can move forward	Repaying loans after harvesting

• You can say you are commercial because you carry yourself, you need to know that if you want to do one two three, you should know how to do that, there is no one whom you would run to	Needing to carry yourself as commercial because there is no one to run to
• Yes, you stand for yourself, it will give tough time, but you need to come up with plans on how to manoeuvre through that	Having plans to manoeuvre when times are tough
• Like now, if you say you are going to plough, who will say take here and go and plough, there's no one	Giving no one money for the work needs
• Take here's the money for fertiliser, take here's the money for diesel, there is no one	
• Things like diesel are becoming so expensive because earlier it was much better during the times of Agriqwa, as a farmer, we were having account numbers for purchasing diesel	Getting all things expensive
• As a farmer, you would produce that number and get diesel at a discounted price	Discounting prices in the previous regime was for farmers
• But now, since that has been abolished, we all go to the same pipe/pump	Abolishing discounts that have been done before
• Remember you would have poured in a tank for about a R1700	Charging farmers and non-farmers the same price
• By the afternoon it is finished	
• So now imagine, over a period of a month, where will it last you for weeks as you are ploughing, where will it last you? It is a challenge	
• But now, when you are used to a thing, you cannot just let it go because of such.	Holding on no matter what
• We can't just give in, we have to tolerate this and move on.	Giving in is not an option
• Never look back because even here is the community you need to hire them and pay them, move forward as a farmer, just move on and never give up as you will eventually achieve your goal ahead	Needing to hire community and pay them. Patience pays off
• You can't, look even in dairy, if you cannot feed your cow say you feed it some dairy meal, once it finishes it looks back to see if you come for some more, if nothing comes, it kicks	Being a tit-for-tat game, a give and take
• Yes, it reduces, in fact, it says to you pour some more	
• We are now used to working hard.	Giving more
• When the Lord permits, we must just work hard and never look back, that is what we are used to, it is our burden, we can't do otherwise, it is unavoidable, it is our way of life	Toiling is our norm
• No, we are used to that, even in our gathering we joke about it, we are all in a hurry for the weather and say to one another, it is time guys, we shouldn't let it pass us.	Keeping track of the weather and preserve moisture
• So who will you run to for help?	
• Even government those that they support, are not able to do anything for themselves	Being independence
• Government gave them farms for free, but they can't do anything, here are others who are even selling them.	Being passionate about farming is key
• Like over there, they have filled the whites to take over farms.	
• Whites are leasing them though they belong to government, now the owners are away from them.	Fearing risks kills business Leasing farms to whites
• So we bought them that is why we are working hard on them. You can't give your property over to someone, when will you work?	
• You won't work because you will be waiting for the leasee to give you the little that he has	Toiling because we cannot afford to give land back to colonisers Leasing amount is too little to rely on
• You are guarding that little, you chow the little and it is over.	
• That lease money doesn't work	Taking a bit you find it depleted
• Heh, sir! After giving it to someone, they will let you sign, from there they will not leave claiming that you gave them so many years, you are going to suffer more in your own farm while they enrich themselves.	Cheating is also possible if not aware Leasing could enrich themselves at your expense
• When the season went well for him, he pays you with just one load of harvest and the rest of the remaining loads are his	Settling debts after good harvest with just one load for the whole year
• Yes, he will give you only one, the rest goes into his pocket, he'll be done	Paying in just one load by leasee
• Yes, even though you hold fast, you should never tire out and think that let me give this farm to that guy, no.	Opting not for leasing out farms
• That is the thing that makes one go about with nothing in pockets.	
• When you stumble and fall never say anything, just rise and move on.	Leasing out the farm impoverishes you
• Move on and say I am heading over there	Keeping on toiling no matter what happens
• Look where we come from, it is the Lord who knows that	

• I arrived here, you know that, with just one tractor, a 165 Massey Ferguson, I will show you now, it bought all these other tractors • It filled up all this space, when you hold on, you move forward, never will you go back • When you hold on, you move forward. • Because when you give up, then you go backward • Even though we may not see, but we do see that at least this year I moved forward though by small margin, you say this I moved a little because managed to pay workers, cows over there are giving birth, then you say slowly I move on. • The Lord permits that you move forward • Sometimes you set to go by a certain speed, but it does not go according to your liking, but you move on, you move on	Keeping your head high Persevering pays off Knowing where you started Moving on and never give up Progressing holding on Giving up impoverishes Progressing indicates forward moving Being spiritual is key also on progress realisation Progressing not determined by oneself
• Well, for me, what makes him stand out from other men would be his hard work • Let me put it this way, we as farmers • Particularly we black people • We do not closely monitor our work • Like I say to you now go and work at such and such a place with a tractor, • I just send you there never mind you will struggle over there or not, you know white people when they say go and work at a particular place, you go and after about an hour, he is there to check if there is progress or what is needed to carry on with work, so we only instruct you there without any follow-up • You will see for yourself as a worker how to manoeuvre, somewhere it needs you to determine what or what not to do, or be afraid that if I am found idling, I could be in trouble • You see what will show as a farmer is about monitoring his work • To see if it goes according to how you planned your work, like aiming to till so many hectares on a given day, or having fixed fence from here to there, follow the work because we black people do not care if justice is done or to follow on the work performed whether it is okay or what you are doing, when the car drives past you stand up on the fence as if you are working and when it disappears you just relax • That is what I see with black people, it's only a few who really follow up on their work, whom it is well known that so and so is a hard worker • Yea, implements you may have, especially we black people, we have implements in good condition • New ones, latest models but when you check his work, it doesn't prove that he has such latest implements. • Yes, following up on his work • Yes, they know that if so and so says he is working, he really means it • Whether we have a meeting or what they know that he works, he will only appear in very important meetings, as for ordinary meetings no, if he says he is busy, he really means it • That is the thing that if you are in a meeting, cracking jokes, they will say that man knows his work • I think that is what they take note of	Working hard leads to prosperity Keeping no track of work done by blacks Supporting no workers Monitoring and supporting workers by whites Keeping busy by workers for black farmers to avoid dismissal Monitoring work Having a proper work plan Making a follow-up on the plan Being responsible as a worker Having few black farmers able to have proper plan and make follow-up Working tools owned by black farmers Working does not prove possession of working tools Working hard farmer sticks to their work Attending only important meetings Testifying by peers about a diligent farmer's ability Working hard easily noted
• No, no, no, that is a chicken and egg situation, which one came first. • Eh, to give you a practical example, I was in one of the committees here, is called the DAMC, is running this Agriparks and everything • So the terms of reference from the minister said we need a commercial farmer to sit in that committee, then I was there before them and I said I am not a commercial farmer. • They said, no you producing more than others, commercial farmer is not the question of producing to me, is a question of having land, I don't have land, so where do I commercialise my business	Considering it a tricky question Attending one meeting requiring commercial farmers Feeling not meeting such a requirement because of having no land

• And I have certificate from GrainSA, the last certificate I have is 500 tonnes produced on 200 hectares • That certificate I have, 500 tonnes on 200 but other people cannot even afford 200, you know I'm working • But should I call myself a commercial farmer, I cannot because I don't have land. • Then they check over 10 you can go to million, 3 million depends on the season, but then to be honest with you, I won't call myself a commercial farmer • Because I am seeing some challenges, first challenge is land, all the assets we have it, all the basic equipments we have them, all the basic implements I have them, all, all, all. So that's what I say, give me land, I won't go next door, just give me land. • So when it comes to turnover because they have a tendency of measuring commercialisation in terms of the turnover, yes I can qualify, because this year • I can say my loan with VKB is two point four, and they are sure that I'm going to pay the two point four • And if I paid the two point four it means my turnover is more than two point four • Possession of the land • Then you can qualify, then you can qualify. • The turnover is the second question, yeah but you must have land first, but if you don't have land, working on contract basis, so can I call me myself a commercial farmer when contract expires in three years, the fourth year I don't have any land, am I still a farmer? I'm not, because I'll be out of business • I'm not, I'm not, that thing is not sustainable, it's not sustainable • So it might be continuous whether is it taken by the children, the grandchildren but that it stays in the family, it's sustainable, then I can call myself a commercial farmer. • And they must work and produce • That's how they even tell you when they sell the farm that it was in the hands of the family for the past sixty years. Yeah! • It is still the same farm but running by the siblings of the farmer, working on the same farm, then you can say those people are sustainable. • When they come in, you find that there are tractors, cattle, there's sheep, theirs is to maintain them and carry on • That's all, just maintain and carry on, that's business • We haven't got our own farm. We rent from others. • Man, what I hear is that you are commercial if you are able to plant about 100 or 150 ha up to 200 ha • Then if he has production there, then these agriculturists say if you are able to harvest that amount, you are classified as commercial that you refer to • And move from the lower position. • No, I am not yet at the level of a commercial farmer but the way I think it is a person who is able to plant about 500 ha • It is true even the whites can plant that much but they have a loan, it is not cash • Commercial farmer is when you have enough implements, let me say perhaps you have about four or five tractors and you know that you do a particular thing at a particular time • When you say you plant, you do just that not that thing of using a ripper after that you come back to plant or spray, this one does this or you plant using three planters then you are commercial or you plant	Being chosen for producing more than others while still being having no land to commercialise Awarding for being competent Producing more compared to others Being landless disqualifies one from being a commercial farmer Money maketh man idiom does not have place here Owning land is a priority Measuring commercialisation with turnover is a norm Measuring by turnover is a case in point Knowing that one can deliver according to promise Qualifying by possessing land Being contracted does not qualify a person Expiring the contract ends the business Having no land means no business Processing is not sustainable Land means business as there may be continuation of business from one generation to the next Children continue work When the farm is sold, they say it was with the family for decades Possessing spans over decades This is sustainable because there are implements and livestock Maintaining and carrying on is key Working on rented land Yielding per unit Producing based on size Graduating to commercial Area to be planted and not the yield Achieving land size through loans Having enough implements

about six or seven farms even the cattle you have about 200 or more, even for your workers you have about ten of them who are permanent then you are commercial but at this moment we are still very low • No it checks how much your work is able to cover • It checks if your stuff is now fine, you no longer say I am going to hire, no you are now able to do all things by yourself, you no longer need any assistance even government assistance is not needed, like now as I say I want irrigation if you are commercial you only go to the bank and ask them to install whatever you like and you will pay, and you pay a certain amount annually. • If you say borrow about R10 million they never doubt you • Your assets are valued so much, if you say you want to buy this car • They check what your security is should you fail • Unless it is a new thing because it is a security per se and if you fail they then take it back • They take it back	Amassing implements in order to cover large area in a few days Enough implements No longer seek government assistance Enough money to do whatever you like

APPENDIX H: OPEN CODING- GRAIN FARMING COMPETENCIES

Interview data	Coding
• A good commercial farmer you should be dedicated to your work	Working dedication
• because farming has huge challenges	
• Sometimes you will find that like for the past three years we experienced drought	Occupation with several challenges
• So if you are a young person like me you quickly give in	Lacking perseverance by youth
• have a five year plan perhaps where you want see yourself in that five years' time, ten or three years starting from now	Having short, medium and long term plans
• That is the thing that will push you if you have a vision and mission	
• the skill to draft your own financial statements in order to determine if your business is moving forward, backward or stagnant	Being skilful of drafting financial statements
• the skill of planting by attending courses	Attending refresher courses
• if you do not have the skill in the farm it is going to be difficult as the way I think according to me what makes young people to suffer is the lack of skill	Lacking skills pushes youngsters out of the profession
• attend short courses related to grains and know that things change and sometimes even the weather patterns change so you should keep abreast of the times	Keeping abreast of weather patterns and developments in the trade
• So that requires a deep skill	
• To achieve that profitable farm calls for the right foundation	Having right foundation is a key skill
• That is your skill, you know the right stuff about the work you do	
• then you already are right, that is where you will realise that the land is small and it needs to be enlarged	Realising land needs extension
• but it should not be something reliant on the increase of debts because you work hard relying on debts, it is the same as doing nothing, there is nowhere you will delight, debts can be incurred but not wholly living on it	Avoiding debts at all costs
• if you live on debts you are already in danger	Debts are a danger
• try by all means to have working tools	Acquiring working tools is key
• if possible and then check if your situation allows you to increase a particular thing, then you will get all things right, also my brother do not try to cover a large scale of land from here to Kestell	Assessing your situation is key before embarking on debts Starting small is key
• But not working accordingly, it does not help, covering large scale	Being efficient and effective is important
• When you check production is not equivalent to the scale covered then it shows that things are not right, you have spread too wide.	
• If you start right	Land is not to be gambled with
• You will end right, if you just say as long as I plough though not right, since I am one of the farmers, then that does not help at all	
• It is a great loss, now here on farms if you managed to plant for this season, you will not afford anything in the next season	Mistaking once affects the whole value chain
• if you fail this year, next year you will have to knock at the loan sharks' door, know that you are in trouble, there is nowhere you can go	One trouble leads to another
• money is exactly what we working into, not to please somebody	
• We work so we can have money, if you can work so that there is money that you have saved you are working well	Profit oriented Being able to save earnings
• Also you will need to find out ways of sparing the money you have, but work should just carry on because if the money you worked for, you cannot keep it there, it means your life is on a stand-still, you should know that money is made by another money.	Investing money earned

• You find that you need something but not willing to spend with something attained through money • You are in trouble brother, you will never get right • You need to spend right and ensure that the way you use money does not save your future, once you insert a seed there you are working for the future • If you started right, let us talk about the seed, if you put in enough seed as well as enough fertiliser then you work well, there are things as a person that you will lack • if you started those things right, how you ploughed, what did you do with the soil, what was the soil situation when you started • But if you say no this is just God's soil • When you see someone driving a tractor or when you know what life is about, you will recognise faults as well the good stuff done, you will say I also want to have a tractor • How that person works as you see him, maybe you do not even wait a while to see what that person is doing might have some bright future • But if he does faulty work, it depends what kind of a person he is, if he likes guidance he will be guided but if he is someone who says he knows it is a problem there because he knows something in a wrong way • Let me share with you this what my neighbour once told me, he said I used to plant beans here • One white man who came from holidays in Natal drove by and stopped, and asked 'hay old man what are you doing there' I said I am planting beans, he said it looks like you are planting wrongly • What he was stressing was that you need to trust yourself more than anybody else • That person was not from here, he was from far afield • He felt like stopping by and remarked that he does not like the way I am working, my fellow farmers had been passing by without any remarks, some with skill would say hay man you are on the right path whereas they mislead me, so that taught him to trust himself than anyone else, because with confidence you can do anything • Yes with confidence you will work in anything with ease because confidence does not rely on the things you have • But you should know how to use them. • If you see that you have these things and you do not understand, there are those with knowledge • Approach them and say hay my brother I want to do such a thing, how do you see it? • You are able to be guided in that fashion but without asking you remain ignorant • there is plough with four s*kaar* and you may have a powerful tractor to pull it with four s*kaar* plough, but not knowing to set the plough right you will find that it only tills with two • You should be able to use what you have, if you can master that, then you will be fine but if it is there and you can't use it you are wrong, what does it help? • You see that ripper with five teeth, if it is pulled by tractor and only three teeth are ripping and the two are only floating above, then what does that help, are you still fulfilling its purpose? Not at all • Diesel, some pens even break there and being replaced, he only checks if it scratches the ground but in a wrong way, that is a challenge • If you lack that then it is a serious challenge but never feel ashamed to ask • If you are wise never feel ashamed to ask because many with knowledge do fear to approach you thinking that when he advises you might reply saying to him to care for his business not yours • needing help, but as the owner you need to ask, do ask, then you will be able to perform your work	Hoarding money does not increase investment Hoarding money and being stingy Challenging Working wisely Planting accordingly Using suitable seed and fertiliser Ploughing well is stating accordingly Sorting the soil well Imitating others Observing and not commenting Being open to guidance Knowing something in wrong way Lending an ear to others Remarks from people from far-flung places Trusting yourself is key Knowing your stuff Sticking to your know-how Ignoring wrong advice as you know your stuff Having confidence in what you do Knowing your stuff eases decision taking Using stuff well Approaching those with knowledge Asking for advice Asking in case you do not understand Knowing how to use implements well Mastering the use of your implements Knowing how to use tools Not knowing is costly Seeking advice helps Being arrogant to advisors isolates the doer Accepting help improves your business Theorising alone does not work

• These things are taught at schools but it remains pen and paper, if you go to school and then come back where practice is done this side, then all is fine. • You will see that you were being guided at school but here it is the final stage because if you fail here then you are gone • Greatly so, greatly so because some of our workers do possess their skills • That might even be higher than that of the bosses, but still you need to have time to enquire from him as to how he sees a particular thing and never brag about owning the resources, ask him hay man are we doing right when we do this • Someone might tell you that where I used to work we were doing this in this way, so you will be able to deduce from what he says and what he does • That is where you will be able to deduce if you are behind or ahead of the way they perform • So if you say hay man this is my place, you won't get things right • There are so many people we work with, we cannot all be farm owners • But we differ in terms of skill, there are those whose skill surpasses that of the owner • You then give him the opportunity to show how he is used to doing things, you see? • You work so well in that fashion, you even trust that work will proceed in your absence, but if you stick on how you want things done, you might find a worker waiting for you for hours just because a bolt has loosened up • He is waiting for you to tell him what he should do • You are not here and even the tractor itself has its own challenges like maybe the diesel does not flow, it has blocked somewhere, you see, then your worker should be able to fix that but if you say here at my place no one touches anything, you should know that it is how even your work will be blocked, just like that, you should know that • Seeds like maize, you cannot just take the previous year's maize and sift it, the same with sorghum as I do plant it as well and say you will plant sorghum with black heads this year • No, it has some way of being planted and it needs some chemicals to strengthen it. • Soya as well, is like that but as for others you can do that. • A bag of maize seed is about 25 kg, if you buy a bag amounting to about R2000 then you would have opted for a very weak seed • There was a certain man from whom I bought 15 bags of maize seed, each bag amounted to about R4200 • it will require what soil do you plant it into, what kind of fertiliser so he does not sell fertiliser, he only sells maize seed, you should know its quality and how to support it • On fertiliser, know chemicals provided, each one has unique role • So my brother a harvest is purchased • There is no such a thing as you have harvested God helped you, there is no such a thing • My brother a harvest is purchased, if you don't want to spend you should know that you have lowered yourself • You are not moving you are just stationed in one place • Look, here at my place it is from 4 to 6 bags per hectare, you understand • There is no seed bag that could be less than R300 each, it is fertiliser where you could find. • So as you can see this field, I have to use at least 200 tonnes and you should know that after 2 to 3 years you should improve your soil condition otherwise the level of acid increases and if it increases then you should come up with ways to drain it out • You see, you need to get lime and it is not an expensive commodity but you need to check where you are • For you to get lime here, it is easy but the catch is transport that could be a challenge for you. I have that truck which can carry about	Practising is done on the ground Having skilled workforce Having even skills above that of owners Enquiring advice from skilled worker as boss Resulting in getting things right Asking balances the scale Bragging as boss destroys the company Both parties need each other Needing skills above that of owners Giving platform to workers to show excellence Disallowing workers to make certain discretion delays work performance Awaiting orders wastes time Being strict and disallowing workers to acquire skills could waste company resources Prolonging the use of seeds reduces the quality of the yield Adopting new method to plant works Many grain seeds are like that Affording quality seed Choosing that quality seed improves the yield Knowing all components involved Knowing that all components serve different functions Harvesting is costly Harvesting is reliant of input costs Harvesting is costly Being made powerless Costing the harvest is another skill Costing seed and fertiliser Knowing soil condition Knowing how to improve soil condition Improving soil condition Being closer to getting infra-structure is a challenge

10 to 12 tonnes you see, so if I have to spread about 2 tonnes per hectare, can you see that I cannot afford it with this truck • So lime is found in Mpumalanga, I need to get transport, you then need to hire a transport and that it what is going to hit you hard • Even though its price is low, transport is going to hit you • That is where you would find that government intervenes, it gets to intervene there because such a person is working so he needs to be lifted up • And try to get him to the other side of this river because as you are planting here my brother, if acid is high, that does not pay off • Two bags of fertiliser are recommended per hectare but as a result of the soil that is not good, you could find that the two bags that you have put in have just gone down the drain • you should know where you are located, it is all about money so you can afford • If you can try to win the majority of them • You are fine, farming my brother is not easy hence it is easier said than done • It is not easy but it is easy if you are dedicated to improve where you are located, then it is easy • there are also white farmers who do come whom we learn from, some would come and ask how do you make it because it is rare for the people of your colour to achieve what you have • But some of my people would say I am being helped by so and so whereas they also can come and ask me that hay brother I have this challenge and I want to get over there, just ask you will get help but if you only think that thinking does not get you anywhere • Some say my father was working in this way, yes he was working in that way but that was a long tiring method, the way that lacked information • You see this thing of information is important, you should get used to approaching people doing the same job as yours and get closer to them, there are those without knowledge and there are those with knowledge, so get there to learn • Without doing so you are out of the game • Everything you see, is in the working condition • If a tractor gets there and pull, it works, yours is to set it accordingly and my work progresses. • I do not keep any scrap material no, the scrap I may keep is which I can use to improve the currently working, I don't just take things here instead I would take them to the scrapyard • No I don't work like that my brother, no • Can you believe it that a certain white man gave it to me free of charge? • He asked me if I need it because he knew that I have one • So he said I do not need it any longer and do not want to keep it, so what I need from it is only the engine but because I see that you are working, do you feel like taking this combine? • I said I love but I don't have money. He said no I am giving it to you • I only need that engine, there it is, that man just gave it to me • Yes it is, it is the same because he looked at mine first • So he said I have this but I don't need it, there is a man in need of this and I have taken out many parts to improve this one • It is like that, that is how life is • These people are not the same, there are those with good hearts because when I check our people I find that they are not in a position of uplifting our people • Talk is cheap but having to walk the talk is difficult, it is the nature of mankind, they feel like they would be enriching you more than themselves, that is their problem and if you work in that way you keep yourself in one place • You don't move my brother, never shame other people my brother rather give him what you know and then the ball is in his court	Counting distance between a farm and where to buy resources Pricing an item low but being hit by transport costs Suggesting government intervention to lift trying farmers Assisting by government of trying farmers Avoiding wastage by knowing soil condition Being aware of your environment Farming is not talking, is doing Improving location Doing accordingly attracts even those with knowledge Experiencing jealousy from people of your own Shouting for help you will get one Sticking to old ways of working is unprofitable Learning from those with know-how and avoiding those without Otherwise is game over Looking at the condition of implements Keeping older stuff to improve the working Attracting gifts from others through the way you work Helping others by successful farmers Welcoming farmers from the other side to improve the willing Improving others does not come easy Lifting others helps Offering the best helps you in return

• If you give someone knowledge of low quality according to the level of the recipient then that is life, you don't live for yourself my brother • Instead ensure that the way you live you are in a position of helping struggling people	Willing to uplift others to succeed as well
• It is tricky because a farm is like a round thing not knowing which area or part to emphasise because it is comprised of fields where you plant certain crops that will lift you, there is also the dairy side that lifts that other side as well	Identifying no particular indicator of success as all work together for the same goal
• It is capable of lifting	Being able to make workers happy
• Yes even though it costs, it helps because you are even able to pay your workers • You are even able to fill tractor diesel	Getting along with implements Having proper plans
• With your plans again it helps you on the other side as it is difficult there, very difficult there	Maintaining workers well
• It will help you because when the month ends you do not have a challenge of where to get money or you now have to sell some of your livestock to pay your workers, you know that there is income, you will be able to pay these people • Then you go forward, when that one arrives, you will be able to cater for other responsibilities, you are able to pay them, no problem	Getting along with people Growing with your people
• You will be holding fast and be able to pay them and move forward, sometimes you will find that you do not get anything, you get a bit there and a bit there, sometimes nothing for you, everything is taken by them • They tie you up because you cannot run it alone • No sir you can't	Getting behind your people
• The one we started explaining first when we said you need to do your things on time • That will give you high yields year in year out, that's it • Yes they should always be in good condition and you always are punctual on your work, not be late or too early, just be on time	Doing things on time Giving high yields Keeping implements in good condition
• No it depends on the passion of the business, the passion • If you don't like pigs, you won't farm with piggery, you won't • If you don't like sheep, you will never produce mutton • If you hate to work with soil, you will never plant anything • So the passion, passion, passion number one. • Passion, what you like, what makes you happy, then you concentrate on that	Depending on where passion lies Being in piggery Producing mutton Tilling soil for crops Being passionate Focusing on areas of passion Being passionate about area of farming will be profitable
• If you like chicken, work with chicken, you'll be massive, you can have now a storage from here, that takes about sixty thousand chicken because you love them, then you are going to make profit out of it.	Differing farm locations Knowing one's locality
• Point number two Farms are different. • The farms, the farm itself is different from another one, how, because of locality.	Differing areas with different challenges
• Eastern Free State is different from central Free State. Eastern Free State borders Northern Natal, some influence of rain because of Natal, you see those are the factors.	Being dictated by locality of the farm
• But the major cause the farm will dictate to you, the farm itself will dictate to you what kind of business to do there, not yourself.	Differing locations
• You can go to Memel now, they can give you 3000 hectares, only grazing, no fielding • You say you are going to make fields there, no	Being unable to do what you like but the location does
• That's why I say the farm dictates to you, to you, this is what you can do here	Differing locations
• Not to say no I was planting so much, now I want to plant. • There are no fields there	Being unable to plough in areas where only grazing is possible

• Is only grazing and what kind of grazing, shrubs are there, then you have to bring in goats, goats must be there because of the shrubs • When you go deeper in the Free State, there are no shrubs plus there are no goats • When you go to Northern Cape • There are shrubs then goats are there again • That's what I say the farm itself dictates to you, after dictating then take your passion	Differing locality Being dictated by the location
• Is it personal skills you're talking about? As person, what skills does you need… • Oh yeah sure, you'll have to have good knowledge of first the ground, the plants you're gonna go and plant, it's maize, it's sugar beans. • That's why we have broken it down. • We specialise in this. You get the right cultivars, the right seed and the right conditions because different plants want different things. So you're gonna have to become a specialist in grain or whatever you want to be in. • That's a specialised job, it's not just you plant, you must first do your ground, do insects. • So it's really specialist, so whatever you're gonna go and do whether it is dairy farming, you must identify grain farming, bean farming, you're gonna have to become a specialist. • But if you're doing it and you're not passionate, • You want to know something about ground; you want to know something about plants; you want to know something about tractors and the equipment that you use; you want to work with people… • Yeah, it is broad it's a business. It's a complete business, so if you don't even want one of those things then you're gonna fail, it's a chain: every link must be there. • If one link is out the whole thing collapses. • Yeah, that's as simple as I can put it. • Yeah you're gonna need a little bit of high-skill level as well because the terminologies that they use for plants is microbiology and things like that so you understand that you're gonna need a higher skill level • You have to have a matric and at least go to a college. • To understand because there's chemicals involved in this as well which you're going to have to understand (what's nitrogen? what does it do?) … each and every one of them. • So, like I said, to break it down, you're going to have the ability to understand it. • So, you're have to have post-matric, at least. • I won't say that, but you're gonna battle. Look, there's lots of help, but you can't… you must try and identify something and know why it does that. • But you get a lot of help from your neighbours and you ask as well, but you first have to have that understanding to understand it. • It will not be easy (answers his phone for a moment) • You wanna see if a person… (laughs). • That's difficult. • If I see someone shows me interest and wants to know and asks a lot of questions and wants to know of a specific thing (it doesn't matter which areas of agriculture) and make an effort, that is the first sign that they are interested in such a thing. • But in farming you need to also have a certain personality because there's lots emotional ups and downs in farming, for instance you see this crop here, it might fall flat to the ground, how do you react? • So, it can put you out of business in twenty minutes. • You're gonna have to. • And also, right through your life, you gonna need to able to handle disappointments because you're gonna be disappointed in farming,	Know the ground and seed type Specialising in certain crops Conditions suitable for a seed Preparing the ground well Specialising Having passion Knowing business components well Disliking certain aspects of a job lead to failure Co-ordinating Needing high level skill Post-matric to be precise Needing to understand terminology used Being able to understand Without post-matric better seek help Getting help from neighbours Having passion first Having emotional stability because anything can happen Being able to handle disappointments

because you're gonna get a drought, do you know how bad it is to look at your things and they're dying? • You can do nothing. • You know how bad it is to look at your animals and they're dying? • You can do nothing. • You know it eats you inside. • So, you're gonna get that in your lifetime of farming. • So, as a person you're goona have to be sort of strong emotionally. • If something small happens you don't just give up and run away.	Being strong emotionally Being able to stand the test
• That is right, you should work very hard, need to sweat • Need to sweat sir, not always dusting off your hands, always dusting off dirt from your hands • One grandfather's son once said to me, he has passed on, he grew up and was fortunate to be in Gauteng at young age though born on a farm, he said he saw an old man whose ears were soiled and said to me that you want me to work on a farm to be like that • So, you need to accept that when you go there you will be soiled	Working hard Dusting off dirt from hands
• Before we get there, people's backgrounds differ • There are those who go to farming naturally, em farming will lead you to it as a result of your social needs as a person because of hunger • There are also others whose background is that they have money or savings which they want to invest in farming • Such people's attitude to farming starts from a totally different level completely • A person driven by hunger is humbled by nature if you want personality • So he will do everything that is necessary to get food • If you train him to be productive, he does that under the circumstance that I have to • But he who is loaded with money is not humble is arrogant • But the need to perform better is driven by money he has at his disposal, normally people with money coming to farming who are arrogant • I think that is a personality that is relevant when it comes to commercial farming because the role of the game there is competition • So in most cases people with money • They bargain better than people who went to farming because they had no income or no food • These two people what I see farming requires from them is patience, that is the first one • The second one, it is not possible to excel in farming without acquiring or developing certain skills • and the skills that I will talk about which I find very important that people who survive in agriculture are one, there must be production skills • You need to know how to separate maize from each other within the rows and between rows • just to cite example, you need to know diseases that are likely to attack your crops as well as things that could help you prevent them • So that skill forms the greater part of your personality of a person who will succeed in farming • Because in farming you have only one opportunity of succeeding, there is no option B • There is only one opportunity, it is to do the right things, the right way and the right time	Differing people's backgrounds Having others farm naturally while others is because of economic reasons Being a hungry person is humble Doing anything to get food Being trained he feels he has to Having money means arrogance Performing better to amass wealth Being arrogant is relevant for commercial farming Bargaining better Being patient is key for both Needing certain skills Having production skills Planting skill Spraying knowledge Succeeding only Doing things right, right time right way

• That is the only opportunity you have and if you do not have the right skills, you will do wrong things, perhaps at the right time, and that's where we fall • So to me knowledge that is related to farming or agriculture • Whether you acquired it in a formal or informal way • What matters the most is a person's skill • Yes, both of them either arrogant or humble, they need to have patience because in farming the money you invest today, you can only get it after 5 years • To be honest, the way it is if you start to invest today • You can confidently say if things go well for you it could take about 5 years before you get your returns you invested • That is how things are. Another thing that I can say is related to one's personality • I think farming needs someone who is not driven by benefits, passion is part of farming • Passion, why do I say that you can plant something and that may not grow because of environmental factors related to drought • You still need to persevere under such circumstances, you cannot just throw in the towel so anyone venturing into agriculture I would encourage people to go there as a result of being driven by passion for your acts • Never be driven by emotions when doing that, I am not sure if they are all, what I value is that one should be driven by passion and be patient enough to get rewards because it may take time • And the third one, he must have what we term production skills. • There are many people who went to agriculture schools • But they don't have the skill to practise it • That is where I said to you farming to me is a lifestyle, if you don't practise it you lose it • So it doesn't help to have gone to school but not practise what you learned at school • You will see once you start practising everything falls into place and your understanding becomes even much better when you practise than reading • Before you ask that question, another thing that I am not sure if it is part of personality but I still believe that you still need a certain level of intelligence to survive in farming • You need a certain natural intelligence • No that you need, in most cases things that you will encounter as you plough or breeding animals • Will force you to take decisions always that you had not planned for • Because it is not written on stones • Farming is not something you can say is crafted in stones • This year it may rain early and the other year late • If you do not have the intelligence to learn those things yourself • Then you cannot make decision you are bound to make under different circumstances • You need to have intelligence I noticed many people are into farming who have resources but unable to co-ordinate all the resources they have for the benefit of producing • Some of them are better off • But simply because they don't have the knowledge and intelligence to utilise those resources they become unproductive	Knowing farming formally or informally Waiting 5 years to see returns Being passionate is key Persevering through passion Waiting enough to see rewards Farming must be lifestyle Losing it if not practising it Needing intelligence Deciding on plans Co-ordinating resources through intelligence
• It is a lot of stuff, a lot of stuff • A skill to work with people • Know about the rain, know when it will rain • You must know the weather, it comes with age • Know the soil, soil type, type of seeds, chemicals you want to spray, type of fertiliser • Have to work a lot	Working with people Knowing rain Knowing the weather Knowing the soil Working a lot Being not lazy

• Must not be lazy • Work smart	Working smart
• Successful farming requires focus and passion like any other business	Needing focus and passion
• Skills required in successful grain farming are knowledge of suitable types of fertiliser as well as types of seeds	Knowing seeds and fertiliser
• It is to prepare the soil first of all • Yes prepare the soil, and never plant when the soil is dry • It must have moisture, when it rains after you have prepared the soil, that soil is able to retain the moisture • How, let me say you had used a ripper or you ploughed • If you had levelled it well using a disc • No moisture can escape there • It will keep and by the time you get in with the planter • You can't plant in the dry soil sir, no • It will be a loss because you will see them cropping here and there • Yes you must do so first	Preparing soil
• Without preparing your soil when it rains it will just flow without penetrating the soil but if you prepared it, having used a ripper or something else • It is going to be fine and preserve it so nice • You first have to kill the dirt and use the ripper first and after that you plough • And then you level it well then you are done with it	Levelling the ground
• When it rains it will preserve it • You will notice after a month or so when you dig up with your finger that it is so wet there	Levelling preserves moisture
• When your crops grow they will be so good and you will laugh alone as you arrive there • You must be someone loving your job and be determined • Farming sir can really make you happy you should not be dragging your feet to go to it no, no • Be determined, you will succeed • Farming needs you to work very hard, very hard • Yes, deprive yourself of the nice times • Farming? If you are prepared to work you will work • You will work, you will work • Take care of it and love it	Loving job and being determined
• You will succeed but if you are a kind of a person who loves entertainment, forget it and never waste your time, I plead with you sir • No leave sir, leave it.	Working very hard Depriving oneself nice time
• You see as you just pass by driving that this child is working • If a person is determined you can see that • Look at white farmers • Those people really work • There is time for entertainment but when it comes to work do the work • It needs such a person, be determined to work • No, no, wait, if you start playing I say wait • Play with what, a farm?	Being passionate

• No, wait, it needs a working person, if they say you are a farmer, work • Then that person goes far • That is fertiliser, fertiliser • Never put in fertiliser only remember the soil needs to be taken for testing, take soil samples to determine what type of fertiliser is suitable for the soil • And even these fertiliser salespeople do come and indicate that our fertiliser needs the planter set in a certain way so that it does not put in more or fewer than required • They come and set your planter and tell that it needs teeth of a certain size so that this is how much you put in • They do come and set a planter for you, I used to ask them guys why do you always come and set the planter every year? • They would say no sir at times you find that our fertilisers are not always equal in sizes, sometimes they are little bigger • And sometimes a little smaller, thus we know that for this year they are of this bigger size hence the planter should spit out so much, I then said you answered me, do you get that? • Sometimes you put in small quantities when it needs big ones, hence it will not succeed • Even the depth counts • When we plant maize we use a ripper • So it deepens into the ground • There at Warden, no sorry, as you drive from Fouriesburg heading to Bethlehem there is this place which I forget, no it is Cheldon • You don't know it, they hold meetings there even the GrainSA and others are there • We go to the fields there • They show you how deep you should put in maize and find this type of soil • Even your planter should deepen so much, you will find your maize even if you don't use a ripper you find your maize so small and unable to hold on during strong winds your maize will be put down • You will lose, once it has lied down it is rotten already • At the silos they see it and you cannot cheat them there by taking the rotten one • Those guys at the silos are so smart, really you cannot cheat them • They take from here to there and over there and their machine drops them in there • And they sieve it and fill up a cup size of maize • It has to be only two that are rotten then they say man you work • But if it is filled with many rotten ones, no man they take and weigh them • They count there that you have so many tonnes, how many are rotten then you see you lose • There are guys who produce loads and find that they are powerful • Farming is so nice, I love it with all my heart • No man can cheat me with farming • What I also like is wheat, these coming months are for it you will see • Yes May/June you will laugh as you get there • Without rain, you will see it as you go past it there • You will see man • Soya that we produced there man on the farm • Let me check for you on my phone here, I do laugh alone when I check it out • Here I am (he proudly shows me his photos in the fields where they had grown plenty of beans) • It is beans here • I would stop a tractor here and laugh alone (showing me other photos) • I have passed here, you see these are beans (continues showing me other exciting photos of green) • Look at soya I produced.	Having some time foe entertainment Testing soil first Setting planter in a certain way Considering depth as well Being blown away by wind if not deep enough Counting loads in tonnes Being passionate about it

• Now this is soya (showing me soya photos) • It is all bushy, it becomes a bush • Man, we were working • Never say that, we were working • This is all soya and the way it looks I had already sprayed it • You would find that all weed had been destroyed • Yes, it is beans here and it was very wet there (continues showing photos) • When it rains too much I would deepen this tool because beans do not need much water • So I lessen that challenge • When it rains the water runs in the furrows I try to lessen that problem • You see when I had deepened like this here (as shown on the photos) • Water runs into the furrows • So that much water never burden the beans whether it rains hard, water will be in the furrows and when it stops those beans are fine and the water also sinks down, you see? • It is like a tiller but it is not, it looks like a scuffle • Yes, I would have used that one before because you would destroy them so that will be a waste, there is a tool for that to help you destroy weed before they grow sideways otherwise you destroy them • Look at this you see I am just showing you to arouse your interest. • When there is weed this tool takes it out • Before coming with a ripper I am done with this one • No, it does not level up, there is a tool that levels up • You would have combed it and done with it • Exactly it helps you break hard soil and levels up so well • Very much so, mind you that you would have started with this tool • Yes and then follows a tiller which also has those things • Yes it does come first before the disc because a ripper does not destroy weed okay? • This one destroys weed and then I put in a ripper because it allows water to sink in nicely • You get it now you would have finished your job	Knowing using tools properly Lessening water volume
• Planning accordingly • using available resources wisely • working hard but smart meaning being time conscious to preserve moisture in the soil	Planning Using resources wisely Working hard
• Soil preparation which includes putting in lime if necessary • love for tilling the ground and particular grains • no sleep lover but hard worker • identifying suitable fertilisers for your grains	Preparing soil Working hard
• You know my brother the question of skill is not so important, the issue here is the question of funds, we do possess the skills as a result of training we undergo • If you say today you know this they come and inform you that we no longer do it that way, there is now a new way of doing it • The only trouble is funding, even when you present your stuff the funders should be convinced that really this man… • That is the only thing no other serious matter, even when you work it is not yet a farm that can generate everything by itself, I can thus say it is still developing	Needing funds Delaying returns Being passionate

• If not then it supposed to be making an income on monthly basis • For now its income is only generated after harvest • In order to do anything you must love it first my brother • It is to love it and have interest in it like any other thing say having a dog • If you do not like it you are not going to take care of it but if you harbour its love • Never want anything bad to happen to it then you are going to take care of it • But besides that there is no day where you will have love for it • No you will tolerate because you tell yourself that I only lost this year	Tolerating what you love
• It like saying this season hail damaged my produce and insurance settled my debt • I never worked this season but I am going to start afresh and I do not owe anybody • As the insurance settled my debt, I say I will start afresh next season I did try but with no success	Settling debts

APPENDIX I: OPEN CODING: INDICATORS OF GRAIN FARMING SUCCESS

Interview data	Coding
• Is if you are financially stable	Being financially stable
• You have experience like now on drought issues, you know how to channel your affairs	Channelling one's affairs properly
• have a plan in other words this person's business is at the level, you know in crops you are fine in planting them	Having acquired all the expertise needed
• because what mostly important is knowing when is the time to harvest wheat you harvest wheat, you should know when it is time to harvest dry-beans, you harvest dry-beans	Knowing planting and harvesting time for each grain
• that business should rotate in the farm	Knowing grain rotation throughout the season
• Then we know there is something you are harvesting when the time is right but if you lack in something you harvest only one thing your mind is in one thing you only harvest or work on maize then we can deduce that this person is not yet a commercial farmer	Knowing one crop does not qualify one as commercial farmer
• but to be a commercial farmer it means all your things are balanced, cattle, if you have a breakdown in crops, you would be lifted by livestock, we know then that this person is a good commercial farmer	Being able to balance crops with livestock
• It might happen when you see me walking there I look like I am successful, only to find that I am overburdened in my spirit	Being spiritually free means success
• A successful man, you see that in his work he has everything that would help him perform his work	Succeeding is having everything that helps to perform one's work
• Even if he may have acquired them on credit but what he has should be in line with his work, then that person is successful because he does what is fine according to him.	Succeeding is doing what is in line with one's work
• It is true we have many wishes but you should be having tools that would help you carry out your work, then you are fine	Having one's tools of work is the bottom line
• That has a challenge because there are people who are good in talk but not in deeds	Walking the talk does not come cheap
• You should know that thing, as we are gathered there, there are those highly capable in talk	
• You have a challenge because you do not know where he comes from but if you know then you compare the two things that this thing does not give a clear picture if you do not know where he comes from, if you know then you can decide about a successful farmer but not based on his appearance in a suite, no it does not work, what works is a person's ability and then it earns him respect among others	Earning respect is as a result of one's ability
• Who knows that so and so is a farmer as well but he has expertise in this and that which are important things in our business	Having an area of expertise in a particular field is key
• Success has many dimensions, most importantly is whether you are able to help other people, not only looking after yourself and then claim to be successful, in what?	Succeeding is being able to help others as well
• Because a person's ability in his pocket is difficult to conclude	Being unable to determine someone else's financial success
• Even if a person may say so but you cannot know exactly and you cannot verify that	Area of expertise is key
• What counts as whether a person has expertise is what he does	Machinery ownership other than being in debt helps stabilise personal development
• Yes, also what he has should be considered as to whether it is his own performance or the support he received, that is difficult because you could find those things working today but all would have been taken by tomorrow	
• You see, that is a challenge	Knowing the suitability of tools to the environment helps

• Tractors I have here as you can see, the likes of Landini and all others, I do not want the 4x4 tractor, well I have only one 4x4, the rest are the ones I afford and are suitable for this area. • These are tractors of better quality, better in the sense that how much do they cost, that is important, I cannot buy a thing that would need half of what it requires, two to three years after that... (Notification on his phone). • It is now 12 o'clock and this is a notification about the prices also that markets are closing • You see if you have yield stored in a storage facility you check the prices whether to sell or not, but if you are in debts things are not that much in your control, your creditors push you to sell and they would say to you our year is ending, so you will sell against your will, against your will because you have to pay those people • So at the co-operative I have my 600 tonnes stored there, I can sell whenever I like not pushed by anybody, I can sell at a low price to settle the debt I might be having and that is important to me • Because I don't want to get in debt when I have things that would to settle that debt though it might be at a lower rate but I have it because being in debt comes with interest, so that is not being wise • People taking credit, if you are prepared to buy a second hand tractor in good condition you could find yourself paying about R500 000 to R600 000 you hear me, now if you have not yet had that kind of money in your life, do you think you will make it with that tractor it is not easy, so for it to return and claim that the tractor is yours you would have paid close to R1 million • Before you own it. It would have left you with nothing, it is true we have a problem just check out tractors and cars there are so many of them here on the roads, so what I see as misfortune for us people is that government committed two to three mistakes by making it easy to get loan • This has landed many people into trouble • So people buy cars on credit and a car is not something so much helpful, no it does not work for you, it is something that takes you from Qwaqwa to Harrismith, like tractors the wisdom that they brought with Landbank • They no longer need security, security is what you have, if I put that tractor to them as security, when I am no longer able to pay it, they take the tractor and are done with you. • Now, that thing of registering your house, furniture in it and what you have in the house, they no longer consider that but they only are interested in what you bring to make sure people are not burdened • That is where I commend government but they somehow trap themselves. • If you check now there are two things where government cannot escape • This thing of giving people houses • It is not something they can overcome, this thing of children given money for falling pregnant • Those two things really government is hanging themselves, they are not going to escape that and once they try avoid doing that, that government is gone therefore with those two things they have committed serious mistakes • They should have encouraged people to work and these children to go to school • This thing of them taking condoms to school • According to me they encourage these children to engage in sexual activity • It is so painful my brother, those two things government will never ever come out of predicament, they will never • For them to come out of that such a government would have to fall completely and start over, they could get it right • They could start giving people work but they have too many unions which in many instances work against the employers	Choosing implements based on quality and cost improves performance Being aware of market forces is important Lacking facilities hurries one to acting instead of having wider options before making a decision Having a variety of options opens up additional alternatives Being in debt forever demoralises a farmer because you have limited options like settling an up spiralling debt once and for all Owning resources on credit takes toll on debtors Getting priorities in order enables securing loans Lacking security complicates access to loans Commending government for facilitating access to loans Doubting if government's plan on social services would succeed Suggesting that it would succeed by levelling playing field for job creation and education Affording unions too many rights Creating a bad impression about employers

• Many a times they are encouraged to be on the workers' side and the employers are viewed in a bad way • I can work here alone but these people can also work at their homes because whenever I find it difficult I can hire a contractor to work here, I do not have a problem with people • So government should make sure that they do not build a wall between the employer and the employee • Should assist to bring together these two parties but we do not find people who can do that • Unions my brother are run by guys of the same age as our children • If a child comes here to tell me how to work when I even know that at his own home he failed to listen • How will I listen to him, that is a challenge, I really feel sorry for this government because there are instances where they take decisions that are bad. • I have just told you about Landbank, that is a very good decision • Once you are weak and go to these commercial banks like Absa, Standard Bank, FNB, Capitec is much better, these others are merciless and when they come here they leave you bankrupt, if you failed to behave as per the agreement • Someone will come sent by them to register what you own and by so doing they are in the process of getting you bankrupt • But Landbank does not do that, they in many times try to guide you to achieve your purpose • At times they even let you attend courses that shape what you know, they encourage you and sometimes they even pay for you those courses, you hear my brother • These are money people but then it looks like they do not help you make that money • They cut your legs and never allow you to move forward, many of the farmers have been made bankrupt by these commercial banks • Landbank also made others bankrupt before but then after these new developments, it is now a great bank • They are now in good standing now, I also worked with them as I made loans with them, I settled all my loans with them and I like the way they work • this thing is difficult, it is a competition, like playing the dice, sometimes you win sometimes you lose • So, I can't say I am successful in this dice, I might win tomorrow, (some laughter), when you look at us now, you see that we are settled, you can't say we are not moving, we are moving • We are also looking at God's deeds, but the fact is we are moving • Those years made us regress, they were very tough • We did not give up • We still move on, we had loans in banks and they stood still • Once you planted and never received anything, that interest accumulated from the debts hit us severely. • We tried to talk to them to stop the debt from accumulating so much interest, because this was not done deliberately • we were hit by drought, had it not been because of drought, we would have made so much progress, without it we move, now the Lord is answering • We are moving now, we can no longer hold on to it, and it has gone past us • We should not talk fearing it to come back, we just have to move on • We know that it is so many years of hunger, followed by so many years of abundance. • We don't look at anything else except abundance at this point in time • But that abundance is not for everyday • You see some of those hit regress but you stand still • So those hit can't get help anywhere, they are turned down in all sides • You will see the actions	Contracting work or using machinery instead of hiring people Creating good relations between employers and workers is government's duty Failing families breed immoral children who become bad negotiators Some government decisions are commendable such as using Landbank Going to commercial banks lead to bankruptcy Commercial banks are merciless while this government bank tries to guide you until out of debt Encouraging debtors to learn new things while the private ones never care Prior to democracy Landbank operated the same as commercial merciless banks Challenging game Being unable to predict tomorrow Trusting in the supernatural force Pushing on no matter what Challenging in times of crises Trying to negotiate when debt accumulate high interest Challenges make strong men Being aware of biblical resemblances Comparing oneself with others to determine strength Behaviour oriented Succeeding not easy to tell

• I don't know how even if you see that this person is successful, you can't say because now we eat and are enough, so we move on • Yes, because when you are not moving, you try this and that but things never succeed • Yes you move on but it is difficult, sometimes the car runs out of fuel so it cannot proceed driving forward. • You would say to your colleague man plough and plant and he would tell you that he can no longer afford to buy fuel, so it is difficult. • Then you will feel that it is really difficult • For now yes we cry but we are still moving forward, some don't cope, when he tells you agree that the difficulty is caused by those past challenges • Yes, you should make sure that what you have you hold tight so that whatever you encounter you know where you come from and what it will be like • that you should know that what you are holding on to, there is something that might happen, you know sometimes even fire might erupt, we once had a dangerous fire • Fire erupted as people had made it somewhere in Kestell, it devoured tractors here • Car tyres burned and that fire destroyed everything here and went further eastward • Fodder caught fire there, remember that we milk here, everything burned down, so tell me if you say there is nothing you can't do anything • I struggled with those cows as I even had to collect this hard hay and even the stalk left in the fields and mix them • There you can see that fire is very dangerous, yes, even drought we may not talk about it but those are life challenges we can't avoid • We can't go past them because we move with them • You will find that now it is difficult, it is bad, but all those go past and you even see yourself beyond them going forward • Had it not been because of that, we would have been very far • So those years trying to pull but not moving forward, you find yourself in one place…light laughter…what you are pulling does not follow, so can you see what kind it is? It is difficult, difficult sir	Fuel costly Persisting through hardships Working cautiously Risking life from diverse factors Area prone to dangerous fires Risking loss of resources due to natural disaster Facing tough times Avoiding disasters is impossible Holding head high Being slowed down by disasters Trusting after challenging times
• it is easy to show that especially we black people, you will notice an expensive car • That's what I learnt growing up that when a person gets much money, the first thing is a car • First thing is a car for us black people, we derive much joy in car, for us black people you will first notice cars that nay, I used to drive a particular car, now I am driving Land Cruiser in two consecutive years, it means things go well for him • That guy bought a tractor last year, and that tractor amounts to a million plus • He has now bought another tractor which is more than the previous one, those things show that things are well for that person • That his neck is getting fatter and fatter • What shows that I am successful…The way I feel it, I love farming very much, I don't walk about too much for people to see that I am successful, they will notice the implements • Like now, I wish the old man could buy a combine • They'll say that man is now having a combine, even if it is a second-hand, • They'll say that man is actually progressing • For me they will notice the implements • To attain them • No, they just check the assets, no the onlookers, they check the assets	Being materially minded Spending on expensive items Noticing tangible things for blacks Buying costly unimportant things Changing items in a short time Noticing change in person's appearance Seeing new implements Having another costly implement Noticing new implement shows progress Noticing assets Noticing vehicles Noticing implements

• That's all, that's all. L is driving Hilux, there's a Corolla there, there's Mercedes Benz in this garage • He's having four tractors, okay, that man he is living • That's the conclusion they don't have any other reason, and if you tell them that I don't have money • they say you are a liar you have money, and you know very well that you don't have money • If you say you have money, what is it, what is that, what is money? • No, success, you must always have a positive balance in any business • You must have a positive balance. What I mean is this: I borrowed two million • I must pay it the two million and remain with a 500 000, that's a positive balance • That's a positive balance, then I have money. • That's the money I am talking about, now I have money • That's the cash I can use to do anything, you can even renovate the house, then I have money • Ehe, ehe! Just check this is about three years since this house was renovated, within five days, eh? • They say he is having money, but he said I don't have it, I saved money to do this, within five days it was like this. So they say within five days	Onlookers' opinions on success Succeeding is having money in the bank Borrowing money from the bank Settling the loan and remaining with something Succeeding is having money Being able to afford one's desire Noticing extensions in housing Being able to do what you want in a reasonable time Producing skill
• Well, signs are his planting succeeds, his tons as well like if he makes 5 to 6 tons per ha of maize • If he planted soya, it should give him 12 tons per ha • Beans be able to make 14 tons per ha at a minimum and from there you are were talking about • If you can reach up to 6 or 7 ton per ha or even get up to 8 to 9 tons per ha on maize • The way I heard when we were at a certain place two of our people have achieved that and were raised to commercial as they managed to plant about 150 ha on maize which they succeeded • So I think it starts there because sometime it would be that 150 maize and also 50 of beans which make it 200 • Then they call you a commercial farmer but then they do not include things like tractors, whether you are using yours or hired that is not considered, they only consider that ability on a farm	Excluding tools Measuring output
• We need to agree once again at what level of farming, commercial or small scale? • If you want to measure if a person succeeds in farming • I say to be realistic you must measure his output per area • Yes, we need to measure him according to the area he occupies • It doesn't matter, if a commercial farmer harvests 6 tons per ha • And then if there is a possibility that a small farmer can also harvest the same yield even if he does not plough 1000 ha • I think it will be fair to measure the performance of those two people • Well according to me because that is where the source of a farmer's growth originates • It doesn't help even if we give you many hectares but your output being below the norm • So I will value farmers' success based on their output per unit area • Then I will be saying this person is succeeding, my understanding based on what type of a farmer he is whether being a small farmer able to produce in a similar way as the big farmer, to me is a success • Because we cannot say the size of operation no, success would be can this person be compared to the one we say is successful, normally they are the ones successful but I can tell you that not all of them are	Producing scale

• Sometimes they are not productive they are boosted by their scale of production • Not all big farmers are productive but because of their scale their risk is reduced • Their risk is reduced, so they cover themselves up by ploughing a large area • Those are the people whom we say they have capital perhaps history in capital • They are able to use the capital in order to compete • But to someone without capital but being able to produce at the level of a big one per unit area to me that is a success • I don't want to say farmers' success be dependent on materialistic things, let us try to be very objective when talking about this issue • And say firstly why is this person having animals or ploughing, if the true aim of ploughing is to produce food or to multiply it • And multiplying food has its own principles that if a certain plant has so much potential of multiplying per unit area • We must always remember that eh, if a farmer is able to exhaust the available potential of the natural resources • To me that is success, remember his efforts and contribution to achieve that are the ones that will tell if he will achieve or otherwise • So I don't want to view it from the angle that a farmer is able to build his own house • Being able to take his children to school, able to pay his policies, able to buy his car • I don't want to view it from that angle because not all people have the same or equal drives, so that will be a weakness on my part to view success on things one can buy • But to me it is, given all the challenges we talked about of climate, environment, capital, the political, if a farmer can be able to produce a high yield • Above the norm, to me that will be will be success, then it simply says even if you are young • But because you can master the dynamics of production, if we give you a large area it will not be a wasteful exercise • So I can appreciate basing a farmer's success on his productivity • We will see through what your yield is from the fields that now you are successful, what you take out of the fields that you are now making it and are able to settle many debts • Settle debts, even tools of trade are now enough • That this man is going somewhere • When you enter the fields we check that this man really has achieved something • But if you are still struggling with just one tractor and a 20 litre container of diesel • That make you struggle and it bores you • You must arrange tools of trade so that you have them • Even if you buy them by credit, it is important • If you buy a tractor on credit or diesel • That's not being foolish, you are working • Without them going to the field with only a 20 litre diesel container driving prrrr… to Kestell to fetch diesel that will only last two days and it is over • Because what I know is that each and every morning you need to fill up your tractor with diesel • Every morning you apply grease and fill it with diesel, each and every morning • When it gets there it has to work, that thing never stops • If a person does well you will see in a year or two to three that this person is going somewhere that there is a change in the fields	Multiplying food Exhausting potential Giving large area to undeserving ones Settling debts Having enough tools Buying tools on credit is not bad idea Progressing within three years

• But staying in one place with such a single tractor, no wait a little • Exactly, you know that for your work to improve we see the tools you use • It shows that this guy is going somewhere even though first he had been struggling in the previous years but he will get what he aspires for • And again we check if there is drought it is known but even without it, you still struggle • No just leave, the fact is at the field we need tractors to line up • Then we say you got it, that is how we want it	Having enough tools Having something you want
• For success I will revert back to the issue that when you want to do something • Plans succeed when you have something • Yes, you cannot say you want to buy a car without anything in your hand but you plan after having gotten something or like this season I harvested • I have been needing this thing, you don't buy a thing because you want it but because you need it • So you say I have been needing this thing • But now I have covered other needs so let me do this one • In fact it is what you had been aspiring for • But you have now accomplished it • Well you have success because what you wanted you have it now, it is like when I say I wish I could have so many cattle • Maybe because of challenges you were wishing to be somewhere and you say if I could cover so many things, it is a question of money does not suffice • If you achieved this you still say if I could make a few steps further but success is accomplishing what you had been aspiring for	Having covered one thing Measuring success on what you have

APPENDIX J: OPEN CODING: IMPORTANCE OF GRAIN FARMING IN AGRICULTURE

Interview data	Coding
• their role is big in agriculture, for example we know that Free State is the core of agriculture in the whole of South Africa and if you check most of the farmers the commercial farmers are the one leading and balancing the economy as the statistics tell, it is said Free State is the core	Knowing in this region that agriculture is primary for economic development
• its role in agriculture is very big because if you check also the GDP and food security	Helping in food security
• The issue of government meaning the Free State government can play a major role in keeping the province as the core politically and financially if they could support the commercial farmers because at times they do incur huge losses since around this time of fires as we know Free State has strong winds	Supporting farmers as government is paramount
• Many hectares were destroyed by fire and that degraded commercial farmers but if our Free State government has a plan that in this fire season this will happen subsidies should be set aside for those commercial farmers and farmers in general from government, I think that could push a lot from this Free State government	Deepening support in times of natural disasters
• Government should come to them and hear out their challenges because there are huge challenges in farms which our people experience and you find government taking a back seat but if it comes to them and allows them to voice them that we have farms, we managed to work before but encountered problems, here are our farms but cannot work them, what is it that government could do, maybe it could hand out some grants to try to lift them there	Farming generally has many challenges Seeking government to hear out what farmers need
• Then people's morale could be boosted, I think that plays a big role where you find young people also taking the backseat as they saw how their parents struggled, so if they saw parents struggling it is difficult for them to take a similar route, but if they see government providing some assistance and they as well receiving skills, I think that could play a big role in agriculture	Supporting boosts farmers' morale Lacking thereof pushes young and prospective farmers to the backseat Seeing struggling fathers demoralises sons from pursuing career in farming
• It is the issue of purpose, if you are in that side of work it is production, the first thing is production and that production should be in a position of sustaining you as well as helping others	Producing is paramount Sustaining farmers as well as others through production
• That is a major purpose of being a food producer, you see because if you work from hand to mouth that is only self-sufficiency, you are in the wrong sector because you work with people who provide for others not themselves only	Being commercial is not being self-sufficient Providing others is being commercial
• No you are lost, in that instances you should work in your own yard then you are right	Working in small scale is self-sufficiency
• Never come to a farm to… look over there that is work	Proving of working in large scale
• That is work no question about it, look on top of the 600 tonnes I have at the co-operative	Having reserves Having supplementary produce

• That trailer standing there is full of yellow maize that I need to fill bags with, there stands a truck full of 200 bags of maize, it is beans over there, the other side is sorghum all this is what I produce • thus all that is for the benefit of the community, I cannot consume that all alone and that shows I am looking after the livelihood of other people • There is no doubt about it, when you come here you already are satisfied that this man is able to produce	Serving oneself only caters for own needs Being able to produce is being commercial
• Farming has a role, we live by it even though it goes up go down, that is the thing, if it were moving just straight not changing like in prices, that is the thing that catches us, because it is regulated by the billboard • Sometimes we had planted well and when it gets to them, they bring the prices down. • We go backward because when we plant we would have taken a huge loan, when you harvest it is true you win, when you thought you won they drop the price and you no longer are able to cover the repayment of loan • Everything is taken by the loan you had made and you are left with nothing • You now cry that you had harvested so much, even when you cry to government that prices fell down, it is not even considered, it looks like none of their business, and it is an unending cycle • That is what kills the role of farming, if it were an unchanging thing we would have been very far • You would know that when I harvest here I am gone • When you take bulk here, you are not alone, even the whites are there • So when it is too much prices fall • Yes, when they fall, they don't just fall for one farmer, everybody is affected, prices fall across the board • Yes, that is what pulls us down, what pulls us down further is maize price, diesel price is high up, now costs are high up in the roofs, they catch you there, so how can you survive that? • Imagine now diesel is at R15 something • One tractor per day is how much, now that they are two? • You need to think of how to manoeuvre through that • So many things are involved there like a meal having pap coupled with something • You use disc first and after that you wait for the rain, all this is money, from there you need to plough • After ploughing you only are now about to plant • The time you plant just imagine how much it costs for a bag of fertiliser • You see it is something high up because now even the insecticide that you need to put in, everything is so costly • You do not just plant • It is high up, remember is first using a disc, it is money after that and you will come back to plough once it rains. • Immediately after that you should have prepared the planter already, two things now. • When the planter comes in it also calls for its mates, it does not go alone, this small bag of 25 kg of seed is about R2000 to R3000, what will you say then because when you put it in the planter container it is something so small • Fine, maize spreads apart, so that bag will cover about two hectares • But that small bag is expensive • It has already taken a few thousands excluding the fertiliser, excluding tractor and that poison • It is difficult • Difficult, that is why they say in America the government subsidises it but here at home there is no such, we are forsaken • You see over there they are given land for free but they can't cope hence they lease them out to the whites.	Farming fluctuates Farmers do not determine prices of their produce Farming on a loan is a challenge Having to repay impedes progress because during harvest time prices drop Lenders demand their money with huge interests Even government does not help in these troubles Farmers do not have control over prices There is competition over resources Fluctuating prices affect every farmer Profit margins are lowered by an increase in input costs This is a capital intensive business Fuel price affects the sale of parts which also affect price of seed and fertiliser Everything else revolves around money Many steps need to be taken before putting in the seed into the ground Nothing comes cheap in agriculture Every tool should be ready for work when the season comes By now seed and fertiliser should have been prepared already All these items are costly Knowing seed sizes is key in terms of distance when planting Americans are better off because their government subsidises agriculture but not here at home

• It is difficult • We said the land comes back to us but now since they planned this, the land will go back to the whites • Because they worked enough with their forefathers • We are not, that is why others are even selling it like close by here • So now they have come up with the idea that if you can't you should just leave and let others take over • We don't know now that they say people should be given land for free, we don't know if this will work well. If someone is given land will he not sell it? • It is going to fail indeed, so food is going to be expensive, we will now have to import. • But as for us we are really trying to feed our nation • It is not like we work for ourselves here, we are serving our nation • Everything we do belongs to the nation, the milk we produce belongs to the nation • That one whom we deliver to, is the one who wins because he will give you R4, 50 per litre but see how much it costs when you get to the shop • Mind you, you are the producer here and that bag of dairy meal amounts to R230 something • A 50 kg. Now plus that guy who milks? • He has to be paid, we only lose, but still you have to endure that difficulty, if you got 1c or 2c you say it is better because tomorrow you will never win, the winner here is the depot. • Like maize, when you go and buy a bag of maize it is not the price they take from you, it is high up • Yes, they always are winners, market owners, we don't know how to fix that • They need to start here, first ploughing or before that they need to take soil sample and take it to the testers to determine what it needs and what it does not • Because if you just plant without doing that you will harvest little or nothing maybe as a result of soil acid. • You need to get lime because it is a key to a good harvest, if you had put in lime in your good soil you get good harvest. • Without that key your soil is locked and you will throw in huge sums of money and only harvest a ton or two, you hear • So imagine those costs, you teach them you start with sampling, from there they will advise you on the amount of fertiliser per hectare, they will tell you how many bags of seed, you get all the information from them. • You teach that here you use your disc, from there you plough, even there are sprays and insecticides you should show them that on this you pour in this amount and there that amount, the quantity of your water should be so much per hectare • Yes, yes, not come here targeting or deceiving yourself that you will take notes, no • If you read from books you will forget it, he has to be in a job and be determined • If you are determined you learn quickly because you say you want a particular thing • Like us, we are determined, if he just writes and say I will do, he won't, this is challenging. • He will be here and there not knowing what to do because this is what we are supposed to live by • Yes, very much so, this is the job nothing else besides this, there are no firms here we need to live and eat here • Yes, they have to be interested in entering tilling the soil, in gardens and be determined • It is quick, and another benefit for the youngsters is that they have read so they cannot forget this easily • they will even capture their stuff in computers which will tell them one, two and three • Yes, he won't forget but he must be interested	Lacking government support impoverishes our brothers Land is rented out to the whites again Supporting during their era that is how they made it, some not all of them Giving land for free yield any fruit? That is a big question though I do not see it succeeding Feeding the nation is our call Pricing is determined by the millers and processors of our produce In dairy as well, things are costly and you get a few cents as profit Winners here are market owners Testing soil samples is the first thing Otherwise harvest will be low resulting from soil acidity Putting in lime maximises soil fertility Otherwise is pouring the gains down the drain Several costs involved in the whole process Using tools properly is learned Taking notes does not help Reading books also fades away Being on-the-job is the way to go Being determined Requiring hands-on Challenging work Being passionate about farming Starting small Advantageous for youngsters as they do not forget easily Being savvy in technology assists them Being interested

• Determination is key, we would have long given up had we not been determined	Being determined
• You know as well that it is difficult here	Challenging job
• Indeed it is but if you hold fast because it is part of life we need to be used to, issues of economy that declines and surges up even though it is painful as we do not get used to it.	Quitting is not an option neither is giving up
• At times you would have planted so much having estimated that you would score so much tonnes to be able to cover your debts, only to find that the market hits you	Seeing that markets are unpredictable
• They even tell you to enter into a contract, and when do you enter into a contract is before you plant	Contracting is what is done lately
• You do it before and sometimes you do not cover the tonnes you had promised in the contract	Contracting is challenging at times
• You see it is a challenge	
• You will do that and only to find that say drought hits and you only harvest one or two tonnes while in the contract you promised four tonnes per hectare.	Contracting hits the hardest in natural disasters
• You see they hurt us with this	
• And the price is made during the contract that at least is promising, they would say maize will be this much next year, so you prepare now for next year	Those down the value chain profit from our losses
• If you could not cover the promised tonnes, I would plead with you to give me the remaining tonnes to fill where I promised and then I would give you money	Contracting could even destroy relationships
• Yes to cover that, so some people after receiving the help deny to repay you, remember it is sold in your name	Contracting could even tarnish one's name
	Improving economy
• You know I can say it is big, but for us here in SA, because I hear it is said many a times that our maize is imported	One race better skilled than the other race
• That means we black people have not been able compared to white people, I think on us black people the yield is much lower	
• Is much lower for us black people	
• The cause is we black people get a farm or sometimes through government	Giving land for free does not work
• You take it and lease it out to the whites	
• You see, you get a farm as a black person with all implements, and you take those implements, sell them and chow the money, from there you lease the farm out, someone hires it.	Lacking passion and skill destroys farming
• That's the thing I said the first thing is a car	Getting priorities right is a challenge
• A car, that people may see that now you own a farm	
• That's the problem. If you can check most of us black people who are still tilling land are few, many farms from Harrismith to Kestell, Kestell to Qwaqwa, white people have taken over from black farmers	Lacking passion
• Now to us the yield is little because, I don't know why, that's the only problem	Lacking passion affects yield
• It is lack of skill as well as, even if not lack of skill, someone may not have learned this from young age, from young age may not have done that, or he may not have ever since had love for this job	Lacking skill Learning from young age
• This thing needs love	Being passionate
• You see now we leave here for the township, the issue of feeling ashamed that I am from the farm is old fashioned	Being ashamed of working on farms is outdated
• Old fashion, coming from a farm is no longer shameful	
• Whether you courting a girl, if she loves you she will do so without looking down on where you come from	No longer affecting relations outside work
• What I think is it's old people, I see old people have leased their farms to white people	The aged kill farming by leasing out
• And they are relaxed in the townships	Young ones have no role models
• So you think that man's sons, there is a farm in their possession, but what will they know as they grow up?	Lacking skill
• They won't know anything.	Leasing out land breeds another leasing out
• The same cycle will prevail in their turn, they won't know anything, they'll continue leasing the farm	
• Yes they'll lease the farm and chow the income generated	Living from hand to mouth

• Yes that little income, that this year I have been driving Ford Ranger, I know after that guy has harvested, I'm going to sell it and buy a newer or another model just to show off, our problem money makes us mad, we black are made mad by money, when we have money we want to show off	Wanting instant gratification
• Food production is getting smaller and smaller every year, the way I check, because even some of the white people gradually leave farming for the red cattle	Interest in producing food shifting to lesser demanding type of farming
• For general livestock and even for wild animals	Shifting interest from crop to livestock farming
• I see many white people opting for that and few are left, that is why many of our food production is imported	Increasing import of food
• Yes because we did not produce them ourselves, instead of outside people buying from us we buy from them, and ours can't go out be sold to the outside world	Declining exports
• Yes, that's the only problem, it would play a bigger role if we were selling to the outside world	Sticking to food production would highly improve our exports
• It would play a big role that way	Being able to keep passion intact
• Let's leave schools aside	
• No, they are food suppliers	Growing the economy
• No, no, without them there is no food	Lacking them affects economy and employment
• That's the bottom line, they are food suppliers	Having high impact on economy
• No, the GDP is about 33%	Anchoring the provincial economy
• The Free State as a whole, 33% is from agriculture	
• Yes, it is,	Stabilising the economy of the province
• No, no, it still, the state said so, Free State is taken to be the bread basket of South Africa	
• Now, we are busy interrogating it as a bread basket, the politicians are busy, we take our raw materials	Interrogating the processing in the value chain
• here, we take them to Johannesburg, they process them and we buy the again	
• But why don't we process our own material here	Interrogating the likelihood of processing own raw material locally
• So we produce enough, we give to other province, they process it and they bring it back	
• Definitely	
• It's massive. It's food.	
• Yeah, Your maize is food for people (that's white maize), yellow maize is for animals, sugar beans is a big market food; so it's sunflower for oil, soyas for oil and also for food for animals.	Securing food
• So, it's food.	
• You are hitting me there, role of farming is when, how can I put it, role of farming as you plough	
• You are going to offer people jobs.	
• That is the first thing, okay?	Creating jobs
• Yea, from there you have a production after you have harvested, you will have some profit, I think that is the role of farming and because you and your workers are planting for society, I do not know if it answers you question	
• You do not plant for you and workers but for the broader community	
• Not at all you are not yet there, you should go further and feed the nation, this also should offer the other fraction of people jobs	Feeding the nation

• Grain is our staple food as Africans • So according to me the production of grain if done accordingly one there cannot be hunger, so grain farming is against hunger • Or it ensures that people are food secured • Grain again or let me put it this way, grain fights hunger in two ways • One, if a person produces grain for home consumption • At the level of the household, it halves the rate at which hunger would attack	Supplying food
• But if a person produces at commercial level, many opportunities can occur, one income will be generated for the producer and then if it is in a massive scale	Creating income for producer
• It can be able to create jobs for a mass of people in different levels of the value chain of grain, remember that maize is used for making cattle feed • Or for animal feed and we use it to make food for the people • Maize meal, cornflakes are made from maize • So grain per se is the creator of employment in the different value chains of grain, from primary production, processing, we are not that much involved in using maize for energy • We do not use it that much there, so as far as I am concerned the key role played by grain is simple, is to fight hunger • It is food security, broadly speaking the reason it is said people must get employment I think why it is like that • Not everyone will get an opportunity of being a farmer that we must understand, now if we can use farming to create the opportunity for other people to earn an income • At different levels of the value chain • Grain per se is hunger attacker and even food directly, so that is how I understand the role of grain farming • And that is the only reason why I produce maize, for food as well as generating an income	Creating jobs
• It is to feed the nation • As you are queuing there because men do queue there, that thing is full so • When they are at the silos there they do ask man how you are, one would say I think in a week or two I will be finishing, they say yea • Those bosses say that and never say I am finishing up, no man so soon • No man you should be off-loading tonnes after tonnes • It should be a load after load • You work and you will see especially maize • It can lift you, you should see them as big corns hanging there in the field • As the combine goes this way then it is full, then you are the man • I would go this way and it is full and I go back to off-load • I can say even the nation's economy increases • Many jobs are created sir	Feeding nation Increasing economy Creating jobs
• I can say it is to feed the nation and the outside world • Because without food we cannot survive, without maize we cannot have food • We may have money but where will we buy with it • We need to buy maize meal and something else, you know grain I can call it the nation's spine • Yes, because if we all quit ploughing and go for livestock • We cannot eat that meat alone without pap • Yes economy	Feeding nation

	Increasing economy

APPENDIX K: OPEN CODING- METHODS OF ACQUIRING GRAIN FARMING COMPETENCIES

Interview data	Coding
• start our children from elementary level, if we want these children to the best commercial farmers in twenty years' time we should ensure their foundation is right	Growing own timber
• by a right foundation I am referring to a situation where maybe as a father to a three-year-old son	Taking children along
• I should be going out with him so that he could have passion for agriculture, I think that is what caused the white people to attain the stage they are as commercial farmers,	Exposing children to agriculture
• the reason is that they started this from an early stage, so the method I see we can employ is to begin our kids from early years and move on with them so that when they are at the stage where we give a go-ahead, such a child would have acquired experience and seen the challenges and the good about farming	Early exposure helps children to make career decision related to agriculture
• of importance to monitor is government to come the farmers and hear out what challenges they face or the commercial farmers as to how they got to where they are now, so that we may have a good South Africa that could help in the future, let government come to the people	Government to consult with farmers on matters relating to agriculture
• Yes and learn what challenges people face	Learning how to respond to people's challenges
• I think that way we will able to overcome poverty and I think can be job creation	Improving people's lives
• no best method because you need to know that these things change year in year out	No best method to adopt
• The best method is the one suitable to you but	Individual suitability
• There is someone doing the same thing in a different way and what is important is your affordability level also looking at the tools you have as well as the environment where you are located.	Tools affordability and farm location are key
• If you adopt what someone else is doing it might be a burden to you in terms of affordability, you see	Copying someone might be problematic
• Because your performance is not on par with the other person	Not competitive
• The best is to do things according to your effort then you are fine, if you see you are weaker, get closer to those who afford as you see they employ methods similar to yours and do appreciate what someone else is doing	Seeking help if weaker Appreciating those doing better than you
• Then you will be fine, be in a position to know that you can be guided and you also be able to guide others	Mentoring others and seeking help if need be
• You will be able to live well	Making it is an achievement
• Never say no I have everything but what I do not like is to be given orders where I work	Ordering me in my territory is a no-no
• I want someone guiding me and not giving me orders, no someone to guide me when I say my brother I have a shortfall here, how can you help me?	Having someone to help you when looking for one Tit-for-tat method is dangerous

• That is the best method of working but if he says to me I can help you if you do this, there is somewhere such a person is hanging you, I want to be free and mainly the best work method	Having resting time is key
• Is to ask God that you have time for sleep	Having leisure time as well
• Because if you are someone worrying the whole day and night and fall asleep when people are awake, you do not live well, no but have time for sleep, time for television and time to watch it, not that when you watch it you are reminded of your problems, no I do not want that	Having entertainment time
• Have time to laugh when people laugh and not just sit there looking very overburdened but in life you are not overburdened alone.	People generally have problems
• Know that majority of people, 60% to 70% is people with problems you know that are almost the same	Treating those with avoidable problems
• To some those problems could be avoided	Troubling due to lack of contentment
• So in many instances we land into such as a result of attraction	People are overly indebted
• Look at the cars on the road, every road is full of cars but you should know that at least 70% of them is debt, how does he come out of that, eh?	Living within your means
• I work here and I can even buy the same car as that one tomorrow	
• Without any difficulties, very easily	
• With that kind of a lifestyle you live well	
• You see when that planter plants wheat	
• It puts in about 5 bags per hectare of fertiliser and I pay R350 per bag you hear me	Time consciousness of seed
• And a 25kg bag of wheat seed is R350 meaning it the same and according to my situation I am late because it is planted around June	
• I can still plant it but I need to increase the load that has to be put in soil	Amount of seed per hectare
• Normally we put in 25 kg per hectare, now I put in 35 kg per hectare so it means it will increase the rate of seed put in the soil	Never waste land
• Fertiliser you will be putting in the normal rate if you want to cover the field but not able to afford you do worthless effort	Being indebted
• Where does it take you, you going to knock at another man's house and you should know that that loan attracts an interest	
• It does not come without nothing	Being late
• He will say man I cry with you but why do you come at this time of the year? It could because there is some moisture in the soil	Grain pricing
• If you check wheat now it is around R4000 per ton, soya also makes around R4000 per ton	Some grains cannot be afforded
• Sunflower as well, I am telling about the produce that makes about that figure and those can be afforded my brother	Markets are volatile
• Look here the today's price has just come in and never think you will be fine when you borrow someone's thing	Some grains weigh more than others
• You see these Safex people, they are in Randfontein, look here it is soya, sunflower, white maize look how it has fallen, look at yellow maize it is almost R2000, here they are repeating them like wheat, soya, wheat and sunflower all are above R4000 per ton but you should know that seeds like sunflower, you can plant it from Qwaqwa to Kestell but the problem is that all these things are sold according to weight. So if you plant so much sunflower, it does not have weight just to give you example	Area to be covered when planting
• You should know that how much of an area it will require of you to produce	
• If you do not have enough area where it would require you two and half, even if you would have spread it like that it must be in a position of producing something, if you had planted well you could yield about 4 to 5 tonnes per hectare, you should have planted well.	Being profitable is small land yielding much produce
• Normally it yields 2 tonnes per hectare	
• It can be 2 and half or 1 that is normal but you should also check how big it was planted	
• If you just plant tell me how big Qwaqwa is and what costs would you have incurred	
• Where you get it is exceeded by the cost	
• You should know how you worked my brother	Clinging to old work methods never pays off
• Do not just plant the way you like or are used to claiming that even grandfather had been doing this, no	

• No it does not work that way, Safex is now sending closing prices and you should know your position that you are in trouble even the co-operative will tell you that this is for debt and when this month ends my brother	
• They encourage you through mails that what you have here might settle your debt or pay half of it, it is better man to settle your debt with what you have reserved produce than at the end of August.	
• We have problems my brother, now things called contracts that are the same as tenders, mind you here you promise a person and enter into a contract that you will supply 100 tonnes only to find that you harvested 50 tonnes, where is 100 so a contract is serious as it ends in the courts of law. It is not a question of hey I forgive you and then it ends there	Entering into contracts binding you to produce certain amounts you may not even afford to produce
• No it ends in courts of law, when it starts it says man you promised 100 tonnes but you bring only 50 where is the other 50	Breaching contracts ends in litigation
• If you do not have any other smart ways they swallow you, you should know that thing	
• You see prices are now coming as we speak look at Safex prices, here it is you see the market closes at R4690 on soya	Being aware of the markets pays off
• Sunflower is R4030, white maize at R1900 here they project that in December prices would be around there, so VKB and Afgri only tell you that the current price and they tell you how white maize is doing, yellow maize as well as wheat are doing, even the strength of our rand and you can see that it has problems as it is about R13, do you know what that means if you are exporters, it means when it is weaker you make money, few can afford that, let me show you VKB prices just for today	Knowing how each grain fares in the market is key
• Their white maize is R1803 you see this is today's prices in August	Awareness that market prices fluctuate
• Yes, but that price does not come into your pocket because costs for silos are yet to be deducted so what comes into your pocket could be around R1600 you see	There are additional costs charged resulting from storage and others
• Even the yellow maize for August could start from that R1900 you could get R1700 so when it is like this thinking that you would get all that money, no it is not like that	
• Do remember that you check prices, if you just plant without checking how that produce fares on the market, you are in trouble and that happens	Checking and knowing prices before planting is important
• You see I am on the farm here, now I know everything I am supposed to know as a farmer and I know that if I want to sell something today what price must I expect you see	Deciding to sell be based on what you know not hearsay helps
• But you should know that there are so many other farmers but some for things such as this, they do not care about that instead the co-operative would have to tell them that we would take your produce for this much, so people think they are being bankrupted thus they go and ask by how much their produce could be bought.	Getting adequate information before taking action assists greatly
• So at times the problem could be communication, meaning how you talk to him, if you talk to him like he is hired but even though he is hired he has powers to take decisions	Communication skill lessens complex matters
• He can decide on what is convenient for both parties to connect easily	Listening to the other party is important
• If you are well he can even try to help you	Being approachable eases difficulties
• But if you claim to be somebody he will push you the way he also is	Being easy when talking
• that is true you see for goods on sale if your approach could be my brother, I like what you are selling	Talking well could even lower sale prices
• You see the price given but you say how could we talk about it?	
• He could respond by saying if you check by how much would you afford it?	
• You see its price is R20000	
• And then say if it were around R16000 I would afford it	
• He could say man I don't know but I will check	
• Do not buy because you are in a hurry just buy because its price is good and it is something to do work for you, so if you buy because you are in a hurry and even driven by the strength of your pocket and if you think you are right you will pay double for just one item because of your stupidity at work	Hasting into buying could lead to a wrong direction of the company
• It is like that my brother, these salespeople are given two prices, it will only depend on how you communicate with that salesperson and then	Good communication yields good deals

it is where an option can be made and if he is good then you offer him this but if you both do not get along you tell him to stay where he is or the deal is off, that is how it is	Pride sometimes kills
• These things you can't buy them according to you, you will really suffer if you buy according to your strength	Getting out of debts should be prioritised
• On top of all things sir my last point is that you have make sure what you have you are able to pay or is paid in full and you are fine and not have things through which you had borrowed someone's money.	
• If someone lent you money he has the right to follow the use of his money	Creditors have control over your spending of their money
• He promised me that he is going to plant so go out and check if he is still doing that	
• Or in that the co-operative drives you to go to Landbank and if he sells the produce money must first come into our account	
• You see, they keep watch on you and if you keep the money in your pocket, they say that man is going to be wrong we thus need to monitor him and observe how he works each and every month	Communicating well pays off
• You see my brother that is how they drive you	
• That is how they push you	
• They do trust a person you see	
• You see my brother, if they trust you they work very well with you but that does not come cheap	Paying off debts is key
• You have to sweat for you to be considered trustworthy to them, if they find you just working without being trustworthy you already had hanged yourself	Creditors can ruin your life
• No, trustworthy is you as a person but what counts is what you do as they check that it appears there are things he did	They follow the whereabouts of their money Creditors need their money back
• It is fine which means he is still on our purpose	
• You agree with them but if they find that when money owners are looking for you, you are not there and thus they ask when you do actually work	Creditors keep track of the untrustworthy debtors
• He is not at work so when does he work this man, they will watch and watch you and even ask these people when you do arrive at work as well as when you clock off	
• They are trying to search and establish when you come to work and so you will find them awaiting you at the gate	Your freedom to spend their money is limited
• They are checking you as to how you work and they thus conclude that the way you work you are not after your work and that his way of working shows if he is a working person or someone who needs to be monitored you see	Regaining creditor's trust would drain you
• That thing my brother you work for it and if you cannot be trustworthy on such things your work you should know that it has overcome you	It is fine as long as you toe the line
• You see this truck I bought it in 1995 around those years	
• My aim to buy this truck was mainly to do my work not necessarily to use for transport purposes, no because I learned that not many people are able to make money with trucks	As a creditor you are under surveillance
• It is one of the jobs that instead of making you money it costs you	Even be monitored by your workers
• For a truck my brother to always be on the road year in year out, it costs you R12000 R15000	
• For licence renewal only	You will be caught at your gate
• Licence renewal only. Now if you do not use it well though my aim is not to make money with it, I know dangerous items there are tyres	Your work methods will also be questioned
• Diesel, the manner of using it	
• All those things if they are misused just one truck tyre	
• Is about R3000 now if you have to fit the six and they should be right, if you use it wrongly	Trust is earned
• These things appear simple to human being but when you approach a man with that thing, some you will find that they have truck driving only at night	Having focus works
• He cannot take it to the test station	
• He cannot take it to the test station, it needs money	Transport as a business costs as few succeed
• When you check these fuel trucks there is no truck whose licence fee is less than R20000, I know I worked there, they are around R20000, R30000, R50000 you see and it just that disc	Even keeping it on the road is costly

• It is not easy sir it requires dedication just as everything before it succeeds you have to be dedicated to it • You do not just say it will give you money, so many people walking outside say farming has money without seeing • What they do not see and speak about is the expenditure • They do not know the expenditures, someone drives a tractor which cannot pull the plough from beginning to the end of the field • You should have a right tool to do work, an engine for this tractor I bought it last year and inserted it then, it cost me R40000 to overhaul it • You hear, so if you find yourself having given it to someone who does not drive it with care, it might run out of water • Or diesel or might run out of oil • Dip stick if not inserted well oil slips to the ground and he might not notice that, he may not notice that until the tractor's engine has stopped running and when you check the dip stick it does not have oil, all those things would have killed you my brother, for such things • The right person to use it must not be any person who says I used to drive it at so and so 's place • But you were driving a tractor at so and so and what were you doing? • Not to drive it you should know how to use it, this is a second stage where you should show you are able to use it, you see • And then you can ask him what were you doing with it? • I used to plough, plant and use disc you see such things if he was able to use a disc you monitor his usage of the disc, if he has just hooked a disc to the tractor, is he able to set right, does the tractor pull easily or is the disc swaying it? • If the tractor is here and if the disc is not properly set it could sway the tractor, so the thing he says he knows can be something you can encourage him or advise him, some have problems as they cannot be advised my brother • Cannot be advised even if a tool belongs to him and you will find that he does not have an understanding • The poor man could even be trying to scorn you but not having understanding of what he does. • So what mainly causes this is hunger, hunger causes many problems my brother like when you check we black people have many doctors • And when you listen to them they know similar diseases but when you ask them to show you a person they cured • Yes sir, I caused a dent on my brother's car as I had not properly pulled the handbrake so it moved and hit with a door • I found three people claiming to know how to panel-beat car doors • The first two wanted money from me but did not in any way help me, the third one said you know sir this door needs some time but he took a piece of a rock and balanced with it as the door closed, so because the door is no longer revolving on its path, he made it so easy by using the rock to fix the door. So the thing is many things are talked about by many people but the issue is ability • That man never even took five minutes to fix that but he did the right thing, others are carrying bags claiming to be traditional doctors at Setsing • And many medicines to help heal people but our people continue falling ill • Yes sir, so that makes you to challenge their knowledge • You wonder as to why can't this man see so many who are ill • What drives this sir is hunger as to what can one put on the table • As I am standing there it is not the issue of coming here to make money • I told you that I worked at a Shell Company it is a fuel company and I worked for 22 years there • And by then these were companies only working with whites you see • So to many I been asking as to how do I reach out to such things • Many would say man this is a job like any other job • But it is not easy to find yourself having expertise there, no • That thing is going to cost you the money you do not have • So some would say never be determined to live by debt	Truck parts as well are costly Thus many trucks are not roadworthy Roadworthiness test is costly as well Success is preceded by dedication Any profession requires being hands-on to realise success Agriculture involves huge expenditure Having corresponding machines is key Farming is a capital intensive enterprise Caution be exercised to operate them Caution be exercised to operate them Screening workers is key Knowing what the work seeker's duty was with the previous employer is important Testing for work performance also important Monitoring employees' work is key Farmer's pride sometimes is to blame for their failure Some can't even realise how shameful it is to talk before you act Talking is cheap among us Doing is not easy Receiving bulk applications Screening suitable ones Choosing the best through work performance Many are capable

• Do make loans but it should not be your way of life • Government now has made it easy for people to make loans • That is why so many have fallen, every week every month people's cars are repossessed you see my brother, our people are burdened by problems truly • You find someone driving a lively car and go and pour in fuel at the garage for R20 but when you listen to him he would say I am driving from Qwaqwa to Bethlehem • You see that thing, I think now with R20 a litre is about R16 or so • You see my brother I don't know this thing how government but it is the question of each person pulling themselves out of that danger and by then you would have had wounds • You got in there so for you to come out you should have wounds • I also liked to talk about this so you know that as a people we work but we live by difficulties • I as a person also have difficulties but those are under my control you see • When problems are above you such that you cannot lift your head then you live badly • If I desire a thing I can go to KFC and buy it but then not everybody is capable of getting there • A person just desires, so many of us when we desire something nice is when you go to funerals or at feasts because they no longer afford that • So many challenges in life, you should be able to put your happiness in control • If you wish for something try by all means to achieve it • Happiness is something that keeps you alive but if you no longer have it what would you be living for • It is tough sir, you see these people I work with I do have time to buy them KFC which is desired by many people, all of them and I say to them man take and enjoy this with your kids • Yes, everything I eat I buy for them as well • It is not every time but I try by all means that what I like they like it too, they cannot afford it • No, as they are whatever we produce here they do have a bag of it and take it home, as to what they do about it is none of my business, some you would find that they sell much of it whereas some you would find that it is consumed within the family, so that it their decision what I was trying to do is that when people eat, they as well may have something to eat too, this is a challenge • No, some when they have something to share they want to sell such information • I do not sell my knowledge, I say something which when there are questions about it I would be able to respond for myself, not like some people when they are asked about the same thing they come up with a different story altogether • this issue of working for tips, look at children • You cannot always lie to them, if you have horses and they are able to ride them and those children whatever is right about horses and you taught them that • They will stick to that but if you tell them different stories you invite questions that you would be unable to answer from those children, so when you speak something it should be something a person should know, don't just speak or say you are a child you should not know this • You will get difficult questions and you should know what times we are living in now and what the laws of this country say, even the things they do are related to technology that you don't even know • He is going to defeat you with questions that you cannot answer and you will say hey, stop asking me such questions go away from here, it gets there my brother • No I am always available, whenever I have time I will do, so we can develop ourselves as I do have my own weaknesses too, but sir I try to do things that have life in them	Knowing is key Having nothing belittles you Knowing where you come from is important Doing lifestyle audit is important Living according to affordability is key Living standards are costly Trying to uplift workers is my responsibility Problems should not be out of control Some of our goals are achieved in the long term Controlling emotions is of paramount importance Being always happy reduces life stress Carrying workers' burden is every employer's responsibility Sharing with workers is humanity Giving workers some goodies whenever possible is important Sharing in the produce as well Not dictating as to what they do with their rations is key Information-sharing is not for sale Sticking to one's opinion shows firmness Lying lands someone into trouble Sharing information as is builds another person New generation challenges status quo Old ones were accepting things without questioning New ones ask tough questions Willing to develop black communities

• first ploughing or before that they need to take soil sample take it to the testers to determine what it needs and what it does not	Taking soil samples for tests is priority
• Because if you just plant without doing that you will harvest little or nothing maybe as a result of soil acidity	Helping to determine soil acidity
• need to get lime because it is a key to a good harvest, if you had put in lime in your good soil you get good harvest	Putting in lime in the soil improves harvest
• will advise you on the amount of fertiliser per hectare • will tell you how many bags of seed	Testing also helps to determine amount of fertiliser and bags of seed to use
• that here you use your disc, from there you plough, even there are sprays and insecticides you should show them that on this you pour in this amount and there that amount, the quantity of your water should be so much per hectare	Being able to use farming tools and chemicals and amount of water gives good harvest
• If you read from books you will forget it, he has to be in a job and be determined	Being determined and hands-on leads to great harvest
• another benefit for the youngsters is that they have read so they cannot forget this easily, they will even capture their stuff in computers	Using technology to aid youngsters understand farming
• The method to acquire such skills, if he loves farming and having ability to get land, I think if he loves farming and having ability to get land	Loving land and acquiring it is important
• Where he got land he may look for his neighbours as they may not be the same, others would love crops while others love livestock	Approaching neighbours and determining their passion into farming
• I think if he may approach them because asking is another form of acquiring skill	Asking questions is another skill development
• Yes, asking is important that here this thing I do not know, but will you be able to help me?	Asking shapes one's understanding
• If the person concerned has character, he will be able to explain and help where necessary, where he does not have implements he will say let me pay you and you do that for me	Trainee with money could be bailed out using assistance from others
• Starting small will ultimately become big	Starting small helps
• No, it's training. The method is you must train your grain farmer	
• Yea, yea, them, whatever, they are so many	Training in various forms can help
• Agricultural academies, universities, all institutions that are prepared to train you, you must go there	Training from various institutions helps
• That is a challenge	
• We must try to, they are literate, there are no illiterate, even if they are illiterate but they have the hands,	Using own hands is important
• they have wisdom, they have wisdom, not knowledge, not the intellectual, they have the wisdom	Knowing from doing is better than literacy levels
• They are born with, they know they must plant	It is innate characteristic
• Take Transkei, there are humans that are planting there, in the rural areas there are humans staying there, that is the wisdom, it is not written somewhere, they are not reading the books, it from somewhere.	Having hands to use is a wisdom per se
• They are still very traditional	
• You see a tractor there, they say it's a miracle	Old knowledge can be improved through exposure to some new phenomena
• To plant with a tractor, they say it's a miracle, they are using donkeys and horses	
• While in Free Sate you hardly see a donkey pulling a plough, not in the Free State	
• Institutions, training, training, training, the best thing. Why training, good methods of planting give you high yields on a small scale	Training in institutions helps improve work methods better
• If you don't train people, they think that in order to yield more, you must have a larger space, no, no, no	Giving more land without training does not increase the yield
• Profitability starts with a smaller scale. If your hectare is giving you 5 ton	Starting small helps
• Then that is good for you, but if a hectare gives you zero comma one or comma five, then you are wasting land	Having no yield on small land is wasting it

• I think that you guys at universities should have all the courses available. I think so • That they must be… I don't know how quickly you update your stuff because things are changing.	Updating courses
• So to answer that question: do a course that can give you practical help as well because I feel your universities (I'm not mocking universities, my kids all went to university), but I saw it afterwards, when they are going into the working environment, they haven't seen the thing they learned about, especially farming because it's so hands-on.	Doing course that give practical help
• I would suggest to get a solid young man, competent to start, he needs a lot of practical experience in this course that he is doing and physically see the things because it's all about seeing things.	Seeking practical experience
• You come and you have to work your fields every day because you need to see the insects in there, and the plants that are taking strain, or there's a lot of grass, if I never came here the grass would be tall. • We spray now for worms. • If you didn't come here and look and see them, you wouldn't.	Working a lot
• It's very hands-on. • The course should be structured to be very hands-on and practical because it's a practical thing.	Being hands-on
• That's how you start as a person and how would you amour him to become a man who's gonna produce the fruit for us one day because that's the next generation.	Having patience
• So yeah, it's very lucrative if you've got patience. If you farm well, you make it lucrative yourself.	Rewarding job
• If you look after your soil, you plant good seed, you keep it clean, if you get rains with the help of God, you get rain and you get good crop, it's lucrative, you get rewarded, that's what I'm saying.	Getting rain from God
• I think anything is like that. Like I said there's chains, one of them can't be broken, otherwise the whole thing falls off. • You have to be hands-on, you have to be here, and you have to ensure that your stuff is proper then you'll get rewarded for that. • That's on that part.	
• To start this business, to kick it off, that's the most negative thing I think that puts off a lot of potential good farmers because it's costly.	Costing business to kick off
• The input cost is extremely high and it's very few people that can do it. • Very few banks is gonna help you. • You can have everything, but if you haven't got someone who can finance you and help you to get your first step, it's basically impossible.	Having high input cost
• The input cost is so much, like sugar beans to give you an example, it is R14 000/hectare, so, you put 100 hectares it's R1, 4m. • That's just your cost, it's your seed, it's your poison that… it's your fertilisers, and then your diesel for your tractors to work. I'm not even talking about your equipment. • Yeah, that's the cost of getting it onto the ground. So, you see where I'm going with this?	
• So, unfortunately this game is: a small farmer makes no money. • This is a game of volumes. • It's like selling chappies: You sell one chappies you're not gonna get anything… so that's the same concept.	Disadvantaging small farmers
• So, you need to do it in volume. And the bigger you are, the more expensive it is, the more tools you need, • so, it becomes very difficult, that's why generation of farmers from 120 years ago they started with cows, ploughing, then it was the next generation took it a little bit further, then the next generation took it a little bit further.	Using costly tools, fertiliser, seed
• You'll people, like they call them the mega farmers now, three/four generations started it already.	Taking generations to build

• They didn't become mega farmers now, it's a long term thing, it stays in the family and it goes through and you pass on that skills as well. • I don't know, we're gonna have to look at it. • Some come up with some form. If they got lots of good initiatives already running, they're doing like a profit-share thing, or they rent piece of ground and they plant together. • That's what we're doing with our workers, we've got that going as well, we say pick a field and they can pick a field and say that's yours, we plant for you, wheat seed everything. • And so when we do harvest, they get a share between them. So, that's a way of starting something, but it's also still small but we're doing it for our staff. • That's more as a bonus for them because they work very hard. • Their hours are long in planting time. So that's from our side but they must look after it. • There's ways of doing it I'm sure, but it's not gonna be in one year. I'm talking about that same generation, they come now that's gonna be the first generation, the second generation is gonna take it further, the third generation will take it even further. • Because technology improves so that's why I say you must go with the technology. • So, the first generation, they started with cows ploughing with cows, the second generation already got tractor. • So, if you look at this and technology, you have to keep up with it, and I think in future, it will be just using computerised. • I can see your cars is computerised, so tractor is computerised, you get the sprayers now have monitors, they spray your crops, and hands free GPS tractors. • I don't know where the future is gonna go but you have to stay in touch with it. • If you stay behind	Retaining workers Involving workers in profit-sharing indirectly Working hard by staff Going with technology Using computerised equipment
• You need to know exactly because it is no longer like when I used to set feet to determine how many seeds in my measuring of maize • You should know from here to the gate over there how many of the seed should be planted, so all those things require schooling • Someone once made a fool of me where I even regretted not being educated, I knew that a bag of maize seed covers about 2 ha • So this man asks me how many population am I going to plant, I then thought this now requires some school and he takes me for no know-how • Now he takes me to the population • I then said it needs education, today's farming needs education • You need to know even the insecticides, truly whites did show us • When should you spray using which insecticide, even when winter gets in you should know what changes to make, as all that is related to education, • Mainly these chemicals to spray, especially beans you can be scared when these whites tell you about chemicals used, I wonder, let me show you some paper here • I just want to show you that these things now need educated people, you see here they are even not enough • You see all these are chemicals you are supposed to know how you should mix • You see that thing, you must know how much should you pour in • You see this two-time spray, all those things what I mean is that they must be known by someone who has been schooled, you see? • All those insecticides you must know how to use them, there are so many of these things that exceed what you see here, especially in beans • Yes, these are things that you should know at least what you are going to do • So when you check, it really needs one to go to school	Using old styles Schooling important Using big terminology Farming needs education Spraying with chemicals Knowing how to mix chemicals

• One really needs to go to school, and when he comes back to these dealing in chemicals, training there is necessary • Where they would show you how a thing operates because if are not trained, chances are that you will burn maize or beans when spraying • Right there is that easy way out from the one you buy chemicals to calculate for you that when your spray is like 800 litres you should pour in so much of this, all those things you should note down but know them so that when he is no longer there, you are able to mix on your own • Yes, but the truth is this thing needs education	Training needed
• You know to persevere farming a person must walk with someone who farms • You see when you walk next to him • You will learn many things and you will develop love for this • But learning only what you do not love, aikhona, wait a bit • Aikhona! I used to see young people walking about here on farms wanting to work here • That was a good thing coming like this • No, no, you waste your time. • We milked, we did so many things about farming and we were doing them practically unaware that we do them so • After school, you would find us on tractors • We knew all those things, digging up potatoes and all these things, you cannot cheat me, no I refuse • You cannot because you know our children • To show him how a farm operates you need to encourage and show him the importance of a thing • That the importance is to do this and that, it because I see white people's children are so determined • They take farming seriously • Really we black people, when you check that now that these children are not going to school • Do you know if you take them and go and work with them there? • They will love it, I am telling you they will love it, they will love it really • Yes, it because as we were growing up the farmer whom we were staying with • When we are back from school he would put us at the back of his van • And would just leave there in the fields and by then tractors are ploughing going up and down • And we are so eager to jump on top of them • You would find this wheat combine here, it would make you mad • I would test any of them be it of wheat, maize, beans, sunflower, soya, no man, no • That is what I loved about farming, that way, we would spend much of our time in the fields • All these chaps would now bother you by asking, when are we going there? • When are we going? • Exactly, they even enjoy milking cows and they kick them there • You put in love like that, that how we loved farming • You see these people of GrainSA? • Those are good people, they show their stuff on a television • Those guys are good, they show you that this thing is done this way and that other one that way, never take that it is your own garden and you want to plant cabbage, no wait • They will empower you, they will say, man, we are paying you a visit • They will help you those guys and you will succeed • You will succeed, their training is free of charge	Walking with a farmer is a lesson Developing interest for farming Seeing young people wanting to work here Doing practically Milking cows Driving tractors Digging potatoes Showing young people importance of a thing Seeing that white children are determined Loving farming after taking them there Loving to drive combines also Asking many questions Referring to mentors

• They show you that man do this, everything because there are many mixtures • In so many things they will help you that man do this, do that • But our people are a problem • And you just plant those seeds, those only, look now it is May • Others will be harvesting maize in June, many will be harvesting maize • Yes, it is maize • For now, it is soya, from there they go to maize • Soya yes, but it is not like maize • Maize and wheat, hah! It is bad, man	Succeeding at no cost
• They need to go to school but school alone is not enough, there is this thing I do not know what you call it after attending school? • You call it practical in your language • What you were reading in books should now be done practically because this book cannot get in the field • You need to practise what is said, yes, that is right, yes, it now comes to being	Schooling important Doing practical Reading books not enough Practising
• I don't know if I would saying they are the best but what I can say this is the best teacher, you said you look for method, didn't you? • The first one is practice • Practice makes perfect • Mind we look for the best method if you want to be the best farmer • You must practise to be a farmer as far as I am concerned • What does practice mean? If you want to farm with cattle, do cattle farming • There is no other way do cattle farming • And then training can better advance a person's understanding • In order to be one of the best producers • Training, I want to be honest to achieve the level you asked me when starting this interview as how can we encourage or motivate young people to be farmers? • The time I have worked here in government, I learned only those two things that nothing will liberate our people in agriculture without education • And training followed by practice, I advocate only three things, train, practice and then get someone you can call a coach or a role model • That we will need if we want to build a developed society because in my Sesotho we say if you are riding a horse alone you could say it runs fast as it goes past the grass • So you need to get a role model in order for us to make a continuous development of our practices, we need to get a person whom you look up to • And say you want to be like him so you can advance, as far as I am concerned the best way of making farmers is practice • And then training will increase understanding, training will not make people farmers but it will expand their understanding of some of the things they see or do • So that when they perform, they do so with a better understanding	Practising is the best teacher Training Liberating people through training Educating formally not so important Having role model Having someone to look up to Training increases understanding

• Learning through practice • make time for refresher courses as technology changes swiftly	Learning through practice Doing refresher course
• It is practical • Yes practical, there are those who come here from schools • Having done some courses and find that you allow them, as for me my brother • When someone asks to be helped with something many people do refuse them stating that no that person would waste my time, as for me I take it that tomorrow that will be your child, your own relative, your wife • Look now you have long finished schooling but you are back to do research about something • Like now nothing is wasted, you are just asking • This thing, in 2008 a young man came here from Pretoria to do research with livestock, it was 2005 because I was still having a dairy then • I said to him the cattle are already out in the veld, and he said, here are the dairy cows • We took two calves and weighed them with a tape and said this one weighs so much and I did not know that because I knew only to put them on a scale at the auction • He showed and said I could also get that tape at certain stores and left his tape with me • In the afternoon, as we were milking, he would check how the big cows weighed • Now you know that at the auction, your cow weighs like 400 or 500 kg, you get that only once you are there • So this man says to me even if you miss it will be by 1 or 5 kg not that bad but it is closer to the actual figure • You hear that man came here seeking help but he helped me instead • When he sits down and identify your challenges, I said to him I don't have a kraal • I don't have a trekgang, yes I see that • The neck clamp is fine and he is just jotting down his own stuff • After that he left and asked me if I could allow him each and every month to come • I said to him only if you notify me telephonically there won't be a problem I will tell you when to come • Indeed he came for about a year, every two months sometimes he would say he would come but not manage • And later he would tell exactly when to come and would be jotting down his things and I would not know what he was doing • Sometimes he would say he attends a meeting with so many people but others would refuse him entry claiming that he was going to waste their time • As he was helping, I eventually got a call from the department that ARC made an application for you for erecting a kraal and that application has been approved already • When I follow that, I found that it was made by that young man who came here as a student • After doing that, he had bad terms with his boss and left and got the job elsewhere, he does come here and pays me a visit sometimes though it has been some time since we parted ways and I no longer have his contacts • But we got a kraal because of that man • Yes, he came here asking and I allowed him	Doing practical Helping others Researching about livestock by visitor Taking measures using advanced knowledge Helping others is helping yourself Supporting me for free

• He helped me with a tape, hence whoever comes here to do practical lesson I don't have a problem with that as long as he does not need accommodation, need food • When he comes with his own stuff I don't have a problem, when he comes to the field to do his work, I don't have a problem with him • That is why I say, I can't remember your question • Yes practical, it is the first one • If you have a child and leave him or her at home, he or she knows nothing • I say a child or children, let me put it this way I actually had been coming here on the farm as a child I had been rejoicing at driving tractors, not knowing that one day I would be responsible • And I saw this as something so simple that even planting is not a problem but unaware of the costs involved, unaware of how long you wait • Unaware of the challenges you come across with but in the end, I found myself among young people whose parents had passed on • It is just a few, others had sold • Even their fathers some had sold under certain circumstances • In others, a child had sold the farm and within a year, the money is finished • That child would be employed somewhere in Gauteng • When he comes here he finds that he was getting income every month-end, so he cannot stand it • He sells and goes back where he was originally • In fact the main challenge here is cash flow • Cash flow, you don't need much money but if you have money to cover daily needs as putting bread on the table and live and take children to school • You can stand that but if there is no income, then problems creep in • If there is cash flow, an income generated by a tuckshop, for example, or here on the farm you have chicken eggs or pigs where you know here I wait for about a month and sell or a feedlot • Where you know that after about two weeks I sell and close a gap and pay my staff, then I don't see any problem, I really see no problem	Approving building of kraal Giving me practical lesson Exposing children to farming Coming here after school to drive tractors Learning some farm work Taking over the reins now Involving those not loving farming troubles Affording basic duties