Critical Success Factors for Medium- and Large-scale Farmers in Lesotho

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DECLARATION

"I declare that the Field Study hereby submitted for the Magister in Business Administration at the UFS Business School, University of the Free State, is my independent work, and that I have not previously submitted this work, either as a whole or in part, for a qualification at another university or at another faculty at this university.

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Thabang Matsoetlane

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ABSTRACT

Agriculture contributed 40% to Lesotho's Gross Domestic Product in 1995 and then declined to contribute only 1.8% to 2018s Gross Domestic Product. Agriculture is the backbone of the rural community of which 70% derives their income from it. There, therefore, is a need to revive and improve commercial farming in Lesotho. The objective of this study was to identify critical success factors for medium to large-scale farmers in Lesotho.

The study was conducted using quantitative research and data were collected using questionnaires that were personally administered to the farmers. A sample of 100 was selected from the total population. The study found that critical success factors include capital, technology, market access, diversification, innovation, financial performance, management, marketing, and government policies and regulations. The study also found that skills such as networking, self-management, and conceptual thinking are critical for farmers. Most farmers comprehend that these factors are critical but still do not realise the importance of diversification and technology.

It is recommended that farmers must consider the combination of factors that creates success for their operation or benchmark on a combination that works for other farmers with similar operations. It is also recommended that farmers diversify into farm tourism to increase sources of income and improve the rural economy. They are also encouraged to specialise in a marketable product and find a niche market for such a product. Farmers could also consider adding value to products by processing their products into different kinds of end-products. They should then package and brand those products to give them an identity and become more competitive. It is also recommended that farmers should unite nationwide to develop an application that will give them a platform to sell their products country-wide. The application would give a platform to both urban and rural farmers.

Keywords: Critical success factors, skills, farmers, agriculture, production, Lesotho

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CHAPTER 1: INTRODUCTION

1.1 Introduction

Land is critical in the poorest countries, as it is a source of livelihood and sustainability for households (World Bank 2006:7). The World Bank report further clarified that agriculture contributes 70% to the natural wealth in the low-income countries and 18% to the entire wealth. Governments, therefore, ensure growth and assist the sector in various ways to ensure prosperity. The agricultural sector gets the most intervention and interest from government, more than any other economic sector (Gardner 1990, cited in Akinlade, Balogun & Obisesan 2016:24).

Because of the need for sustainability, people are practising farming for subsistence purposes and commercial purposes. Commercial farming is deemed critical, as it improves lives and the country as a whole. Most governments, therefore, encourage the commercialisation of agricultural products. Makhura, Goode and Coetzee (1998:430) defined commercialisation of agricultural products as selling products in raw or value-added (processed, stored) products. Makhura et al. further defined commercial farming as any activity that is market-related and associated with household agricultural production.

1.2 Background

Lesotho is a small country that is surrounded and landlocked by South Africa. Its total land area is estimated at 30 355km^2 with an altitude between 1 400 and 3 480 metres above sea level (FAO 2017:2). The country is divided into four agro-ecology zones namely, lowlands, highlands, foothills, and Senqu valley. The country is mountainous with over two-thirds of it covered by mountains (Ministry of Agriculture 1995:5). The Ministry of Agriculture further states that arable land is around 400 000 hectares, but the planted area is only 330 000 hectares, but it keeps declining due to soil erosion.

Lesotho's farms consist of fields with average sizes of 3-4 hectares (Ministry of Agriculture 1995:7). Farmers in Lesotho are mostly practising subsistence farming, and commercial farming is not improving. Subsistence farmers constitute

approximately 90%, producing mainly for consumption, little or no surplus to sell to the market, and only 10% of farmers are commercial (Government of Lesotho 2005:8). Lesotho still has a long way to go to overcome the tradition of non-commercial agricultural production farming (World Bank 2010).

Farming is not undertaken as a business in Lesotho. Lesotho has a few large-scale and medium-scale farmers, and the Bureau of Statistics together with the Ministry of Agriculture do not have data compiled on the exact number of such farmers. Because of the problem of few progressing farmers, Lesotho is inclined to import excess needed from neighbouring countries, it, therefore, imports 60% to 70% of its cereal to meet its national demand (FAO 2017:6). To encourage such imports, the government does not impose any restrictions on food imports, and it does not tax them (Mukeer & Dradri 2006:25). This makes competition high for local farmers because they are not as well established as the neighbouring country's farmers. The main crops grown in Lesotho include maize, sorghum, wheat, peas, beans, and potatoes. Fruit and vegetables are mostly grown at a small- to medium-scale and there are few large-scale farmers producing vegetables, mostly using rented land (FAO 2005:6).

According to the Ministry of Agriculture, farming contributed 40% of Lesotho's Gross Domestic Production (GDP) in 1995. It declined to an average of 19-20% of the GDP ever since (Ministry of Agriculture 1995:8). The Central Bank of Lesotho's Economic Outlook further projects agriculture to contribute only 1.8% to 2018s GDP (Central Bank of Lesotho 2016:5). Agriculture is the backbone of the rural economy, but the sector is now faced with poor performance and output has not kept pace with the growing population (FAO 2017:4). As stated earlier, agriculture is the livelihood of the poor and Lesotho is no exception. Poverty is high in the rural areas and 70% of rural households derive their livelihood from agriculture to survive (Daemane & Daemane 2014:64). The sector accounts for 85% of the total employment, women constituting 40% of the labour force (Government of Lesotho 2005:7). The sector's poor performance, therefore, negatively affects rural people who are already struggling to survive.

The government has initiatives to try and revive and grow the sector. They also promote commercial farming by assisting large-scale farmers and medium-scale

farmers to increase productivity and the quality of their production. To meet the farmers half-way, the government subsidised agricultural necessities and then partnered with the farmers by block farming to increase productivity. This is part of many of the government's initiatives after realising that productive land is owned by people who do not have the capacity nor interest to put it to good use (FAO 2017:8).

In the fiscal year 2017/2018, the government budgeted about R500 Million to continue its subsidy in agricultural inputs, mechanical operations, greenhouses, shade nets, rehabilitation irrigation schemes, studies on increasing commercial beef production, and many more (Minister of Finance 2017:9). Lesotho's 2005 investment outline of the Comprehensive Africa Agriculture Development Programme (CAADP) has pillar 1 as commercial food production, where it aims at supporting farmers to achieve a high production scale (Government of Lesotho 2005:8). The CAADP priorities also involve marketing, trade and agribusiness, and agricultural finance, which main objectives are to strengthen the farmers' markets information system, development of entrepreneurship skills, agricultural finance, and rural roads development.

Furthermore, different stakeholders hold regular workshops for farmers to educate them about the correct ways of farming and market opportunities available locally and internationally. The government established the Basotho Enterprises Development Corporation (BEDCO) to grow domestic entrepreneurship. BEDCO holds constant training for farmers and other entrepreneurs to equip them with skills and the necessary knowledge.

Subsistence farmers, especially those with potential, however, do not seem interested in transitioning into commercial. The constraints that prohibit sustainable development in this instance are political, attitude, and financial constraints (Daemane & Daemane 2014:65). In the present state, except for the initiatives done by the government, there are few conducive circumstances for that transition. No proper policies are protecting the farmers, as producers, for instance, big companies, set their prices and disregard those set by the farmers.

Access to the market is a challenge because of poor infrastructure and furthermore, consumers prefer South African imports more than the locally produced commodities.

There are fewer barriers to trade, and South Africa has higher productivity and, therefore, offer bulky and cheaper products (Mochebelele, Mokitimi, Ngqaleni, Storey & Swallow 1992:35). Access to loans is also a challenge. Farmers seldom use the opportunity to apply for access to financial support from local commercial banks, and even when they do, most are regarded as high-risk and, therefore, do not qualify. Inadequate access to financial institutions' funding hinders expansion in Lesotho's agricultural activities, especially in rural areas where the rural population is regarded as high-risk, negatively affecting the national GDP and impeding initiatives to empower subsistence farmers to engage in commercial farming (UNCTAD 2013:26). If the 10% commercial farmers are empowered effectively and start to develop labour, farm input, quality food output, and land markets, it might attract the remaining 90% to pursue production for commercial purposes (World bank 2010).

Lesotho Agricultural College produces more graduates every year. The agriculture department in the National University of Lesotho (NUL) also produces more graduates each year. The government sponsors the graduates and receive priority to further their studies abroad from the government sponsorships facility. They, however, end up contributing to the unemployment statistics and their knowledge does not benefit the country. The government is investing a lot of money in educating graduates in agriculture so that they can build and grow this sector but there are no returns realised as yet.

Lesotho is affected by soil erosion and lack of adequate rain. Climate change is also affecting the world as a whole. Lesotho's most critical resources are soil and water, but the land is degrading because of soil erosion, which is estimated at 40 million tonnes of top-soil being lost annually (FAO 2017:5). Loss of top-soil affects soil fertility. FAO further explains that draught seems to affect Lesotho and the world in general because of a lack of rainfall and climate change. Climate change is the biggest challenge in Lesotho, and adaptation modalities are unaffordable (Lesotho Review 2018). The other challenge is the country's terrain. Lesotho is a mountainous topology, which makes its ecology fragile with a limited vegetative cover that exposes the soil to erode, and because of this terrain, only 13% of the land is suitable for agricultural production (Mukeer & Dradri 2006:6).

Lesotho also had, for the longest time, land ownership problems. The chiefs were responsible for allocating land to their people, and if the land is unused, they could take the land back. The absence of clarity on land ownership led to no security on land tenure resulting in a lack of economic development and foreign or local investment in agriculture (Pule & Thabane 2004:284). According to the Land Act of 2010, there is also a limitation granted on ownership, leasing or to both, own and lease at the same time, leaving farmers with limited land on which to practice.

1.3 Problem statement

Commercial farming in Lesotho, over the years, had been declining. Large- and medium-scale farming is not growing, and most farms are unsustainable and fail with time. The farmers face many challenges. The challenges are largely due to unclear policies protecting commercial farming, limited access to credit, poor management of farms, lack of competencies and technology necessary, and poor infrastructure. Many farmers, especially, in the rural areas are facing difficulties to access markets and information due to poor transportation and communication infrastructures, and further cannot afford farm implements, intensive labour, and other resources (Wikle 2015:86).

Most of the farmers have not found ways to overcome all the challenges and remain sustainable. Farmers therefore, have to find ways to be sustainable. There are different factors that have been identified to be key determinants of success and survival of farming. It is necessary to identify the key success factors, this knowledge will enable farmers to understand and focus on the implementation of the key factors and adoption of critical skills that can lead them to success.

1.4 Objectives of the study

1.4.1 Primary objective

This study's primary objective is to determine the critical success factors for medium- and large-scale farmers in Lesotho.

1.4.2 Secondary objectives

The secondary objectives are to:

- identify and describe the key success factors;
- determine how medium- and large-scale farmers perceive the importance of each of the key main drivers of success;
- analyse the relationship between the key factors, farmers' characteristics and characteristics of the farm; and
- recommend how farming could be improved in Lesotho.

1.5 Preliminary Literature review

Makhura et al. (1998:446) stated that in the rural areas of South Africa, highly commercialised farmers own more land, demonstrate a lot of managerial capabilities, and have better access to formal markets, credit, and information. According to Mahindarathne (2013:105), entrepreneurial behaviour, market assurance, level of education, market assurance, and the number of produced products influence farming success.

To have farmers that progress in commercial farming, farmers need training in various skills, and there should be upgrading of roads, farming facilities and communication lines (Khayapi & Celliers 2016:9). Yeboah, Owens and Bynum (2011:5) stated the factors influencing success as marketing strategies, diverse mix of enterprises, and speciality crops. All these factors are necessary for every farmer to survive and excel among other farmers. To further understand the importance, as stated by the literature, a further review was done on competencies, innovation, entrepreneurship, and policies. The other critical factors will be discussed in the following chapter.

1.5.1 Farmers' competencies

Phelan and Sharpley (2012) explored entrepreneurial skills and competencies rural farmers needed for business growth by venturing into other income activities such as farm tourism. They focused on Lans et al.'s (2008) competency-based approach, which specifies that realising true potential of entrepreneurial competencies lies in (a)

making the owner aware of their competencies, (b) identifying the importance of competencies that contribute to the success of the business, and (c) providing direction and guidance in developing the competencies and skills necessary. They observed that business and management competencies are vital in entrepreneurship; however, they were concerned that farmers perceived business concept competencies as unimportant. They, furthermore, concluded that entrepreneurship entails more than only management and that farmers must be innovative, risk-taking, and should discover and venture into more opportunities.

Other than business and management competencies observed above, other competencies are also critical to farmers. Lauwere, Malak-Rawlikowska, Stalgienè, Klopčič and Kuipers (2014) measured farmers' competencies and examined the effect of competency levels on their prospects. The competencies and entrepreneurial features measured were networking, openness, analysing and pursuing, locus of control, strategic reflection, passiveness, customer orientation, ambition, financial conservatism, and knowledge of development direction. It was observed that farmers who scored high on competency levels and entrepreneurial features were positive about the prospect of their businesses.

McElwee (2006) further confirmed that a successful farm entrepreneur needs three traits to be successful. The traits are cited by Schiebel (2002) in McElwee as problem-solving, locus of control, and social initiative abilities. McElwee added that according to Kallio and Kola (1999), farmers should have the following traits to be successful:

- Cognitive and professional skills constant development;
- Ability to use cooperation;
- Hard-working farmers who believe in their work;
- Farmers who can follow up on productivity, income, and expenditure;
- Goal-oriented farmers; and
- Farmers who are up to date with relevant information and can use it to their advantage.

Khapayi and Celliers (2016:10) suggested that record-keeping skills, labour management, banking skills, and the ability to adapt to developments and changes

are all necessary and vital skills needed for a successful business in agriculture. They added that farmers must be trained in different production skills to boost production and farm income. They also need training in marketing strategy development to assist them to enter and secure marketing channels. Case and John, in Vukelić & Rodić (2014:806), observed that management capabilities are one of the four factors affecting production growth in addition to traditional factors of soil, capital and labour force.

Moreover, it has been argued whether education influences these competencies and skills among farmers. Phelan (2014:55) argued that farmers with high competencies and who could grow and diversify their farms had higher education qualifications. Education is also vital to develop farmers to make effective decisions, influence market participation, and increase product commercialisation (Simonyan et al. 2010, cited in Akinlade et al. 2016:31). Khayapi and Celliers. (2016:10), however, argued that even though education is critical to grow in commercial farming, it does not mean farmers with low education levels or uneducated farmers cannot succeed in commercial farming. They further stated that most thriving farmers are uneducated or have lower education levels.

Furthermore, several factors affect agriculture, such as drought, erosion, climate change, and new technology. Farmers should equip themselves with skills and competencies to deal with these factors. Changes leading to modern agriculture production make it more difficult for farmers to maintain their competitive advantage. Consequently, farmers need certain management capabilities to help them use resources efficiently and choose optimal production practices to stay ahead (Vukelić & Rodić 2014:811). Phelan (2014:245) suggested that farmers should improve their skills and competencies to diversify and studied different entrepreneurial skills and entrepreneurial competencies identified by the literature as critical for farmers to diversify. The entrepreneurial competencies identified were opportunity competencies, commitment competencies, relationship competencies, strategic competencies, conceptual competencies and organising competencies. He, however, showed that most managerial and personal skills dominate the competencies that were identified in the literature.

Lastly, in commercial farming, some factors interrelate and are all critical for the growth and success of the business and the sector as a whole. If some factors are lacking, there might be some hindering on the farm's growth. Farmers who can grow in commercial farming are mostly limited by unchangeable factors such as land, information, credit, or markets (Makhura et al. 1998:446). Bergevoet (2005:52-55) suggested a conceptual framework that demonstrates farmers' success. External factors to which the farmer adapts, characteristics of the farm, and psychological factors in addition to the farmer's competencies contribute to entrepreneurial success. Figure 1.1 illustrates the conceptual framework.

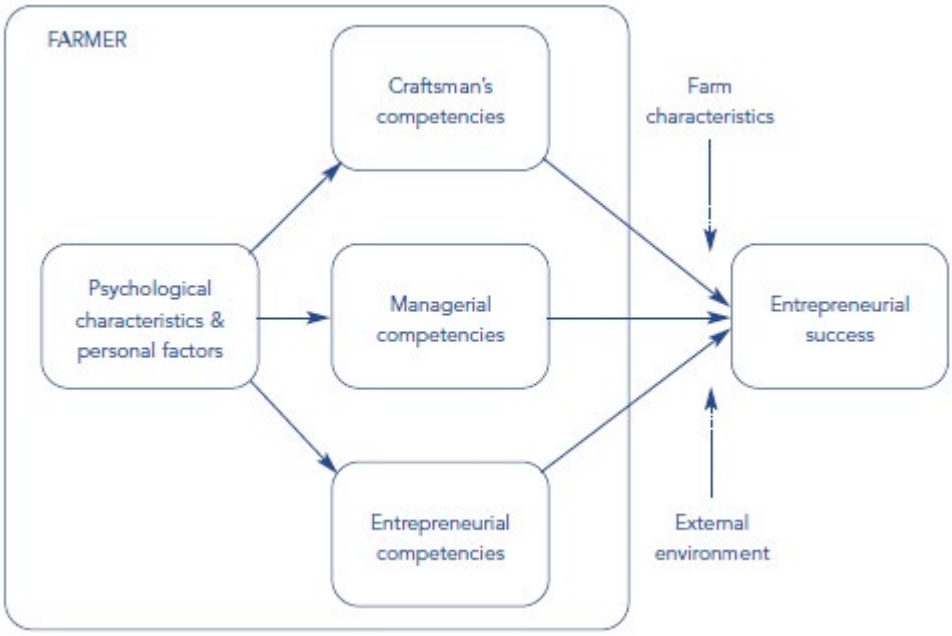

Figure 1.1: The conceptual framework of farmers' psychological characteristics and competencies that affect entrepreneurial success

(Bergevoet 2005:53)

Bergevoet based the study examining the characteristics that are considered as predominant for an entrepreneur such as innovativeness, locus of control, and risk attitude. The competencies studied were only entrepreneurial competencies focusing on strategic competencies, information-seeking competencies, and opportunity competencies, ignoring relationship competencies and organising competencies. The framework further illustrates the specific competencies and characteristics, as

illustrated in Figure 1.2. Bergevoet concluded that entrepreneurs with high competencies have high self-reported entrepreneurial success and further recommended that farmers should improve their competencies if they wish to succeed.

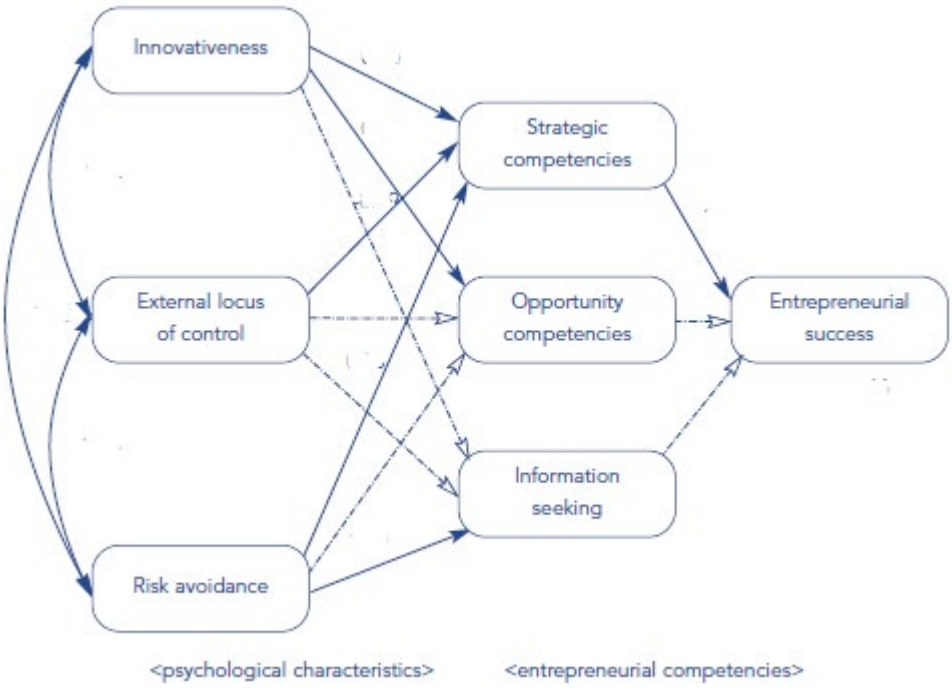

Figure 1.2: Analytical model with path diagram for the analysed model of agricultural entrepreneurship

(Bergevoet 2005:60)

1.5.2 Innovation

The world is experiencing climate change and agricultural production must adapt to the changes. Farmers must learn how to operate while caring for the environment and sustaining consequences arising from climate change. The technology that is being developed aims at increasing yield and to automate manual work (Bear & Holloway 2015:1). Bear and Holloway explained how using the latest technology when it is used right could keep farming successful and they explained that agricultural lives and technology could be conceptualised as co-constructive of one another. Naim, Yaakub and Hamdan (2016:1-4) explored how large-scale farmers using technology were

better off than other farmers with no technology assistance and who still use the traditional ways of farming. They found that applying technology in managing large-scale agriculture promotes efficiency. The study also revealed that integration of traditional ways and technology ways encourage optimisation of land use, suppress weed, encourages natural growth, and increases chances of more income.

Product lifecycles are becoming shorter and shorter because of rapid change. Businesses have now turned into innovations that will expand their businesses using the available resources, namely introducing new products or tapping into a different industry in which they are. This assists them to increase sales and broaden their market. Farmers could use such innovation to diversify into farm tourism. Farm diversification is an effective strategy that promotes a more sustainable and diverse economy and that help in protecting farms' income against market fluctuation (Phelan 2014:5).

Phelan further explained that a farmer is at the centre of agriculture/rural geography, tourism and entrepreneurship and, therefore, they must use that to their advantage. Using synergies existing between rural tourism and farming not only bring success to farmers but also bring rural development in most rural areas (Huylenbroeck et al. 2006:16). Huylenbroeck et al. researched the success of farms by diversifying into farm accommodation. It was found that farms with capable labour and an establishment favouring accommodation do better than those that must inject more capital into such an investment.

1.5.3 Farming as entrepreneurship

Many farms are owned by traditional farmers who enjoy farming and are willing to treat it as a hobby more than a business, supplementing the farm's income with off-farm employment (Shawn 2000:4). Shawn explained that a farm is a small- to medium-sized business and should be treated as such. His first findings are that it does not only involve crop growing and animal rearing to own a farm, but marketing, finance and human resource are also critical. The second finding is that farmers are product-oriented and expect sales to be done by someone else; hence, why they do not grow. They, therefore, should learn to advertise intensively and build their brand. The last

finding was that farmers should establish if their farm must be a niche operation or they must differentiate their product by studying the market they have and or target. Treating farming as a business, therefore, would push farmers to be competitive in their business and strive to always succeed.

Almeida and Zylbersztajn (2017) interviewed coffee experts and coffee farmers to establish key success factors for coffee farmers. They established that the main challenges were the increasing complexity in farming, the succession of the farms, climate change, mechanisms, consumer behaviour, and risk management. They concluded that farms should focus on relevant strategies that will get loyalty from customers, increase their product's quality, increase barriers to entry, practice environmentally-friendly farming, and should design marketing plans based on habits and desires of the consumers. Farmers, therefore, should run their farms as companies if they want to succeed.

1.5.4 Policy setting and market channels or platforms

To operate in a fair environment, there must be policies governing that sector. Gray (2000:33) explained policies that re-invented agriculture within rural areas. The common agricultural policy promoted a single market with no internal tariffs to allow capital, labour, and agricultural products to circulate freely at a comparable cost. It also promoted the sharing of financial burdens and benefits within the community instead of individualism. Successful small-scale farmers in most African countries expand into thriving medium-scale farming whose production has an increasing share of the marketed crop surplus (Jayne et al. 2016:206). These small-scale farmers transiting into successful medium-scale farmers are influenced by the government's emphasis on cultural programmes and, most importantly, land policies favourable to commercialised farming. Looking at neighbouring South Africa, its agricultural sector grew massively after the trade and marketing policy reform that could succeed in transforming farmers to increase productivity and international competitiveness (Greyling, Vink & Mbaya 2013:1).

The study will focus on the literature around farmers' competencies and finding necessary competencies needed, critical farm innovations, examine the level of

farmers' entrepreneurship, relevant policies, and other critical factors. The study will only focus on the factors relevant to Lesotho's situation and would best help large-scale and medium-scale farmers in Lesotho to succeed.

1.6 Research Methodology

1.6.1 Research design

The research design is a framework for data collection, measurement, and analysis using research questions (Sekaran & Bougie 2013:95). An appropriate design, therefore, is necessary to get accurate results. The research strategy used in this study was survey research. Sekaran and Bougie (2013) clarified that survey research allows the researcher to collect data about people or events using types of research questions using questionnaires or doing observations.

The study was descriptive. This allowed the researcher to collect data that will describe the characteristics of the farmers, help with associating variables, and help to create ideas for further research (Sekaran & Bougie 2013:97). The research was done using a quantitative research design to critically evaluate key success factors. Cooper and Schindler (2014:144) explained that quantitative research's objective is to obtain an in-depth understanding and uncover the reality of the matter. The quantitative researcher can identify features that tell the best story about the data collected and match patterns of data to draw conclusions about the research questions (Easterby-Smith, Thorpe & Jackson 2012:245).

1.6.2 Data collection

Data collection was questionnaires personally administered when shared with farmers sampled. The questionnaires were personally administered to have an effective follow-up with the farmers sampled, noting that most rural farmers do not have constant access to the internet. The researcher visited the sampled farmers, notified them of the study, obtained their permission to distribute questionnaires and collected data

provided by the farmers. Sekaran et al. (2013:148) described the advantages of personally-administered questionnaires as follows:

- a guaranteed high response rate;
- it is cheaper when participants are administered in groups;
- good relationships are forged with the participants and they can be motivated to participate and questions arising immediately clarified.

1.6.3 Sampling Design

The total population comprised of all farmers in Lesotho, but the target of the study was large-scale and medium-scale farmers practising commercial farming and those practising subsistence and commercial jointly. Lesotho's bureau of statistics only has an incomplete record of the number of farmers. It, therefore, does not have a record of the total large- and medium-scale farmers.

Even though there are no published data of the total population, the ministry of agriculture and bureau of statistics in all districts have samples of farmers they use while researching for their work purposes. The researcher, therefore, worked with the ministries and farmers' associations to use its farmers' lists plus additional farmers identified by the researcher. A sample of 100 was selected. The sample spread over four districts and not the entire ten districts because of limited time and coordination but it was trusted that four out of ten districts would assist the researcher to produce reliable results. A non-probability sampling was used to select the sample, and because specific characteristics were critical in the sample collected, the purposive sampling type was used.

1.6.4 Ethical considerations

The following ethical considerations were applied:

- Rights to privacy

Privacy guarantee is vital for preserving the research's validity and, most importantly, to also protect the participants (Cooper et al. 2014:34). While conducting this study, the participants were assured that their details would be kept confidential, and their

participation and feedback would remain confidential. Any information revealed would be done so with their consent.

- Informed consent

The participants were briefed about the research purpose, and their consent was requested before being interviewed. Interviewed members were not forced to participate in the study unwillingly.

1.7 Demarcation of field study

The study focused on critical success factors for farmers and it studied agricultural management, specifically, the essential competencies farmers in Lesotho should attain to develop their businesses and contribute to the country's commercial farming enhancement. The farmers targeted in the study were farmers in the districts of Maseru, Leribe, Butha-Buthe, and Mafeteng in Lesotho.

1.8 Chapter layout

Chapter 1 has outlined the introduction of this report specifying the research objectives, problem statement, and the introduction of all the features to be covered in this report.

Chapter 2 discusses the literature review.

Chapter 3 discusses the research methodology used in this study. It describes the research design, sampling strategy, data collection methods, and data analysis.

Chapter 4 covers the findings of the research. These results are gathered from the questionnaires distributed to the farmers sampled and then analysed.

Chapter 5 presents the study's conclusion and recommendations. After the analysis of the data collected and results given, a conclusion is drawn, and recommendations suggested.

1.9 Conclusion

It was noted that there is a problem in commercial farming, as it has not grown over the years. Some farmers could succeed but eventually failed. The study concentrated on factors that will be necessary for medium- and large-scale farms to be competitive, sustainable, and grow. Their success is hoped to attract subsistence and other interested parties to invest and start commercialising farming. The study was conducted using a quantitative research method using questionnaires. The questionnaires were personally administered to farmers in groups and individually.

The literature review states that critical entrepreneurial skills comprise strategic competencies, business and management competencies, information-seeking, and opportunity competencies. It also specifies that there should be proper policies protecting and guiding farmers so that they find direction. Furthermore, the literature states that factors such as innovation are critical for farmers' success to overcome climate change challenges and further increase efficiency and productivity. It further explains that farmers must leave traditional farming and treat it as a business, be innovative and competitive, seek markets, and have good strategies.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Farm earnings were recorded as decreasing yearly due to poor weather, low grain prices, diseases, and the World Trade Organisation's inability to tackle international subsidies (Shawn 2007:1). Farmers do not market their goods, there are low education levels among farmers, there is an absence of innovative product implementations necessary to increase the yield of products, and skills shortages are the main problems leading to the failure in farming (Khapayi & Celliers 2016:2). A degree of frustration is also evident in farmers, as they are overwhelmed by environmental challenges they face, especially because they feel ill-equipped physically and financially and they also know that failure to deal with them will increase their problems (Bamberry, Dunn & Lamont 1997:9).

Farmers must brace the volatility of the agricultural industry caused by multiple factors through different coping mechanisms (Lai, Widmar, Gunderson, Widmar & Ortega 2018:818). According to Lai et al., one of the coping mechanisms is to engage in additive opportunities that have fewer risks to the operations. Other mechanisms or factors that ensure sustainability in farms are discussed in this chapter.

2.2 Successful farming

Success in agriculture is defined by growth, equity, and sustainability (Gabre-Madhin & Haggblade 2003:9). These three factors of success define that success is an ever-evolving process and it is long-term. A successful farm continuously generates income, constantly improves its real net worth position, and can maintain a healthy cash flow position (Kaase et al. 2003:2).

Previously, to be successful in farming, a traditional way of managing involved only concentrating on production, focussing on controlling assets such as equipment, land and production facilities and lastly, driving down the cost. Management, however, has changed due to the many dynamics and critical focus areas involved in managing a successful farm (Holland et al. 2016:8). Holland et al. explained that farmers are now involved in marketing increasingly effective and efficient products, learning to operate in the rapid-changing environment, accommodating the increased mechanisation of processes, and effective managing of human capital in the farm.

Sustainability in farming also includes the development of new technologies and practices that are not harmful to the environment, goods and services accessible, and effectiveness of farmers leading to enhanced food production (Henning & Jordan 2016:1). Holland et al. added that to have a successful farm, managers should prioritise and trade-off tasks. The tasks involve management of biological processes, human resource management, various resource allocation, and the management of increasingly complex financial systems.

2.3 Factors influencing success in farming

Factors constituting to farms' success are educational programming, agricultural enterprises, production practices, alternative marketing, and risk management (Yeboah et al. 2011:2). Growth in agriculture is also influenced by open innovation agricultural researches, credit availability, production inputs, markets availability and easy access, and improved infrastructure (Mokone & Steyn 2005:276). Other strategies that improve profitability in farms include viable diversity, value-adding production enterprise, co-operation to enhance the scale of operations, time management, using advisors, and strict cost control (Bamberry et al. 1997:9-10).

Kaase et al. (2003:10) stressed that efficiency, profitability, and managing debt have the most influence on farms' financial success. There also must be defined goals, many years of farming experience, product specialisation, diversification of farm operations, using a financial management tool, educational background and continuous access to educational programmes, and availability of cost management tools (Yeboah et al. 2011:4).

In emphasis to the factors already discussed, farm size, type, its operation, use of information technology, marketing practices, sufficient irrigation, organisation and management of the farm, training, farm labour and off-farm income, marketing practices and research influences the South African farm's success (Magingxa, Alemu & van Schalkwyk 2006:3). Magingxa et al. further clarified that significant and timely information assists in managing transaction costs for farmers, as they will know what to produce, timing, quantity, and quality required. Agricultural success is influenced by good governance and political commitment in the sector, research, marketing and information systems, the vertical supply chain that is efficient and add value to production, technology, soil and water conservation, collaborations, and favourable policies in Africa (Haggblade 2004:21-22). While evaluating agricultural milestones, some African countries are more successful than others. While looking at the developing countries, Magingxa et al. stated that farms' success is influenced by four factors according to Lipton, namely land distribution, agricultural research, markets, and rural infrastructure.

Even though various literature established different factors, there seem to be success factors that are similar in most researches reviewed. All the key success factors are interrelated with each other and are embedded in a chain of related skills and resources (Aschemann-Witzel et al. 2011:1). Below are factors that the literature highlights that influence the success of farmers.

2.3.1 Financial capital and market access

- **Financial capital**

To start up a business and for it to cover operation costs, adequate capital is required (Vinturella & Erickson 2003:22). The availability of funds is the most difficult part of running any business and many farms fail because of inadequate funds (Ask 2003:16). According to Vinturella and Erickson, a business could be financed by borrowed money that must be paid back known as debt and owners' investment funds, which are not meant to be repaid known as ownership equity.

The ability to raise financial capital is the most critical success factor of any business. Financial capital through credit, therefore, could assist farmers to gain more financial

resources that would increase profitable business opportunities (Henning & Jordaan 2016:2). Henning and Jordaan highlighted that farmers with access to credit from commercial credit providers could finance their production activities without any difficulty. They, however, depicted that credit is only given to farmers who can repay the facilities; therefore, farms with a good credit score have a better chance to get financial assistance. Credit markets, especially in Africa, are underdeveloped and, in some cases, absent; therefore, successful farmers use their sources of investment (Reardon et al. 1995:5).

- **Market access**

Market access is a driving force of agricultural commercialisation. It helps to stimulate market driving forces resulting in a maximum potential for the farms, leading to increased income and improving living standards in rural areas in developing countries (Magingxa et al. 2006:4). It further clarifies that transport availability is also key in influencing market access, as it gives easy access to input and output markets. Magingxa et al. also explained that market access is a critical factor in developing countries, as it influences growth in farms' output and employment. Rural development is critical to farms' success (Windle & Cramb 1997:50). Windle and Cramb further explained that access to infrastructure such as roads leads to access to a larger size of the market and to labour. Access to water and roads, improved transport systems and other public infrastructures also lowers transaction costs and reduces post-harvest losses (Sjauw-Koen-Fa, Bloc & Omta 2016:84).

2.3.2 Technology

There has been a clear indication and evidence that indicate the benefit of adopting information technology applications in agricultural production (Gelb 1999:14). The adoption of innovative practices and technologies contribute to the success of agricultural farms and improve the likelihoods of higher profits (Lai et al. 2018:818). This is seen especially in the rural areas where most farmers lag in technology, which makes it difficult for them to get into a more lucrative market for their products (Magingxa et al. 2006:11).

Lai et al. explained that farmers must implement innovative technologies that expand production functions outwards and lowers the cost function resulting in greater profits. They, however, contrasted that imitations of these innovations from competitors and other industry participants could negatively affect the farms' profits. Farmers, therefore, must constantly be up to date and use new technology to differentiate themselves from competitors (Nivens, Kastens, & Dhuyvetter 2002:195), it should be their competitive advantage over others.

Technology also assisted in the ease of farm duties and reduces labour time, it also captures data that help farmers in their production planning in the future (Morris, Henley & Dowell 2017:136). Examples of modern technologies used are robotic technology where robots are taking over human functions and doing them effectively and efficiently (Bear & Holloway 2015:7). Other examples are farm machinery, genetics, conservation farming, and irrigation technologies. According to Bamberry et al. (1997:2), technological development contributes to major advances in productivity and its impact on agriculture includes:

- overcoming resistance problems in pest management;
- speedily adoption that ensures competitive advantage;
- improvement of production efficiency by biotechnology;
- new information systems that meet changing marketing strategies; and
- increasing productivity through mechanical, computing, electronics and biological technologies.

2.3.3 Diversification to other markets

Farm diversification involves strategically moving the farm activities from the core business to keep growing the business (McElwee 2006:4). Farmers can diversify by using farms' buildings for non-farming use to process and retail farming products, engaging in sports and recreation, tourism accommodation and catering, and other diversification activities (Phelan 2014:13). Diversifying farm operations increases probable chances of a farm's success in that farms with multiple commodities are resistant to income declines should one commodity incur a market decline condition (Foreman & Livezey 2003:7).

The diversifying activities could lead to on-farm diversification where activities are still farm-related or off-farm diversification, where the activities are not farm-related. Diversification improves the viability of the farm businesses by decreasing their dependency on the primary product (McElwee 2005:18). Firms that diversify into the tourism industry, for instance, could rely on income brought by accommodation and other tourism activities as a complement of income from the agricultural activities (Huylenbroeck 2006:14).

This diversification also assists in that farms use their infrastructure to their full capacity and gain more income from them. Farmers use their old resources to exploit new opportunities (Borsch & Forsman 2001:35). Diversification, however, is enabled by the availability of resources such as labour, land, skills, and capital (Morris et al. 2017:134). Having enough resources needed to diversify would help the venture succeed. As illustrated in Figure 2.1, diversification would lead to the redeployment of resources such as capital assets, land, and labour (Phelan 2014:34).

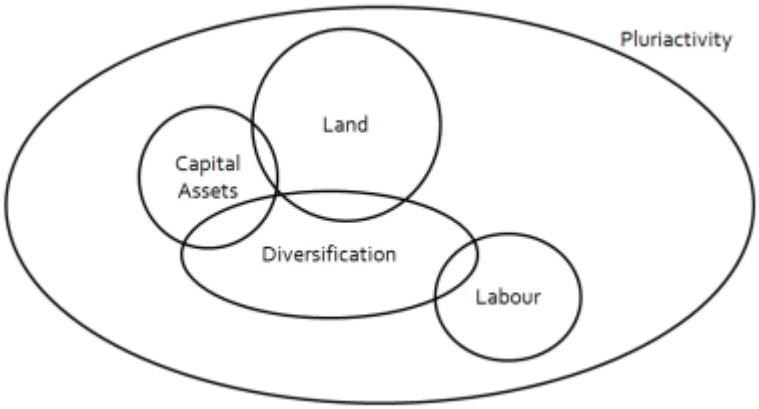

Figure 2.1: Turner et al.'s elements of diversification

(Phelan 2014:34)

Furthermore, entrepreneurial skills are critical as diversification becomes an agricultural practice. Farmers, therefore, must shift from being only product-oriented but also market-oriented to succeed (McElwee 2006; Philan 2014:20). Ploeg and Roep 2003 cited in Philan (2014:27-28) highlighted that farms that diversify are three-dimensional enterprises, as per Figure 2.2. They fulfil their function by deepening their

products, organic farming, and high-quality production. They also fulfil their function by broadening their horizon through diversification and re-grounding of the farms' resources through new forms that reduce costs and generate off-farm income. The shift of the three dimensions of deepening, broadening and re-grounding creates what Ploeg and Roep defined as the "augmented capacity to create wealth".

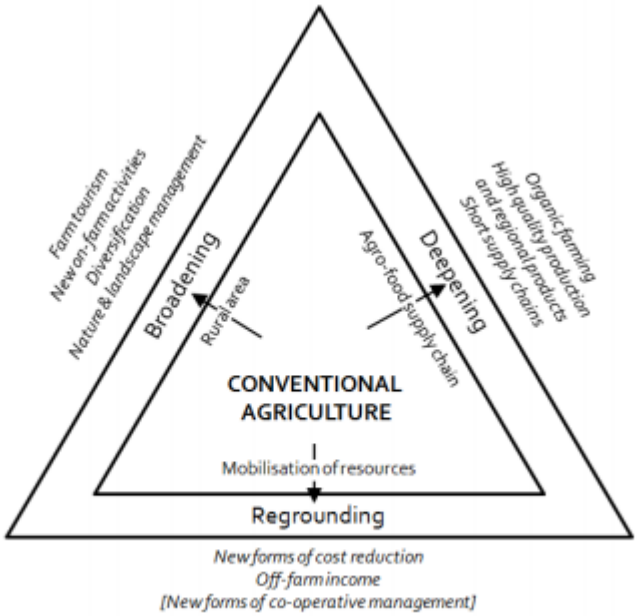

Figure 2.2: Ploeg and Roeps' structure of the augmented capacity to create wealth

(Phelan 2014:28).

2.3.4 Open innovation

Innovation requires networking, meaning that a firm's innovativeness and competitiveness no longer depends on the in-house skills but the effectiveness gained from external sources of knowledge and skills (Lambrecht, Kühne & Gellynck 2015:2). The open innovation model assumes that organisations could and should combine external ideas with the internal ones and should further use internal and external paths to access the available markets to advance their technologies and capabilities (Chesbrough, Vanhaverbeke & West 2006:1). Open innovation is significant to

companies in promoting technologies, knowledge, and innovation (Vieira, Do Vale & May 2018:4).

In developing and emerging economies, farmers face productivity and transactional barriers when accessing high value-adding food markets. Increasing capabilities and creating new business relationships and partnerships among all the strategic partners within the supply chain, therefore, increases success chances (Sjauw-Koen-Fa et al. 2016:84). To be successful, farmers must challenge the environmental norms by acting and thinking differently, they should break the rules, become leaders and focus on creating quality for customers (McDonald 2016:7). There is visible improvement when farmers connect with extensions and promote peer-to-peer learning, transferring knowledge, and developing each other, as per Figure 2.3. The figure illustrates that farmers should use and make available a pool of knowledge that will be shared among the communities, the industry and the government research hub, which would promote shared knowledge and innovation. Lambrecht et al. (2015:11) clarified the importance of close contact among farmers, suppliers, buyers, and researchers. They further stated that farmers are never involved in research but are the end-users and recommend that they become more involved. Farmers, therefore, must take more ownership and get involved in their research and innovation programmes.

Collective innovation furthermore has proven to assist farmers to challenge main competitors on national and international markets (Martinez 2013:75). Martinez further clarified that in-house R&D expenditure is costly for one company but costs less if it is shared. He, however, stated that partners should ensure that the partnership is beneficial to all because if not, it would be a waste of limited organisational resources.

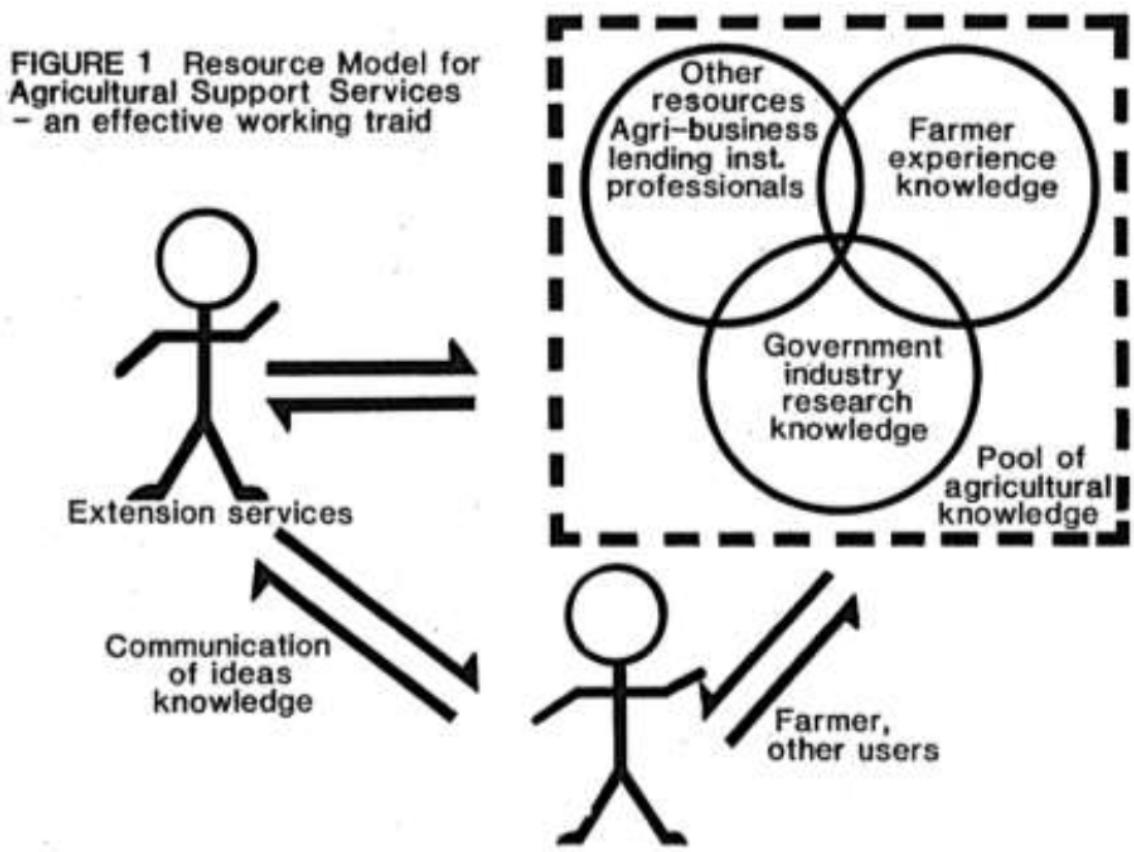

Figure 2.3: Tom Philip's Agricultural open Research and Development pool

(McDonald 2016:31)

2.3.5 Financial performance

A farm is successful if it has maintained a positive average real rate of return-to-farm equity over a long period (Foreman & Livezey 2003:2). They established that successful farms have lower interest rates, high rate of return on farm assets, and lower debt-to-assets ratios. Foreman and Livezey further explained that successful farms have plenty of farm assets, rented or leased land and machinery, and efficient farm input used when measuring it by gross farm income over total expenses.

Farms are likely to be successful if they keep tight control over variable costs, farmed with other farmers and shared expenses, kept farms' financial records, and forward contracted (Foreman & Livezey 2003:3). Lai et al. (2017:3) stressed that farmers who control costs and output production are also at a better state to be profitable. Successful farmers use diverse production systems, they also adopt measures that

control costs, and have marketing strategies that yield the highest level of profitability (Magingxa et al. 2006:4).

2.3.6 Business ecosystem

A business ecosystem is an economic community that provides a platform and interaction between organisations and individuals (Kim 2016:2115). It is also referred to as a network of interconnected companies with a platform to incorporate production and demand while enhancing value through innovation (Yun et al. 2017:809). Kim further explained that this platform helps businesses to achieve an open market, operating systems, social networks, transaction systems, ways on how to lead the industry, and most importantly, ways to generate sustainable revenue sources and continuous growth.

Agricultural lobbying groups and networks are beneficial to commercial farming and agribusiness development because they improve the economic exchange system of farmers and promotes the evolving of strategies to enhance market power (FAO 2004:17-18). FAO further specified that the creation of mutual assets specificity reduces uncertainties and enables farmers to afford specific plant and equipment that is too expensive for the individual farmer. Some farmers realised that to successfully venture with other farmers in forming cooperatives is beneficiary for their success (Yeboah at al. 2009:10).

Furthermore, private partnership without the government element has potential in improving farmers, cultivating a culture of sharing success, and focusing on building one another (Louw, Vermeulen & Madevu 2000:10). Louw et al. further explained that this integration is an opportunity for banks, farmers, and retail stores to work together, sharing ideas, and promoting success within their network.

2.3.7 Business growth strategy

Farm management is divided into strategic and tactical management, where strategic management focuses on long-term goals of the business and tactical management deals with the short-term actions that keep the firm on the path to achieving its goal (Holland et al. 2016:2). Holland et al. clarified that every farm should choose a strategy

that will be informed by its expectation on market prices of outputs produced and its production levels, which will jointly inform the expected revenue. Farms should also choose a strategy that will help manage variable and fixed expenses. The interaction and connection of these key management areas also affect the operation's profitability, as illustrated in Figure 2.4 (Lai et al. 2018:819). The key areas illustrated in Figure 2.4 translating to the operation's profit include the management of output prices, production, land, equipment, facilities, people and their contribution, and controlling costs.

Due to the high volatility of the agricultural industry, farmers face risks, and to manage risk, a good risk management strategy must be developed (Mishra, Hisham, El-Osta & Johnson 1999:625). Farmers should master dealing with uncertainties and use them to their advantage. To, therefore, increase profitability, farmers must be willing to take more risks (Niven et al. 2002:200). Mishra et al. further explained that other strategies that lead to farm success include maintaining high production, controlling hired labour and expenditure, and adopting new technology. These elements are key to financial success.

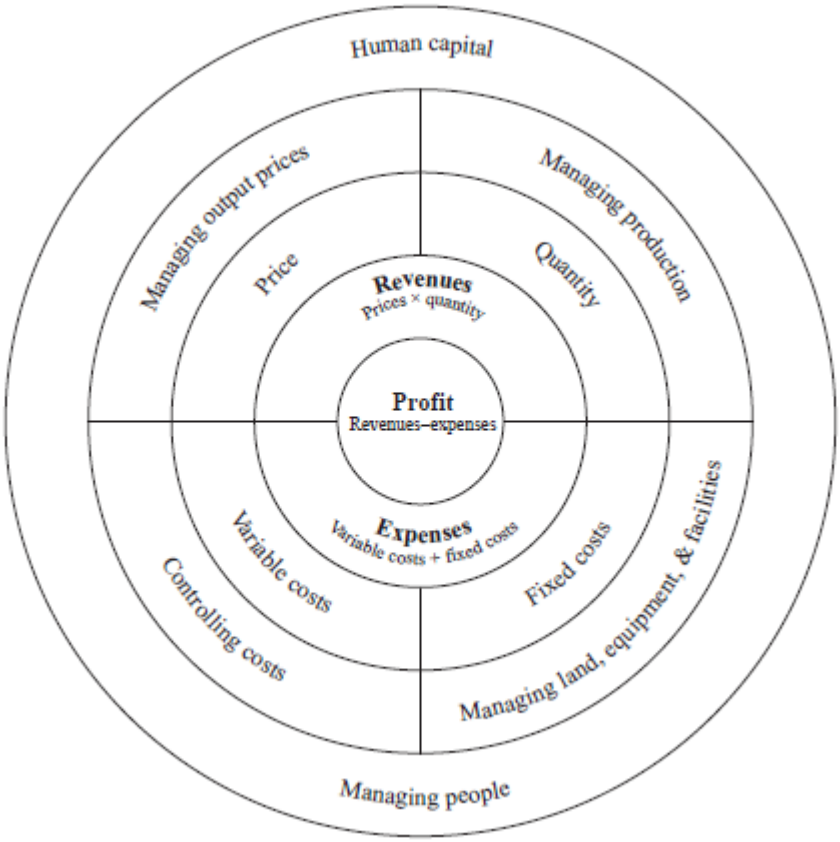

Figure 2.4: Holland et al.'s profit-centric functional key success for agricultural business success

(Lai et al. 2018:819).

- **Marketing**

Marketing is a vital part of the business growth strategy that ensures success for any company. Marketing and advertising rigorously bring great rewards (Aschemann-Witzel et al. 2011:3-4). Marketing using product branding can be a potential tool to enhance success for farmers, especially emerging farmers (Louw et al. 2000:11). Marketing also helps farmers increase their ability to manage risk, it further helps build a relationship between producers and the agribusinesses and extends their knowledge and understanding of the markets they supply (Bamberry et al. 1997:13).

Most farmers in developing countries do not market their products. Aschemann-Witzel et al. (2011:3-4) suggested that farmers should obtain customers' data, which could be nutrition or health claim or consumer behaviour insights. They suggested that farmers should observe the communities to which their customers belong, find relevant ways to appeal to their social values and interests and choose the perfect media for commutations. Farmers, therefore, must possess the necessary skills to assist them in the correct marketing that will help their farms to succeed.

Ashby (1995) emphasised the importance of marketing skills for farmers in farm management (Bamberry et al. 1995:55). The critical skills include (a) their ability to access market intelligence on time and to use it appropriately; (b) the ability to recognise market opportunities and to be open in realising niche and specialise markets instead of producing bulk products; (c) the ability to use quality control and choose best practices techniques to be the farm's product marketing strategy; (d) being aware and using branding as a product strategy; and (e) the ability of the farmers to consider strategic alliances with processors and marketing strategies.

- **Productivity**

Managing productivity is also critical in creating a business growth strategy that is beneficial to the company. To increase profitability, farmers must control costs and increase agricultural output intensity and yield (Niven et al. 2002:200). Output prices and managing productivity affect the revenue side of profitability (Lai et al. 2018:820). Farms that succeed in managing cost and productivity are mostly the ones that are adopting modern tools for cost and production management (Almedia & Zylbersztajn 2017:51).

Producing quality products and producing it consistently are the successful farmers' priority (Yeboah et al. 2009:10). Productivity, product quality, and delivery reliability must be improved to attain sustainability and competitiveness (Sjauw-Koen-Fa et al. 2016:91). In developing countries, firms and farms are under pressure to increase competitiveness by improving quality (Humphrey & Schmitz 2002:1). Humphrey and Schmitz proposed that value enhancement must be done by four kinds of upgrading types.

Process upgrade: inputs being transformed into output more efficiently by reorganising production systems or through superior technology. Sjauw-Koen-Fa et al. suggested the improvement of infrastructure and provision of post-harvest facilities.

Product upgrade: engaging in a sophisticated product line, which is fined by increased unit values. Sjauw-Koen-Fa et al. suggested the provision of inputs such as fertilisers and the introduction of advanced farm technologies.

Function upgrade: acquiring other new functions or abandoning old ones to increase overall skill content of activities, for instance, enhancing farmers to be crop specialists or collaborate in the processing or marketing of their products.

Inter-sectoral upgrade: firms of clusters venture upgrading into productive activates.

- **Managing people**

People management also add value to a good business growth strategy. Almedia and Zylbersztajn (2017:51) highlighted that some successful farms use skilled labour, invest in their training, and differentiate their salaries. They also specified that some intensive labour mechanisms are advantageous to increase productivity. Most farms are family-owned and employees are family members; therefore, managing family conflicts and striving to have a stable family relationship is a critical factor that could affect a farm's profitability (Lai et al. 2018:820).

2.3.8 Legal and governmental policy

Several key factors influencing success in farming involve legal and government policies. For instance, the government can remove all the hurdles concerning market imperfections and administrative rigidities as a way of influencing the market mechanisms and ensuring that it works efficiently (McElwee 2005:46). A stable legal environment and appropriate government policies constitute to successful farming (Garnevska, Liu & Shadbolt 2011:74).

According to Meyer et al. (2017:8), a stable legal environment is the one that:

- has well-communicated laws with the industry participants before they are changed;

- are realistic for the consumers, regulator, and the industry concerned; and
- there is knowledge-sharing between the regulator and the participants of the law.

Meyer at al. further elaborated that farmers are mostly frustrated by the fact that lawmakers are only concerned about consumer rights and protection and do not concentrate on protecting the industry.

2.3.9 Good management and leadership skills

- **Types of farmers**

There are several types of farmers according to Lauwere et al. (2002) cited in McElwee (2006:2) and they are:

1. economic entrepreneurs creating an economic change;
2. socially responsible entrepreneur farmers who strive to strike a balance between realising the financial success of the farm and maintaining their role in the social and environmental role;
3. traditional growers who could be successful in focusing solely on activities that guarantee success;
4. new growers-farmers who diversify into new areas of activities; and
5. doubting entrepreneurs who are always reluctant to embrace change.

- **Successful farm entrepreneurship**

Entrepreneurship is explained as the most powerful economic force (Phelan 2014:62). Phelan further clarified that entrepreneurs who succeed get many titles such as having a drive, intuition, or are a symbol of individualism. Every farmer has characteristics and a specific combination of competencies relating to the farmer's function domain of being an entrepreneur, manager, and a craftsman (Bergevoet 2005:54). The combination of the characters and competencies, as explained by Bergevoet are critical for entrepreneurial success.

The difference between a successful farmer and others is realised by the following personal traits; the successful ones have more believe in their ability to control events,

have problem-solving abilities, and social initiative skills (Schiebel 2002, cited in McElwee 2006:2). McElwee further added that according to Killio and Kola (1999), there are seven characteristics of a successful farm and farmer:

1. Profitable production is linked to constant production evaluation, income and expenditure;
2. Constant development of both cognitive and professional skills as a quest to gain Continual Professional Development (CPD);
3. Benefiting from positive work ethic;
4. Goal-oriented operations – setting and reaching goals;
5. Being able to use recent information relevant to the farm's circumstances and needs;
6. Having a favourable enterprise starting point – having good condition machinery, infrastructure (land and buildings), and having an appropriate balance between product pricing and investments in production;
7. Having a good cooperation with others in the supply chain.

- **Management skills and competencies**

Managerial skills are sets of skills that farmers could use to develop their farming business (McElwee 2006:4). Managerial skills and competencies are critical factors that contribute to farms' profitability (Lai et al. 2018:819). They influence the farmer's decision making (Bergevoet 2005:54) and if a farmer has a good combination of skills and competencies, their decisions will be profitable for the business.

Some of the critical skills are purpose-driven, business planning, policy formulation, ability to measure performance social and growth orientation, financially conservative, and concern about the future (McElwee 2006:4). Farm management areas that are key to the farm business success emanate from the fundamental drivers of farm profitability (Holland et al. 2016:2). Hollard et al. further stated that the capacity of farm management in managing production, managing output prices, managing land, equipment and facilities, controlling costs and managing people will affect the overall path of the business. To increase productivity, farmers should acknowledge the importance of risk management strategies and concerning drought and an increase in

marketing fluctuations (Bamberry et al. 1997:10). The successful implementation of such strategies requires sophisticated management and marketing skills.

Phelan and Shapley in their literature identified competencies that farmers believe are vital for their success. Table 2.1 lists some of the critical competencies identified.

Table 2.1: Critical entrepreneurial skills and competencies for farmers

Learning orientation	Problem analysis	Management control
Self-management	Organising	Value clarification
Planning	Conceptual thinking	Judgement
Market orientation	Negotiating	Teamwork
Result orientation	Persuasiveness	Strategic orientation
Networking	Vision	Human resource management
Leadership	General awareness	International orientation

(Phelan & Shapley 2012:9)

2.4 Conclusion

Figure 2.5 summarises each critical factor emphasised by the literature. The listed critical success factors are interrelated and influence the success in farming. The first factor is capital. Having capital to cover costs and daily operations of the farm is a critical necessity for operating a successful farm. Literature, however, stated that farmers in developing countries face difficulties to secure such funds, as it is difficult to get credit from commercial banks. The second factor is technology. Technology is vital to improving farm activities, reducing errors caused by manual labour, promoting

effectiveness, and increasing output and productivity. The literature encourages farmers to try new technologies that will enhance their productivity and efficiency. The third factor is market access. Market access is a driving force to maximising farm income. Literature also stated that market access includes access to infrastructures such as roads to larger markets, transport systems and water.

Diversification is the fourth factor. Diversification is also a critical factor that leads to off-farm income. Off-farm income complements the income from the primary products and decreases dependency on the income from the core business. The fifth factor is open innovation. Open innovation encourages farmers to create a network working together to access R&D that will improve their farming systems and generate more income. Open innovation is advantageous because farmers share the expensive costs of R&D and share different external and internal knowledge and ideas to find innovative ways to collectively gain success. The sixth factor is financial performance. Successful farmers have controls and measures on how to lower their expenses and maximise income. Having a strategy to improve financial performance, therefore, is another critical factor to farmers' success.

Other critical factors include the intensive marketing of products and building a brand. Literature also confirmed that most farmers do not advertise or brand their products. Managing productivity is also critical. It can be managed by upgrading processes, products and functions and by improving the quality of those products. Managing people and improving their farming skills also is critical because proper management of human capital improves effectiveness and productivity. The farmer, therefore, must harvest the necessary skills that could help the farm be successful. Such skills help the farmer to be entrepreneurial, manage risk, employees and business success. Lastly, government policies are useful to promote farms' success, especially, if they are favourable to the farmers.

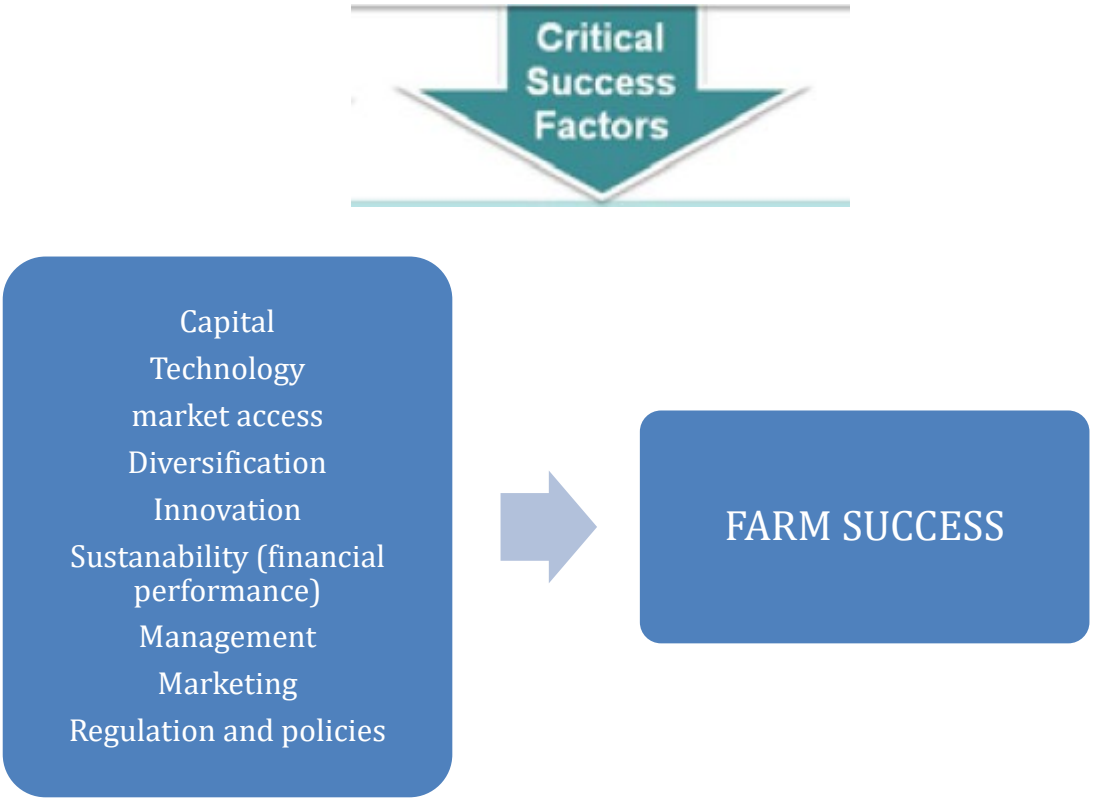

Figure 2.5: Framework of critical success factors

(Adopted from Almeida & Zylbersztajn 2016:219)

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

The research methodology gives a detailed structure of how the research was conducted. It is the methods or techniques used by the researchers while studying their research problem (Kothari 2004:8). Kothari stated that the techniques could be grouped in three ways. The first group is methods that are concerned with how data collection will be conducted. The second group is the statistical techniques used to establish the relationship between the data and the unknowns, and the third group consists of methods used to evaluate the accuracy of the results obtained.

3.2 Research design

The research design is the blueprint to achieving the objectives and getting answers and a researcher, therefore, must consider the advantages of several competing designs before settling for the final one (Cooper & Schindler 2014:83). Choosing a suitable design helps to get the best and effective results. It provides a researcher with the perfect framework for collecting and analysing data (Bryman 2008:46). Other advantages, according to Bryman, include:

- expressing causal connections between variables;
- generalising to larger groups of individuals than those that form part of the investigation;
- understanding behaviour and its meaning in a specific social context; and
- appreciating social phenomena and its interconnection.

According to Saunders, Lewis and Thornhill (2016:163), a research design is a general plan of how the researcher will go about answering the research questions. It contains the source of which the researcher intends to collect data and how to also analyse it. There are two designs, namely quantitative and qualitative research designs. According to Saunders et al., quantitative is normally used for any data collection technique such as questionnaires or any data analysis procedure such as graphs, which can generate or use numerical data. Qualitative is used for data techniques

such as interviews or data analysis procedures such as the categorisation of data, which generates or use non-numerical data.

3.3 Quantitative research design

The quantitative research design was used for this study. Quantitative research examines the relationship between variables and the variables are later analysed through a range of statistical and graphical techniques (Saunders et al. 2016:166). Quantitative researchers are rarely concerned by the mere description of how things are but rather by why things are the way they are (Bryman 2008:175). The method tends to answer questions such as how much, how many, how often, when, and who while measuring the variables such as consumer behaviour, knowledge, attitudes, or opinions (Cooper & Schindler 2014:146).

The researcher preferred quantitative method because the research determines the relationship between different factors and their effect on farmers' success. Quantitative research investigates causal relations among variables (Kuada 2012:104). Quantitative method is also preferred because qualitative is scrutinised to be too subjective, susceptible to human error, bias in data collection and interpretation, while quantitative method attempts the precise measurements of things (Cooper & Schindler 2014:145-146). The quantitative is helpful, especially in cases where it measures and analyses a larger group.

3.4 Method of data collection

Kothari (2004:17) explained there are many data collection methods and while choosing an appropriate method, a researcher considers the nature of inquiry and other related factors. Kothari further explained that primary data could be collected by a survey or an experiment, and in a survey, data could be collected through observation, interviews and questionnaires, while in an experiment, quantitative measurements are observed or data are examined to find the truth in the researcher's hypothesis. Quantitative research could use single data collection techniques such as questionnaires with corresponding analytical procedures or a multi-method

quantitative study that uses more than one data collection technique such as combining questionnaires and structured observation (Saunders et al. 2016:166).

This study was conducted using questionnaires. Questionnaires are preformulated set of questions written for respondents to record their answers (Sekaran & Bougie 2013:147). Questionnaires are also known to be an efficient data collection method. Its advantages, according to Sekaran and Bougie, is that the method is less expensive and saves time unlike interviews or observations but they get a higher chance of non-response. The researcher preferred questionnaires because it is best for collecting a large number of quantitative data.

The advantages of questionnaires are (Kothari 2004:100-101):

- low cost;
- it is free from bias because the respondents answer the questions;
- respondents have time to read and understand the questions; and
- a huge sample can be made to increase dependability and reliability.

The disadvantages are (Kothari 2004:101):

- it has low return rate, especially if they are sent by mail or emails;
- it can only be used if respondents are educated and cooperative; and
- they have a build-in inflexibility because they cannot be amended when they have been sent out.

There are different ways of distributing questionnaires, namely personally-administered, electronically distributed, or mailed to respondents (Sekaran & Bougie 2013:147). This study followed the personally-administered questionnaires method to try and eliminate or reduce the low response problem and mostly because most farmers could be uncooperative and might need more clarification. The researcher could explain to respondents the motive behind the research and work on pursuing their cooperation. Personally-administered questionnaires take much time and effort and to try and reduce that, the researcher not only visited individual farmers but groups too. Most data were collected from joining farmers' association meeting to gather a

group of respondents. This was done in assistance from the Lesotho National Farmers Union.

3.4.1 Guidelines for questionnaire design

To limit bias in the results obtained, questionnaires must be correctly structured. The following are guidelines according to Sekaran and Bougie (2013:149-154) that assist in the correct designing of the questionnaires and that were used in this study:

- The content and purpose of the questions should be carefully considered and should measure adequately the study's variables.
- The language and wording of the questionnaires should be according to the respondents' level of understanding.
- Types and form of questions: The questions can be closed or open-ended questions. Open-ended questions should be used if the respondent's opinion is required and they can answer in any way they choose. In closed questions, respondents choose among alternative responses given by the researcher. The researcher should avoid ambiguous, leading and double-barrel questions.
- The sequence of questions asked should lead a correspondent from general to specific questions and from easy to more difficult ones. It helps the correspondent to easily progress through all the questions asked.
- Personal information should be asked only if it is necessary, and should sensitive information such as age, salary, and others deem necessary, the information should be asked in a range-option instead of seeking an exact figure.

Questionnaires were structured to meet the objective of the research. A choice of questions regarding farmers' knowledge of key success factors was developed. The key success factors specifically investigated were capital, technology, critical skills, market access, diversification, innovation, sustainability (financial performance), management, marketing, regulation and policies. A Likert scale was used to assess the farmers' preferences of the key success factors.

3.5 Population

The total set of elements from which a sample is taken is called a population (Saunders et al. 2016:274). The population is also defined as an entire group of things, people or events (Sekaran & Bougie 2013:240). Saunders et al. further explained that the total population might have elements in which the researcher is not interested and the researcher, therefore, can redefine the population into a manageable one, which will be a subset of the population and known as a target population. The sample was selected from the targeted population as illustrated in Figure 3.1.

The total population of this study consist of farmers practising commercial farming while the targeted population is medium- and large-scale farmers. The ministry of agriculture together with Lesotho Bureau of Statistics does not have data on the total number of farmers. A census of farmers or registry is still not practised in Lesotho and, therefore, there is no published data on medium- or large-scale farmers available. The total population of farmers, however, is dominated by subsistence farmers, and in commercial farming, the sector is dominated by smallholder farmers.

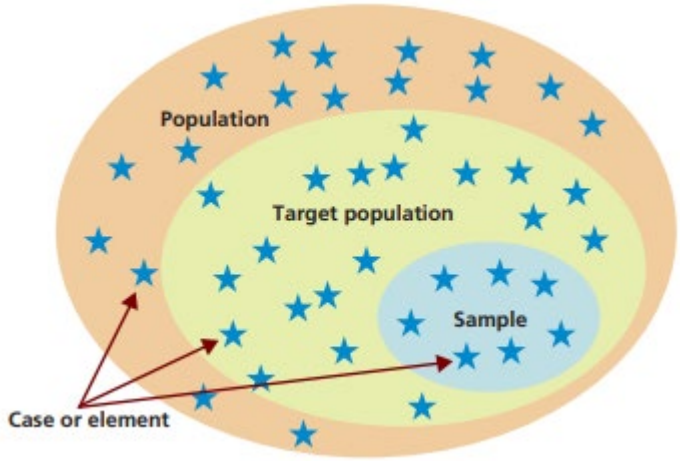

Figure 3.1 Population, target population and sample and elements

(Saunders et al. 2016:274)

3.6 Sampling design

A sample is defined as a subset of the target population (Sekaran & Bougie 2013:240), as illustrated in Figure 3.1. It includes members chosen from a group of potential candidates that will be studied. A sample is necessary when research is conducted. It would be impractical for a researcher to collect data from the entire population and as explained by Saunders et al. (2016:274), there, therefore, are needs and reasons to sample such as the following:

- It is impractical to survey the whole population.
- There could be budget constraints that could prevent a survey of the entire targeted population.
- There could be time constraint that could prevent a survey of the entire targeted population.

There are two sampling designs, namely probability and non-probability. The probability sampling is used when the representativeness of the sample is important in the interest of the wider generalisation. If factors such as time are more critical than generalisation, non-probability sampling is used (Sekaran & Bougie 2013:245). In probability sampling, sample elements are chosen at random while with non-probability sampling, a sample is selected with a pattern or scheme in mind (Cooper & Schindler 2014:343).

This study used non-probability sampling. The non-probability category used was purposive sampling. The non-probability sampling was chosen because it saves time, is convenient and the researcher could still find the solutions to the problem statements. Purposive sampling information is collected from specific people who can provide the desired information needed by the researcher (Sekaran & Bougie 2013:252). The purposive sampling method used was judgement sampling because, in judgement sampling, the researcher uses respondents who are available and at an advantage to provide information. According to Sekaran and Bougie, judgemental sampling uses respondents who are conveniently available and can provide relevant information.

The sample size selected was 100. The size selected was based considering time and logistics convenience, as the researcher had to distribute and collect the questionnaires personally and because there exists no published information on the targeted population. The researcher used samples supplied by the ministry of agriculture, Lesotho Bureau of Statistics, and Farmers' Association. The sample selected was large- and medium-scale farmers located in the four districts. The districts are Maseru, Leribe, Butha-Buthe, and Mafeteng. In those districts, farmers were readily available to respond and fit the targeted population. The researcher also chose these districts, as there are farmers in the urban and rural areas and, therefore, there were different practises, privileges and perspectives.

3.7 Process of collecting data

The total number of medium- to large-scale farmers is unknown because there has never been a census performed on farmers. The sample of 100, therefore, was deemed appropriate to conduct the study; 100 questionnaires were distributed and a response rate of at least 85% was expected. The list of the target population was obtained from the ministry of agriculture, Lesotho Bureau of Statistics and Farmers' Association. To encourage a high response rate, the respondents were explained the necessity of the study and impact of the data they share towards determining the growth of commercial farming in Lesotho. The process of self-administering the questionnaires allowed the researcher to explain the research objective to the farmers. They willingly volunteered to partake in the study after clarification. The researcher joined the farmers' meetings and gatherings to collect larger samples in their groups, the researcher further went to different individual farms. The researcher collected 70 responses, which made the response rate of 70%.

3.8 Data analysis

Quantitative data in a raw form have limited to no meaning until it is processed and analysed (Saunders et al. 2016:496). Saunders et al. further explained that in analysing such data, quantitative analysis techniques such as tables, graphs, and statistics assists in exploring, describing, presenting, and examining relations and

trends within data collected. Data are analysed using Excel and software packages such as SPSS.

3.8.1 Preparing, entering and checking of collected data

Saunders et al. (2016:496) described the following steps to consider when undertaking a quantitative analysis:

- Types of data

Collected data can be classified into different categories. Data could be divided into categorical or numerical data. Categorical data cannot be measured numerically but can be categorised into its characteristics. Numerical data can be counted or measured numerically. A researcher, therefore, must know the different types of data collected and how it will be categorised.

- The layout and format of data required by the used analysis software

A researcher must be clear about the precise data layout requirements needed during the analysis. Data can be analysed using different types of software or an Excel spreadsheet. A researcher, therefore, must know the compatible software if they choose to use the software. If Excel is used, a researcher must pay attention to using the columns and rows correctly, for instance, they should label them correctly.

- The impact of coding data on subsequent analyses

All types of data must be coded using numerical codes. The advantage of coding is that data are captured fast using numeric, it lessens errors, and it makes subsequent analysis easy.

- The process of inputting data

The advantage of having internet questionnaires is that data are already inputted and saved, but if data must be manually entered, the researcher must ensure that data is entered correctly and most importantly, saved regularly.

- The process of checking errors on data

The process of coding and entering data is always faced with errors and, therefore, it is advisable when entering data to check for illegitimate codes, illogical relationships and ensure to adhere to all the rules in the filter system.

The researcher, therefore, followed these steps to ensure that data collected were prepared and entered correctly and that error is limited. The researcher used SPSS to capture and analyse data. Data collected was assigned specific numbers and captured in a spreadsheet, responses were entered and thereafter verifies. The results were thereafter presented in a descriptive statistics in a form of tables and charts.

3.9 Ethical considerations

The study's ethical consideration ensured that participants are not put in any harm, pain, embarrassment, or loss of privacy, as advised by Cooper and Schindler (2014:28). The research will follow the following guidelines:

- Explain the benefits of the study

The purpose of this study was communicated to the participants. Participants were not deceived or manipulated into participating. According to Cooper and Schindler, deception happens when participants are not told the truth or are told a partial truth to influence them to participate in the study.

- Explaining participants' rights and protection

The participants had the right to remain anonymous, their privacy was not tempered with and their confidentiality was observed. Their data, therefore, will be kept confidential and not shared without their consent. The study did not in any way impose any harm to participants.

- Obtain informed consent

The final stage to be considered when the participants have been explained the purpose of the study and their rights were to ask for their consent to continue with the study. Only willing respondents took part in the study.

3.10 Conclusion

The research methodology that is appropriate and can answer the research questions were selected. The quantitative research design was chosen as the best design for the study, which was conducted using personally-administered questionnaires. The sampling method used was non-probability sampling. The advantages of the chosen designs and models were discussed ensuring that the best ones are identified and chosen. A sample of 100 was selected and questionnaires distributed. The researcher, with the help of the farmers' union, joined farmer gatherings to collect data and further visited other individual farmers to collect data. Seventy (70) responses were collected making the response rate 70%. SPSS was used to capture and analyse data.

CHAPTER 4: RESEARCH FINDINGS AND ANALYSIS

4.1 Introduction

This chapter lays out the results from the questionnaire analysis of data collected. A sample of hundred questionnaires was distributed and 70 of those questionnaires were completed resulting in a 70% response rate. After collection, the data were captured and analysed through SPSS. The chapter covers the findings of the study and the study analysis focusing on the characteristics of the farmers, their farm performance and operations practices, farmers' skills, and the results on critical success factors.

4.2 Characteristics of farmers

The questionnaires covered the years of farming, education, and farming type and size. Farmers were also asked to evaluate how their business is doing and how they finance their farms. The farmers' number of years spent farming spread quite evenly and the high percentage is 30% of farmers farming less than 10 years. As per Table 4.1, 30% of farmers have been farming for less than 10 years, 27.1% farmers between 10-20 years, 12.9% for 31-40 years, and 20% have been farming for over 40 years.

Table 4.1: Years of farming

Years of farming		Frequency	Percent
Valid	<10	21	30.0
	10 – 20	19	27.1
	21 -30	7	10.0
	31 – 40	9	12.9
	>40	14	20.0
	Total	70	100.0

Land availability of farmers seems to be a concern, as it was already established that Lesotho dwellers have land restrictions. Even though the respondents' highest percentage were those who own more than 10 acres, it is a small percentage of 37.1%. The farmers with 0-1 acres were 10%, 2-3 acres were 18.6%, 4-6 acres were 24.3%, 7-9 acres were 20%, and those occupying over 10 acres were 37.1%, as illustrated in Table 4.2 below. Land availability is a concern and has a negative implication for sustainability and market participation.

Table 4.2: Total number of acres

		Frequency	Percent
Valid	0 – 1	7	10.0
	2 – 3	13	18.6
	4 – 6	10	14.3
	7 – 9	14	20.0
	10 plus	26	37.1
	Total	70	100.0

To further evaluate whether farm size affects farms' performance, an analysis of the relationship was done. As stated in Table 4.3, only 10% of the farmers have 0-1 acres, none of those farmers stated that their farm performance declined. One per cent (1%) stated that the business remained the same, 6% stated that the performance improved slightly, and 3% stated that their farms' performance has significantly improved in the past 24 months. In comparison, farmers with 10 and more acres have 7% of the farmers stated that their businesses declined significantly, and 1% stated that their businesses declined slightly. Farmers with smaller farms, therefore, did not declare declines while farmers with bigger farms did.

Except for crop farming where more land leads to more production, farmers in livestock can survive well with a small land. For instance, it does not require a livestock farmer a huge land to own a large amount of livestock. Livestock in Lesotho is kept at what is called “cattle posts”, which is a huge piece of land where there is free land for livestock to inhabit under the watch of herd boys, and there are also free-rangelands for the entire community to feed their livestock. Farmers, therefore, do not have to keep their livestock at their farms at all.

Even though farmers with 10 and more acres show that their business declined more than that of small farms, farmers with large farms also have the highest percentage in improvement. Thirteen per cent (13%) of the farmers stated that their farms’ performance improved slightly while 10% of the farmers stated that their farms improved significantly. Between 0 and 6 acres, an average of 3% of the farmers, shared that their business performance significantly improved.

Table 4.3: Cross-tabulation of farm performance and farm size

		Please evaluate the development of your business over the last 24 months					
		declined significantly	declined slightly	remained the same	improved slightly	improved significantly	Total
What is the total number of acres you currently have farm	0 - 1	0%	0%	1%	6%	3%	10%
	2 - 3	3%	3%	4%	6%	3%	19%
	4 - 6	1%	1%	1%	7%	3%	14%
	7 - 9	4%	3%	7%	3%	3%	20%
	10 plus	7%	1%	6%	13%	10%	37%
Total		16%	9%	20%	34%	21%	100%

As illustrated in Figure 4.1 below, most respondents are between 36-50. The lowest percentage is young farmers who are between the age of 18 and 24. Farmers aged between 18 and 24 make 4.3%, farmers between the ages of 25 and 35 make 25.7%, farmers between the ages of 36 to 50 make 34.1%, farmers between 51 and 60 are 27.1%, and farmers over 61 of age are 5.7%.

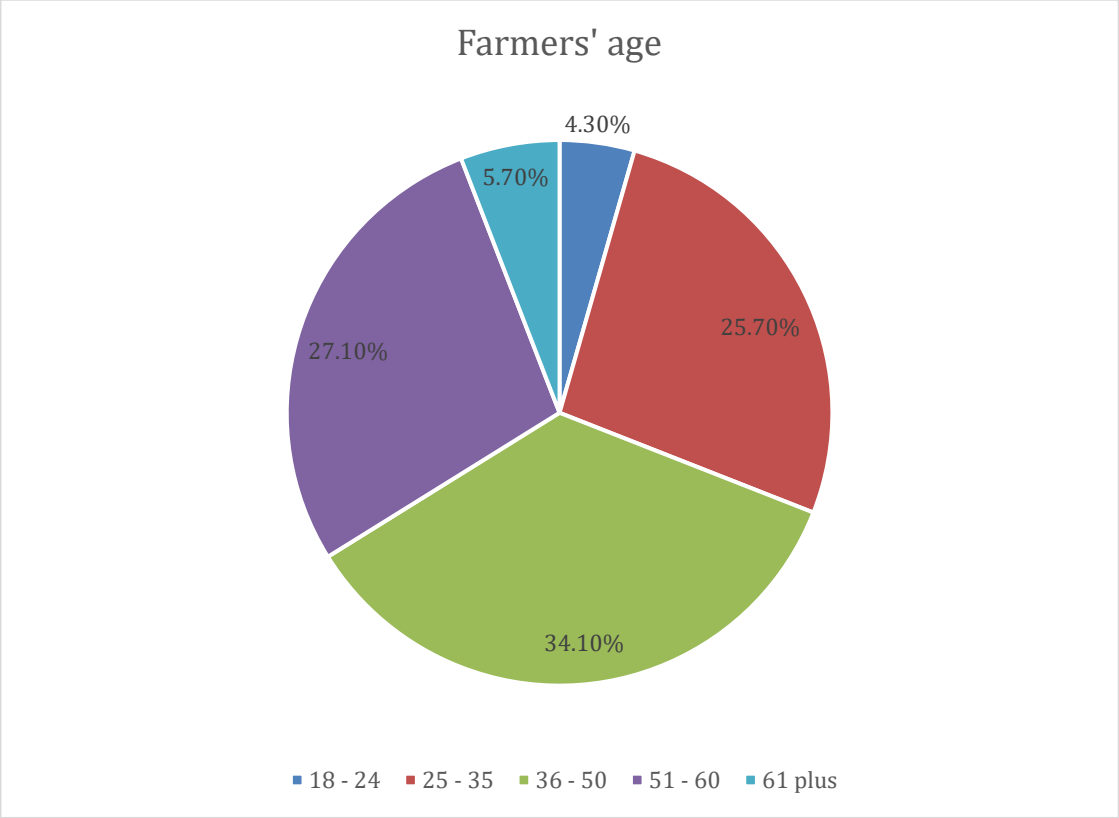

Figure 4.1 Farmers' age

The farm type is predominantly mixed, practised by 41.4% of the farmers. It is followed by row crop production practised by 28.6% of the farmers, livestock practised by 21.4% of the farmers, and the least type of farming is speciality crops practised by 8.6% of the farmers, as illustrated in Figure 4.2.

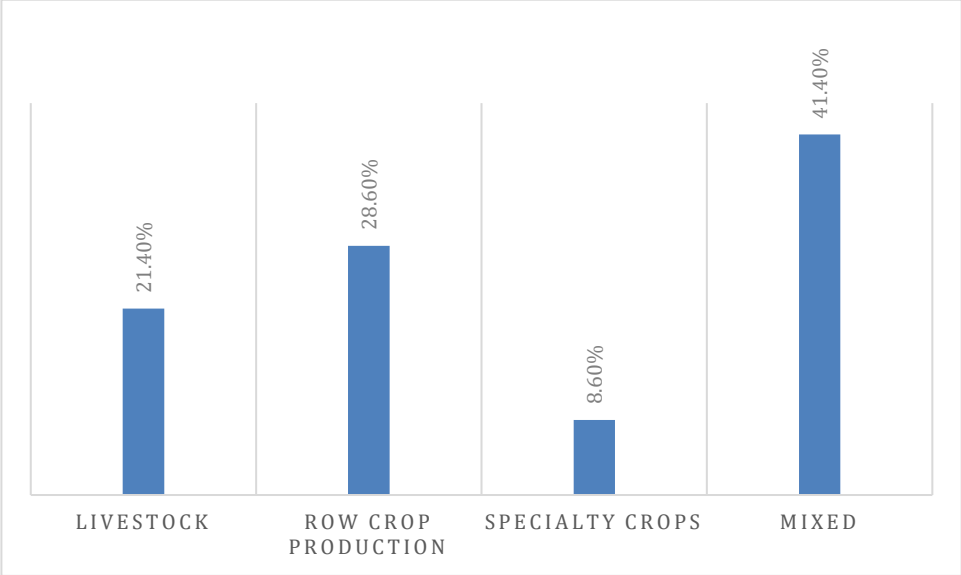

Figure 4.2: Farm type

Figure 4.3 shows the distribution of farmers by their education level. Farmers have an education level that is evenly spread among all levels of education. There is a high percentage of farmers with college or university qualifications and the lowest number of farmers are those with a primary school qualification. Of the farmers, 18.6% have a primary school education level, 18.6% have a secondary school level, 27.1% have a high school level, and 35.7% have a college or university level.

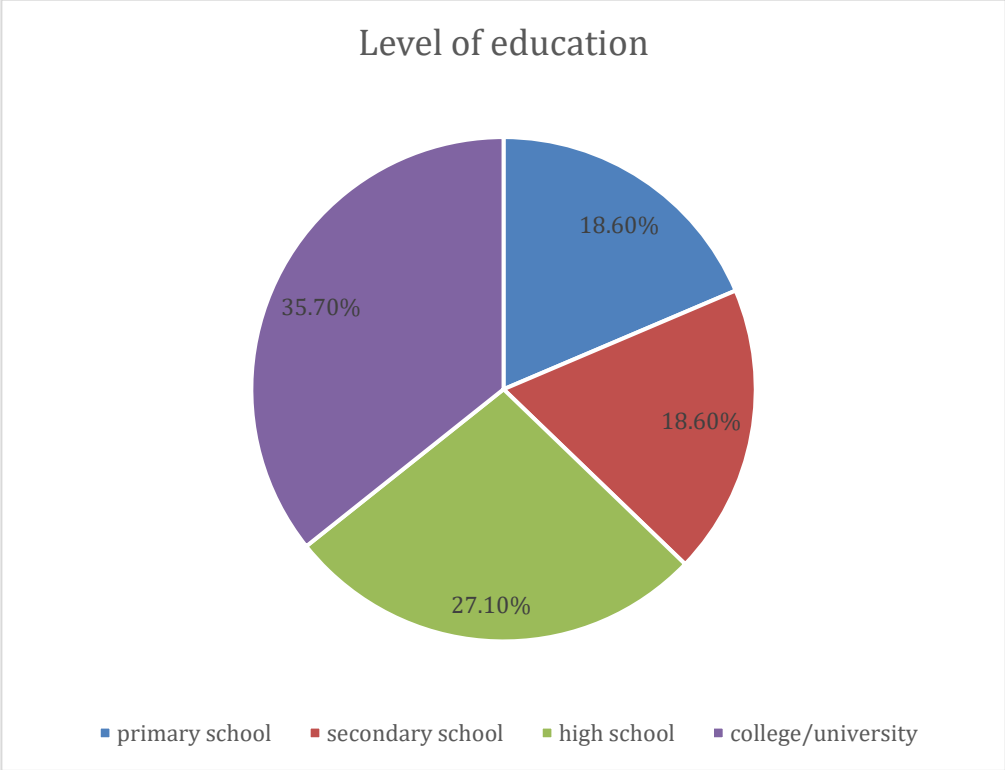

Figure 4.3: Distribution of farmers by education level

In summary of the farmers' characteristics, most farmers were between the ages of 36 and 50, most practised farming for 10 to 20 years, and the common practice was mixed farming. Most of the farmers' highest qualification was the university or college qualification and occupied 10 and more acres of land.

4.2 Farm performance and operations

4.2.1 Farm performance

Farmers could evaluate their farms' performance for the last two years. Of the total respondents, the most percentage results from farmers who believe their businesses slightly improved in the last two years and, in general, over 50% of respondents believe their farms are performing well. The results were as follows, as illustrated in Table 4.4, 15.7% of the farmers believed that their farms declined significantly, 8.6% believed that their farms declined slightly, 20% stated that their farms remained the same, 34.3% believed that their farms improved slightly, and 21.4% stated that their farms improved significantly.

Table 4.4: Farm performance in the last 24 months

		Frequency	Percent
Valid	declined significantly	11	15.7
	declined slightly	6	8.6
	remained the same	14	20.0
	improved slightly	24	34.3
	improved significantly	15	21.4
	Total	70	100.0

4.2.2 Farm operations

While assessing the farm operations, external financing sources of those farms were also established, and it was evident that the highest percentage is of farms that are financed by the owners with 52.9%. This could still be linked to the factor of problems encountered while accessing loans from commercial banks or farmers' lack of knowledge. Only 7.1% of farmers stated that their farms are financed by banks. According to Table 4.5, self is the highest percentage with 52.9%, family and friends come second with 22.9%, money lenders and non-credit institutions come third both with 8.6%, and commercial banks come last with only 7.1%.

Table 4.5: Source of external financing the farm

		Frequency	Percent
Valid	Self	37	52.9
	money lender	6	8.6
	non-bank credit institution	6	8.6
	commercial bank	5	7.1
	family/friends	16	22.9
	Total	70	100.0

According to Table 4.6, most farmers with less than 10 years of farming have friends and family as their source of finance while most farmers with more than 10 years finance their operation. The number of years of farming, however, does not constitute a barrier to get financing from the commercial banks. Of the 7% of the total farmers whose sources are commercial banks, 3% of farmers that have less than 10 years of

farming could secure such funding, and 3% of farmers that have more than 40 years of farmers could also secure such funding.

Table 4.6: Cross-tabulation of years of farming against source of financing

		Please select the sources of external financing you have					
		Self	money lender	non-bank credit institution	commercial bank	family/friends	Total
years of farming	<10	4%	4%	3%	3%	16%	30%
	11 - 20	16%	4%	3%	1%	3%	27%
	21 -30	6%	0%	1%	0%	3%	10%
	31 - 40	10%	0%	1%	0%	1%	13%
	>40	17%	0%	0%	3%	0%	20%
Total		53%	9%	9%	7%	23%	100%

Education, however, might be the greatest influence of the financing sources chosen by farmers. Farmers with a higher qualification might understand the long procedures of loan applications more than farmers with a lower education level. They may also have more information than farmers with a lower education level. Of the 7% of farmers who are financed by the commercial banks, 4.2% have a college or university qualification, as illustrated in Table 4.7. No farmers with the lowest qualification, primary school, have financing from commercial banks or any other financing other than self-financing.

Table 4.7: Cross-tabulation of level of education against source of financing

		Please select the sources of external financing you have					
		self	money lender	non-bank credit institution	commercial bank	family/friends	Total
level of education	primary school	19%	0%	0%	0%	0%	19%
	secondary school	13%	0%	1%	1.4%	3%	19%
	high school	13%	1%	4%	1.4%	7%	27%
	college/university	9%	7%	3%	4.2%	13%	36%
Total		53%	9%	9%	7%	23%	100%

The other critical factor is knowledge transfer. A good ecosystem for knowledge transfer helps farmers to create value for their farms. It is a strong support system and intervention to help farmers grow and succeed. According to Figure 4.4, farmers use

farmers' groups as the highest source of knowledge sharing. It is a sign that they work well together to build each other. The platform mostly used is the farmers' group used by 34.3% of the farmers, followed by media/TV used by 32.9% of the farmers, then extension specialists used by 27.1% of the farmers, and lastly, family members or neighbours used by 5.7% of the farmers.

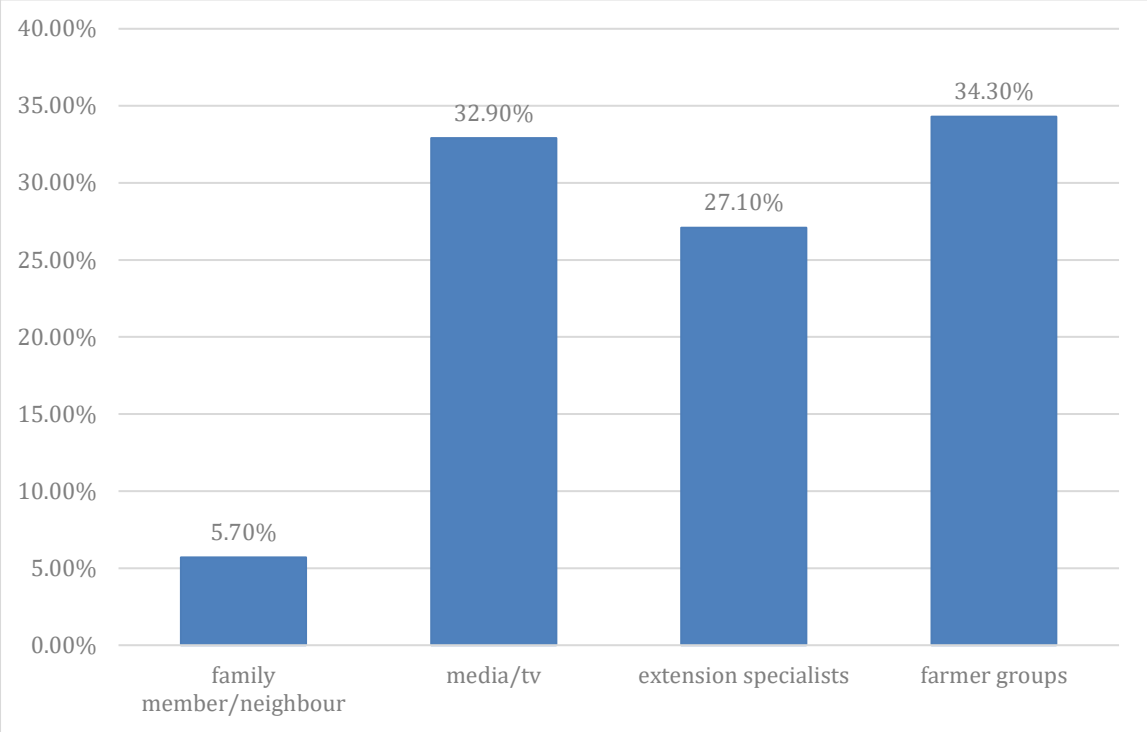

Figure 4.4: Methods of agricultural knowledge transfer

Research and innovation are major components of success in farming but due to the poor performance of the sector, there are different options to teach farmers different innovations and ways to improve their output. Open innovation is promoted because it is a cheaper way to be innovative and different ideas combine to find more competitive ways and innovations. The study found that 37.1% of farmers use one-on-one with an expert, 35.7% use group learning while 27.1% use self-learning, as illustrated in Figure 4.5. Even though there is still a bigger percentage of farmers who prefer to incur most expenses of consulting an expert, there also is a high percentage of farmers who understand the importance of group learning.

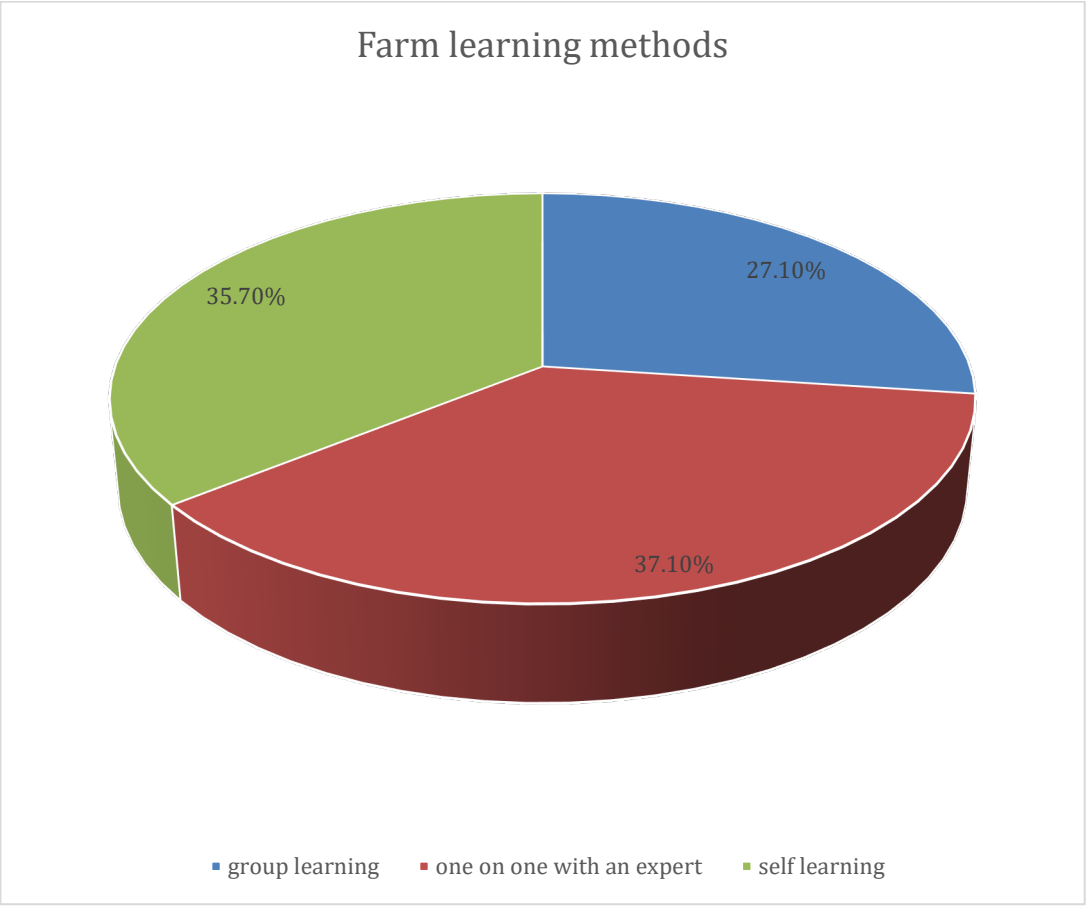

Figure 4.5: Farm learning method

- **Technology**

When asked whether they practised the important operations shown in Figure 4.6, 57.2% of farmers agreed (agree and strongly agree) that they research new farming methods or technology online, and 42.8% stated that they do not. Due to climate change, traditional farming does not yield enough production. Farming, therefore, involves different technologies or methods that withstand the distractions brought by climate change and further can increase yield.

Even though over 50% seem to be in a better position, there is still a high percentage of farmers that do not use technology for their researches. This could be due to lack of access to technology or lack of knowledge of how to use the important tools available. Furthermore, researching new technologies or methods means that farmers

would desire to acquire such items. Most farms might not have enough capital to acquire such, as 52.9% of the farmers are self-financing the business, 22.9% are financing through funds from family and friends, and only 7% are financing it through a loan from commercial banks. It, therefore, might not be useful for farmers to research items they cannot afford.

- **Off-farm income**

Of the farmers, 64.3% derive off-farm income while 35.7% do not, as per Figure 4.6. Off-farm income ensures that farmers have a constant income. Diversification helps farmers not to depend solely on their primary product and, therefore, a huge percentage of farmers have diversified to ensure that their farms increase their income. Table 4.8 shows that 41% (11%, 7%, 19% and 4%) of the farmers who selected agree and strongly agree that their farms derive off-farm income also stated that their farms showed some improvement. Even though off-farm income cannot be the only source of the farms' performance, it has its share of contribution towards the performance. It, however, should be noted that 11% of the farmers whose farms derive off-farm income did not state any improvement, and 11% stated that they experienced a decline. Off-farm income, therefore, must be supplemented by other critical factors to improve performance.

Table 4.8 Cross-tabulation of farm performance and off-farm income

		My farm derives some off-farm income				
		strongly disagree	disagree	Agree	Agree strongly	Total
Farm performance	declined significantly	4%	1%	9%	1%	16%
	declined slightly	0%	7%	1%	0%	9%
	remained the same	0%	9%	11%	0%	20%
	improved slightly	3%	9%	19%	4%	34%
	improved significantly	1%	1%	11%	7%	21%
Total		9%	27%	51%	13%	100%

- **Innovations**

In a farm, operations that are done manually take time and is costly. Farmers must find innovative machinery, computers, programmes, and ways to improve productivity.

A high percentage of farmers use some method to increase productivity. As per Figure 4.6, 71.4% of farms have innovations developed to increase productivity while 28.8% do not.

- **Access to market information**

Access to market information helps farmers to know lucrative markets for their products, the quantity and quality required by such markets. It, therefore, is a critical factor to thrive in business. Figure 4.6 shows that 58.7% of the farmers have access to market information while 41.4% do not. The 41.4% of farmers are not well-informed on what is happening in the markets and it hinders their knowledge of market prices, demanded products, quality, and quantity.

- **Market access**

Market accessibility is also vital to farmers. It allows them to sell their products at a reasonable price and in big quantities. Farmers who easily access markets through technology or have proper infrastructures to reach their markets are at a better chance to succeed than those who pay costly prices to access the markets or do not have access at all. Farmers who agree and those that strongly agree that they easily access markets sum to 47.1%, and 52.9% stated that they do not. A higher percentage of farmers still do not have easy access to the markets. This is due to Lesotho's poor infrastructure, fewer markets available locally, less knowledge of how to access international markets, and limited technology used to market products. The other factor is caused by the competition farmers get in big markets from South African farmers' imported products.

- **Government policies and regulations**

Policies that have many barriers to farmers' success hinder sustainability. Favourable policies, on the other hand, promote local products, protects farmers, and help them grow. According to Figure 4.6, 51.5% of farmers agree that government policies promote their farming activities, and 48.6% stated that government policies do not promote their farm activities. This could be brought by the policies that encourage importing food. The policy does not impose any restrictions on imports and does not

tax them. Farmers, therefore, compete with South African farmers who produce in large quantities and have the advantage of large farms and economies of scale.

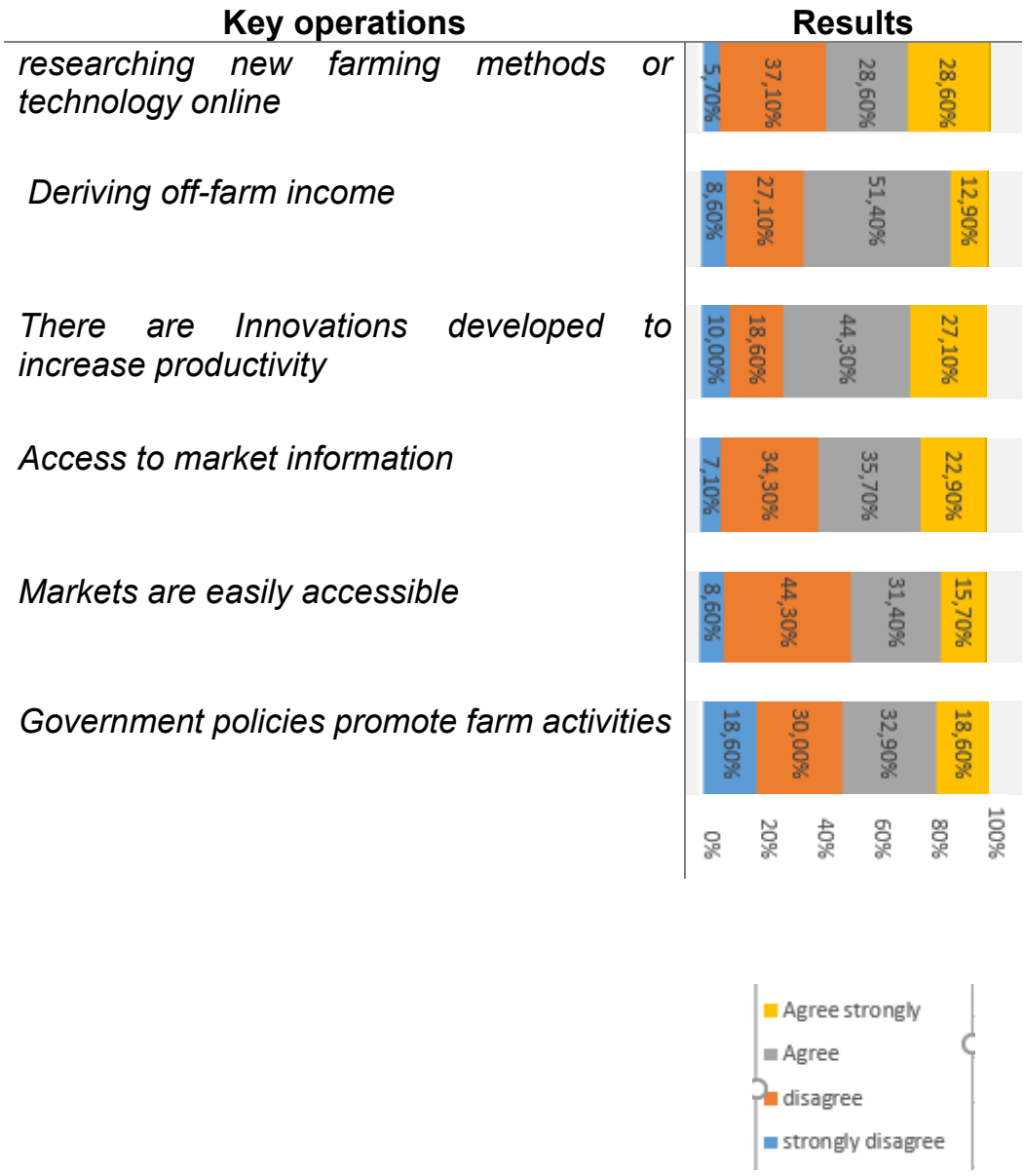

Figure 4.6: Key success operations practiced at farms

In summary of farm performance and operations, most farmers stated that their farms' performances improved. The importance of financial capital was explained in the literature and farmers could own expensive production machinery that will efficiently do the job. A huge percentage of farmers, however, stated that they finance their

business with their money. This finding confirms what the literature stated. Reardon et al. (1995:5) explained that in most African countries, farmers fail to secure credit from commercial banks and successful farmers, therefore, are those that can use their sources to invest in their farms. Even though most farmers can finance themselves, farmers still need external financing, especially for expensive machinery. Results showed that a few of those farmers financed by commercial banks have either a college or university degree, which shows that farmers with lower qualifications need training on how to source finances.

Most farmers also stated that they get their R&D information through one-on-one interaction with experts. They further stated that they use innovative ways to be efficient and improve output and furthermore, research new methods of technologies that will improve their production. To complement their income, most farmers stated that they derive off-farm income. Even though most farmers stated that they have access to the market information, majority, however, also stated that they could not access such markets. Most of the success factors seem to be practised in most farms; however, farmers still must strengthen their business by using other critical factors to maximise their profits and success. They also have to find alternative solutions to improve factors such as access to the market.

4.3 Farming skills

Farmers must have appropriate characteristics and skills to deal with problems, identify opportunities and risks, and know the right time and way to act. Farmers who have more of the critical skills are at a better chance to succeed than farmers who do not. When asked about the importance of the skills, as shown in Figure 4.7, a high percentage of farmers specified that the skills are all critical to the farms' success. Negotiating was selected as important by 90% of the farmers, having a vision followed with 88.6%, self-management and persuasiveness, and management control followed with 82.10%. The rest still has a high percentage and the lowest being international orientation in that only 58.6% of the farmers specified that it is important. Farmers must start exploring and being international market-oriented if they want to access markets other than the local ones.

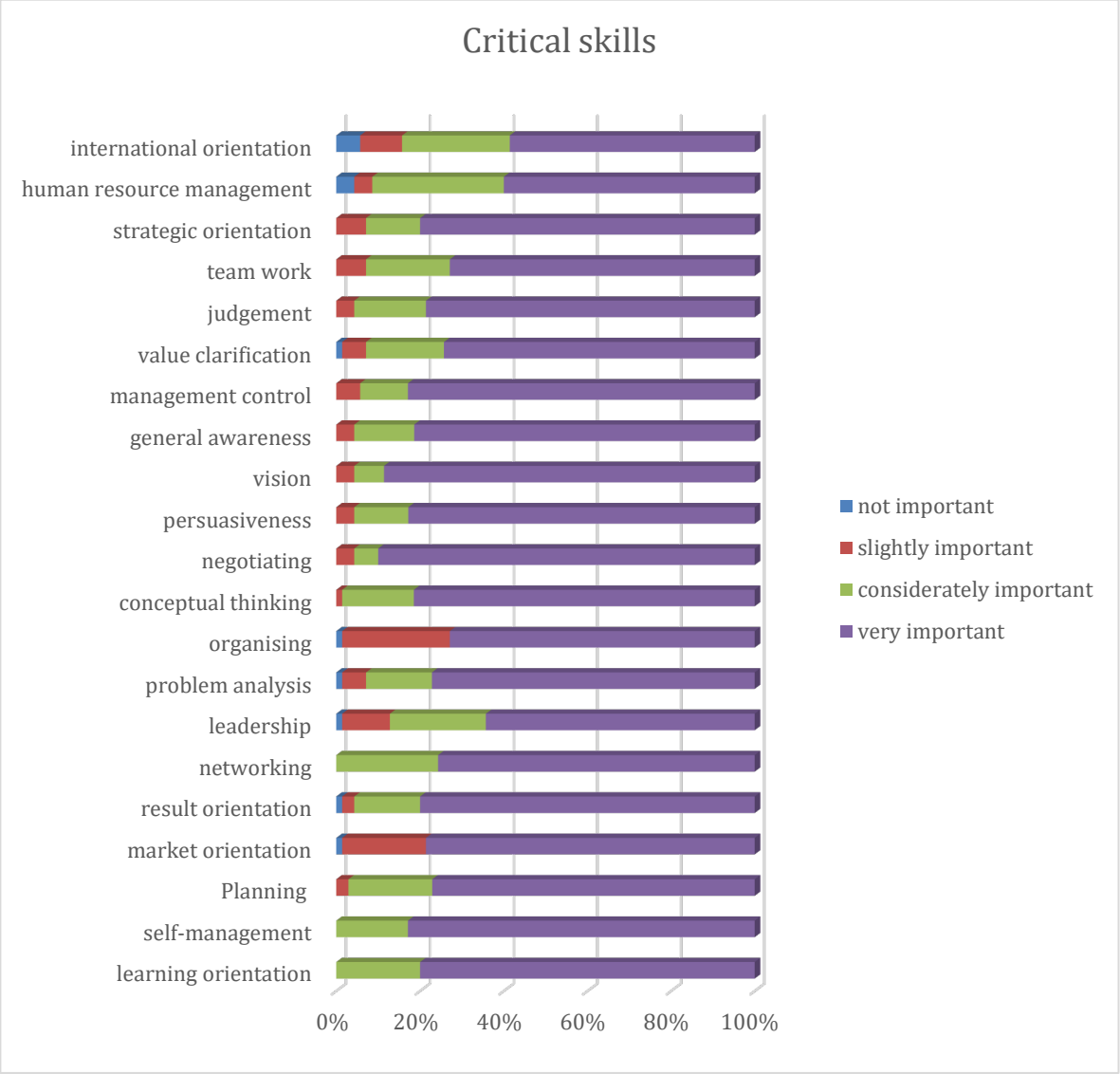

Figure 4.7 Critical skills to farmers' success

While self-rating themselves as illustrated in Figure 4.7, 88.6% of farmers specified that they rate high on vision, 84.3% rated themselves high on learning orientation and self-management, and 80% have rated high on general awareness. The lowest rating is international orientation that only 30% rated themselves high, 42.3% medium, and 27.1% as low. On the low rating, international orientation has the highest percentage followed by human resource rated by 12.9% farmers.

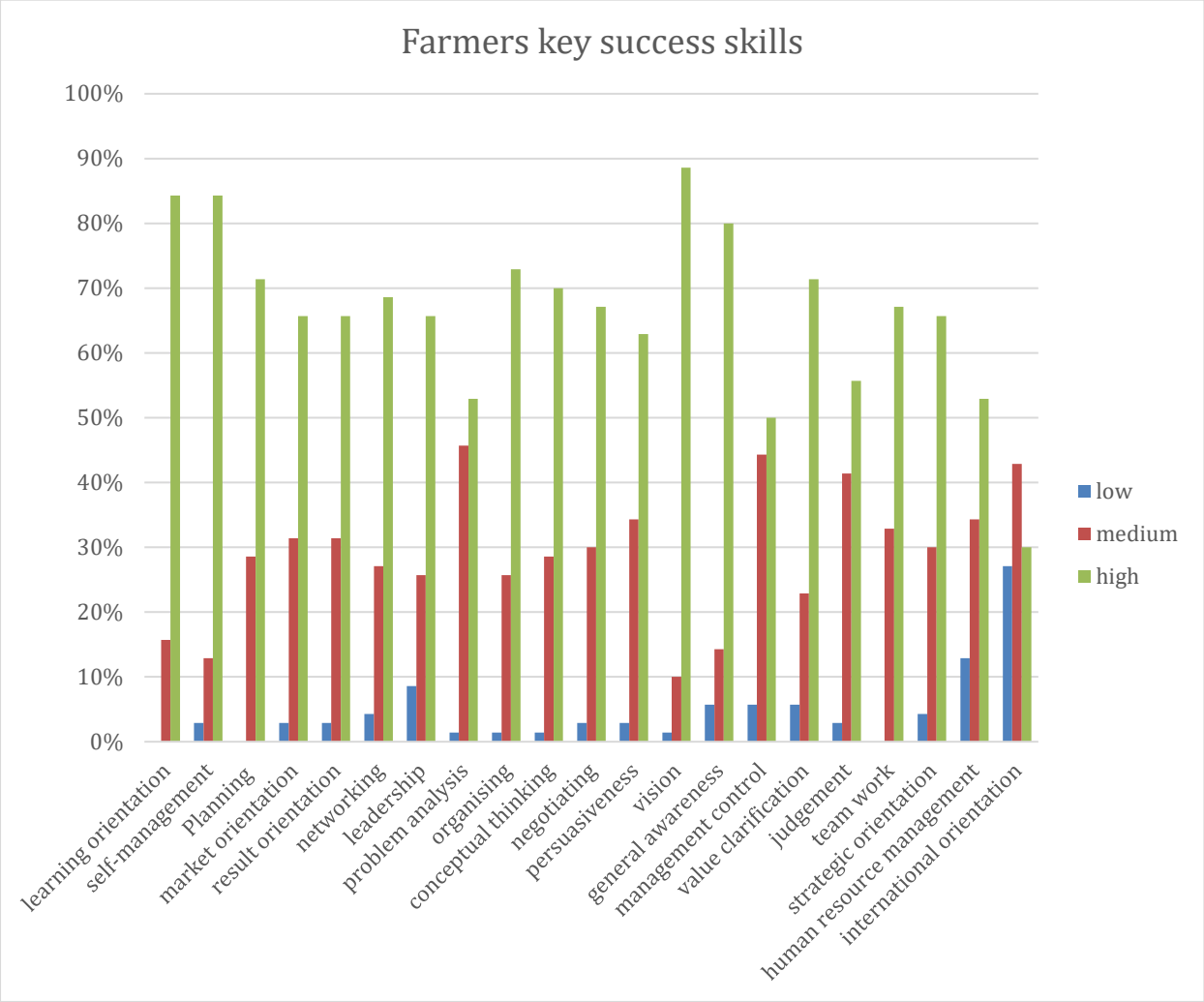

Figure 4.8: Farmers' self-perceived critical skills

4.4 Critical success factors

Table 4.9 and Figure 4.9 summarises the participants on each critical success factor studied. Most of the factors were understood to be critical by most participants. The farmers, on average, emphasised the importance (selected very important) of the following: the first is knowledge-sharing among farmers with 78.6% of the farmers stating that it is critical, the second is access to information with 77.1%, capital and market access come in third with 75.7%, financial performance follows with 71.4%, followed by infrastructure with 65.7%, government policies have 64.3%, access to R&D has 58.6%, innovation has 51.4%, technology has 47.1%, and lastly, only 45.7%

of the farmers selected off-farm income as a critical success factor. The survey substantiates the literature reviews' finding of critical success factors.

Table 4.9: Critical success factors

		Technology	Market access	off farm income	Innovation	financial performance	management skills and entrepreneurship
Valid	not important	1.40%	1.40%	2.90%	4.30%	4.30%	2.90%
	slightly important	20%	7.10%	24.30%	21.40%	4.30%	2.90%
	considerately important	31.40%	15.70%	27.10%	22.90%	20%	17.10%
	very important	47.10%	75.70%	45.70%	51.40%	71.40%	77.10%

		Capital	knowledge sharing amongst farmers	government rules and policies	Infrastructure	access to information	access to R&D
Valid	not important	1.40%	1.40%	4.30%	8.60%	1.40%	1.40%
	slightly important	4.30%	7.10%	10%	5.70%	4.30%	8.60%
	considerately important	18.60%	12.90%	21.40%	20%	17.10%	31.40%
	very important	75.70%	78.60%	64.30%	65.70%	77.10%	58.60%

The factors that most farmers stated that are not very important are off-farm income and technology. Off-farm income is the most important factor as per the literature because diversifying into other activities helps the farm to obtaining income from other sources instead of depending on one source of income. Off-farm income supplements income derived from the core business. Technology is also a very important factor. It is the huge driver of doing business in this globalised and digitalised era. Through the literature, it was established that technology simplifies work, promotes efficiency and effectiveness, and increases output.

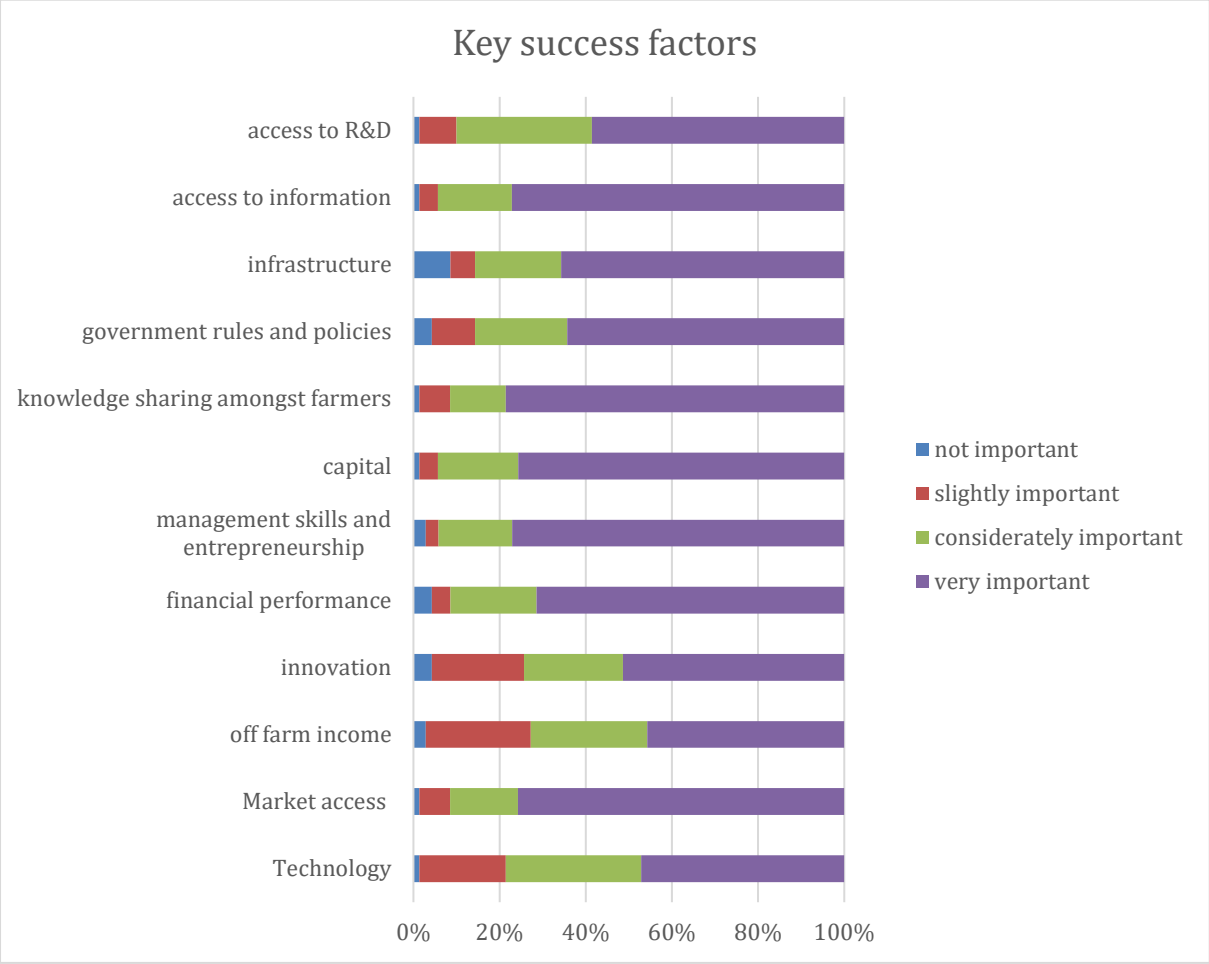

Figure 4.9: Key success factors

4.5 Conclusion

This study reinforced the importance of key success factors and critical skills. The results indicate that most farmers are aware of such factors and skills and agree that they are key to their farms' success. Most farmers also practice and use these factors in their daily operations because they understand their importance to their farms' growth and sustainability.

Most farmers, however, seem not to understand the concept of off-farm income, as only 45.7% of farmers stated that it is a critical success factor. It is a cause of concern because the literature fully clarifies that off-farm is a key and critical factor. To diversify into other income-generating activities other than the main operations helps farmers not to depend on a single income only. It could help the farmer to sustain hard times

such as drought, unexpected reduction in yield or lack of markets. Off-farm income would then sustain and supplement the shortage encountered from the main product. Only 47.10% of the farmers stated that technology is very important. The finding also contradicts the literature, which stated that for farmers to be competitive, they must keep searching for new technologies that will assist them to improve efficiency and increase output.

Most farmers also do not comprehend the importance of being internationally-oriented. There is limited knowledge of and interest in the importance of penetrating the international markets and its advantages such as competitive prices. The last finding is that farmers are limited by the size of their land due to factors such as the limited arable land available for production and laws of land ownership are restricting.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This study's main objective was to determine the critical success factors for medium- and large-scale farmers in Lesotho. This was done through the literature review from other studies, and further research was done by accessing farmers' viewpoint on the success factors. The critical success factors were then identified through both methods and validated. This chapter, therefore, will start by stating the findings of the study, giving a summary and conclusion based on those findings. The study will further give recommendations and limitations of the study.

5.2 Findings

The findings from this study are useful to farmers and their principal staff. The value created by the study includes helping farmers in Lesotho to understand the type of operations they must prioritise. It further helps identify the critical skills that will help the farmers to fully comprehend and use those factors that would bring success to their businesses. The combination of the identified skills and using the identified factors would assist the farmers with effective risks mitigations, to fully understand their business operations and eliminate costly operations, and to concentrate on improving the farms' performance.

The literature review highlighted that the critical success factors identified are capital, technology, off-farm income received through diversification, market access, technology, innovation, financial performance, ecosystems that enable knowledge-sharing among farmers, government policies and regulations, and lastly, good management and leadership skills. Since management and leadership skills are more on the farmers' abilities, and there are plenty of them, there was a further review of which skills are considered critical, especially for farmers, and the following were identified through the literature:

Table 5.1: Critical entrepreneurial skills and competencies for farmers

Learning orientation	Problem analysis	Management control
Self-management	Organising	Value clarification
Planning	Conceptual thinking	Judgement
Market orientation	Negotiating	Teamwork
Result orientation	Persuasiveness	Strategic orientation
Networking	Vision	Human resource management
Leadership	General awareness	International orientation

The results of the study confirmed the importance of the critical success factors such as knowledge-sharing among farmers, access to information, capital, market access, financial performance, infrastructure, government policies and regulations, access to R&D, and innovation. Most of the farmers, however, did not comprehend the importance of off-farm income and diversification, as only 45.7% of the farmers selected off-farm income as a critical success factor. Most farmers believe that off-farm income is important but not too critical, even though 64.3% of the farmers stated that they derive off-farm income. Most also did not think technology is a critical factor. Only 47.1% of farmers find technology to be critical. This is concerning, as technology is a driving force for success in any business.

While further assessment of whether the farmers not only know the critical success factors but practice them in their daily operations, it was confirmed that most use them in the day-to-day operations of their business. Using technology or researching new improved ways of operations is the only factor that the farmers are lacking, and technology is critical in this era where there is a growing introduction of digitalisation due to the fourth industrial revolution.

Farmers also acknowledged that management and leadership skills are critical success factors. The skills and competencies in Table 5.1 were rated by most farmers as vital. Their self-assessment of such skills showed that most have such skills, the only lacking skills were human resource management and being internationally-oriented. It is concerning that farmers believe that human resource management is not a critical skill necessary for success. Without employees, there could not be any

operations on their farms, and valuing and motivating such employees promotes effectiveness and consequently, improves production. According to the literature, Almedia and Zylbersztajn (2017:51) confirm that people management is a critical skill, it adds value to the farm and furthermore, investing in skilled labour is a good management strategy to ensure efficiency, productiveness, and success.

The results of this study are generally important to farmers. While a farmer's success is brought by the combination of these factors, each farmer must consider the combination of factors that creates success for their operation or benchmark on a combination that works for other farmers with similar operations.

5.3 Recommendations

The following are recommendations of how farming could be improved further in Lesotho. Most of the critical success factors include using technology, using automation for efficiency, and more innovations to improve production. The factors require substantial capital. It, therefore, is recommended that farmers must have more encouragement to consider financing from commercial banks. Commercial banks require extensive proof from any business that it can afford to repay its loan. Farmers, therefore, must be encouraged to have proper business plans, proper records of their financial statements, any form of collateral and other requirements.

Even though the government policy towards no tax and relaxed restrictions on imports is to improve food security in the country, it is recommended that local farmers must be given priority first in purchasing agricultural products. The local retail businesses must promote all local products first and supplement them with imported ones. The market rates and process should be competitive for the local market to reduce sales in informal markets.

The government should make efforts to collect and make available data of all farmers by their categories, products, and their returns. The government stated that it must improve commercial farming but it can only estimate that they constitute around 10% of total farmers. It would be practical if they have data on the activities of those commercial farmers, their successes and setbacks. It would assist the government to

make informed decisions on policies, to monitor these farmers, and further assist them to grow. Having formal data on the farmers might even assist them to get opportunities such as funding, investors, and partnering, as there will be an official database on which to find them.

Farmers must be encouraged to cooperate even more to have a huge impact. They should research, transfer knowledge and, most importantly, build a value chain to market or advertise their products collectively, and have and use standard market prices to sell their products. It will also encourage rural farmers to collectively incur costs to access the formal markets. Through these co-operations, they could be encouraged to use technologies that will benefit their farms and furthermore, encourage them to use sources such as commercial banks for finance. Merging might also help them in saving costs, as it could lead to economies of scale.

Lesotho's tourism industry is growing. The country is attractive because of its terrain, winter snowfall attracts snow and ski lovers, and it has a rich culture. Tourists go into rural areas to experience the culture. They are fascinated by horses and donkey rides, traditional food, and mountain hiking. It, therefore, is recommended that farmers should consider disruptive innovations and introduce farm tourism. They could introduce recreation activities and accommodation. Some recreation activities could be horse and donkey riding, farm demonstrations, traditional food restaurants (offer farm-grown food and locally brewed beer), provide bird watch places, farm occasion places such as farm wedding gardens, recreation parks, and or game reserves.

Accommodation could range from:

- registering their homes to Airbnb for rental;
- offer Basotho traditional bed and breakfast;
- rent out their backyards for campsites (offer traditional dances and other traditional entertainment); and or
- offer their traditional huts as backpackers (offer traditional dances and other traditional entertainment).

Not only will this initiative further promote tourism, but it will also boost their income and the economy. Phelan (2014:49) elaborated that farm tourism has three functions as stated below:

1. Spatial and environmental
   (a) It enhances the protection of the environment and nature
   (b) It helps with the development of the local infrastructure
   (c) Promotes proper resource utilisation
   (d) Helps to stop outwards migration from rural areas
2. Economic
   (a) Income generated from communes
   (b) Promoting sociocultural development
   (c) Boosting the economy
   (d) Creating an additional source of income and workplace
3. Socio-psychological
   (a) Farmers and the community acquire new skills
   (b) Education and revival of the culture

Farmers have only thought about ploughing, harvesting, and selling their products raw. Even when they struggle to get a market for their products, they persist in selling them raw. Raw products, especially crops, have a short lifespan. If not sold within a week or so after being harvested, they deteriorate and rot causing farmers a major loss. It, therefore, is recommended that farmers should enhance the value and shelve life of their products. They should add value to their products by processing the raw materials and packaging them. They should process their products into different finished goods. Examples of such are dried vegetables, dried fruits, canned fruits, goat cheese, jam, flour milling, maize meal, wine, frozen cut vegetables, canned vegetable, popcorn, corn starch, packed meat, organic products, biltong, and processed and packaged milk. They should brand their products so that they can have an identity.

Not only will it increase the value to their products and increase shelve life, but they could advertise their brands and sell different products at different prices. By so doing, they could also compete with the imported competitors' products in retail shops. Branding is a vital strategy for success, as supported by Louw et al. (2000:11) who

stated that branding helps advertising products and instils them in the mind of the consumer. It is also critical for introducing farmers emerging in the market.

In the literature, Louw et al. (2000:10) specified that integration with banks, farmers, and retailers promotes much success. Farmers collaborate and approach local commercial banks for financing schemes with reasonable interest rates especially for farmers. They then also partner with retailers who would be the sole distributors and sellers of their products. The partnership between the three ensures that farmers have a market, retailers get exclusive rights of the farmers' products, and banks finance the farmers, have farmers as their clients and using their services and furthermore, have a guarantee that their loans would be paid. The integration is recommended for Lesotho farmers and it would ensure that different parties to this collaboration benefit in the end. Louw et al. further confirmed that private partnership without the government element could improve farmers and instil a culture of building each other.

Most of the farmers are engaged in mixed-product farming. They then sell in bulk to available sellers. It is recommended that they should consider specialising in one of the best-quality and rare products they have that could have a huge market. Specialising, unlike selling bulk, helps improve the quality of the product to enhance the product's value instead of concentrating on many products. Farmers should add the value of quality, good services, and produce steady quantities that would meet their demand. Bamberry et al. (1995:15) confirmed that the best success strategy is being able to recognise the market opportunity that realises a niche market so that farmers could specialise instead of selling in bulk.

Business ecosystems, according to Yun et al. (2017:809), are a network of interconnected companies providing a platform to interaction and incorporation to enhance value through innovation. Technology is also a big driver of marketing, reaching inaccessible areas, communication and interaction. Farmers, therefore, are encouraged to build an ecosystem working together through their National Farmers Union to invest in an application that would enable farmers to market and sell their product regardless of how remote farmers might be. The application should be a supply chain information system where farmers could upload their profiles with the names of products, quantity and location. They should then rent trucks to deliver their

products to the buyers around the country. Buyers who use it could access any products they need and the application would select nearer farmers and alert trucks for joint pick-ups. The process would give urban farmers and rural farmers a similar and fair exposure to accessing the market and help buyers buy products using their computers and phones saving them time. Retailers, therefore, would get the quantity they need because the application would select products from different farmers and deliver in bulk.

5.4 Limitations of the study

The limitations of the study encountered during the research are the following:

- Only a few districts were sampled; therefore, the study is limited and could not represent the entire country of Lesotho or the entire region.
- The sample size was not large enough to generalise the findings, and the total population is unknown.
- Lesotho has limited data on farmers' total population, and information about them is not available or publicised.

5.5 Areas for further research

The research established that a high percentage of farmers self-finance their operations. The literature confirmed that most of the African countries' farmers who succeed could afford to finance their farms. Farming assets are expensive and necessary if farmers want to have a competitive establishment. It, therefore, is necessary to find realistic ways that farmers could secure finance from financial institutions. Areas of further research could concentrate on studying developing countries whose conditions are comparable to Lesotho, and whose farmers have a workable relationship between commercial banks. The study should analyse what the relationships are, how they work, and whether some could be adopted in Lesotho.

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ANNEXURES

Annex 1: Participant consent form

RESEARCH STUDY INFORMATION LEAFLET AND CONSENT FORM

DATE: *01 September 2019*

TITLE OF THE RESEARCH PROJECT

Critical success factors for medium and large-scale farmers in Lesotho

PRINCIPLE INVESTIGATOR / RESEARCHER(S) NAME(S) AND CONTACT NUMBER(S):

Thabang Matsoetlane *2015347491* *Contacts: +266 63130806*

FACULTY AND DEPARTMENT:

Economic and Management Science

UFS Business School

STUDY LEADER(S) NAME AND CONTACT NUMBER:

Mr. Mark Peters

+27 82 311 9118

WHAT IS THE AIM / PURPOSE OF THE STUDY?

To determine the essential success factors for medium and large-scale farmers in Lesotho

WHO IS DOING THE RESEARCH?

The research is done by Thabang Matsoetlane, an MBA student and the reason for conducting the research is that it is part of the MBA qualification requirement.

WHY ARE YOU INVITED TO TAKE PART IN THIS RESEARCH PROJECT?

100 participants are selected from ministry of agriculture and Bureau of statistic list of farmers. Farmers meeting large and medium scale farming are selected and the selected farmers are those on areas which are accessible to the researcher.

WHAT IS THE NATURE OF PARTICIPATION IN THIS STUDY?

The study involves questionnaires. It includes general questions about the farm and questions which require a farmer's opinion on critical success factors. The questionnaires are Likert format and yes/no format. The maximum time it can take is approximately 10 minutes.

PARTICIPATION, BENEFITS AND CONFIDENTIALITY

Your participation in the study is voluntary and you may withdraw at any time. The results of the study will not be published in the public domain and there are no direct benefits for you in participating in the study. Your answers will be kept confidential and hard copies of responses will be kept in a locked cabinet, with limited access. Electronic data will be stored on a password-protected computer. Your participation may result in the loss of work or study time for participation. The interview/questionnaire will take approximately **7minutes** to complete.

Thank you for taking time to read this information sheet and for participating in this study.

Annex 2: Consent to participate in this study

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet. I have had sufficient opportunity to ask questions and am prepared to participate in the study. I understand that my participation is voluntary and that I am free to withdraw at any time without penalty. I am aware that the findings of this study will be anonymously processed into a research report, journal publications and/or conference proceedings.

I agree to the recording of the *questionnaire.*

I have received a signed copy of the informed consent agreement.

Full Name of Participant: _____

Signature of Participant: _____ Date: _____

Full Name(s) of Researcher(s): _____

Signature of Researcher: _____ Date: _____

Annex 3: Questionnaire

Questionnaire

Name: _____

Critical Success Factors for Medium and Large-Scale Farmers in Lesotho Questionnaire

NOTICE: All responses are confidential. No third parties whether governmental, commercial, or private will be given response data. Please make marks distinct and print clearly, where appropriate, so that all your responses are interpreted accurately.

1. How many years of farming do you have?

____ <10

____ 10-20

____ 21-30

____ 31-40

____ >40

2. What is the total number of acres you currently farm?

_____ 0-1

_____ 2-3

_____ 4-6

_____ 7-9

_____ 10+

3. What age range do you fall into?

_____ 18-24

_____ 25-35

_____ 36-50

_____ 51-60

_____ 61+

4. What would best describe your current farming system?

____ Livestock

____ Row Crop Production

____ Specialty Crops

____ Mixed

5. What is the highest level of education you have completed?

____ Primary School

____ Secondary school

____ High School

____ College/University

6. Please evaluate the development of your business over the last 24 months.

_____Declined significantly

_____Declined somewhat

_____Remained the same

_____Improved somewhat

_____Improved significantly

7. Please select the sources of external financing you have:

____ Self

____ Money lender

____ Non-bank credit institution

____ Commercial bank

____ Leasing company

____ Family/friends

____Other sources (specify) _____

8. What is the main method for agricultural knowledge transfer to your operation? *(tick one)*

____ Family member/ neighbour

____ Media (TV, Internet, Radio, etc)

____ Extension specialist(s)

____ Farmer groups/ Field Days

9. What type of learning engages you most in terms of agricultural practice adoption?

(Please circle one)

A. Group learning

B. One on one with an expert

C. Self-learning

10. Which of the following is practiced at your farm?

(tick one response for each item)	Strongly Disagree	Disagree	Agree	Agree Strongly
Question	**1**	**2**	**3**	**4**
I research new farming methods or technology on-line				
My farm derives some off-farm income				
My farm has innovations developed for increasing operations output or productivity				
I have access to market information				
Markets are easily accessible				
Government policies promote my farm activities				

11. On a scale from 1 to 4, which of the following factors is most important to your success as a farmer (tick one response for each item.)

1. Not Important
2. Slightly Important
3. Moderately Important
4. Very Important

Factors	1	2	3	4
Latest technology				
Market access				
Off farm income				
Innovation				

Factors	**1**	**2**	**3**	**4**
Financial performance				
Management skills and entrepreneurship				
Capital				
Knowledge sharing amongst farmers				
Government regulations and policies				
Infrastructure (e.g. access to roads)				
Access to information				
Access to research and Development				

12. On a scale from 1 to 4, which of the following skills are most important to your success as a farmer (Circle one response for each item.)

1. Not Important
2. Slightly Important
3. Moderately Important
4. Very Important

Skills	**rating**	**Skills**	**rating**	**Skills**	**rating**
Learning orientation	1 2 3 4	Problem analysis	1 2 3 4	Management control	1 2 3 4
Self-management	1 2 3 4	Organising	1 2 3 4	Value clarification	1 2 3 4
Planning	1 2 3 4	Conceptual thinking	1 2 3 4	Judgement	1 2 3 4

Market orientation	1 2 3 4	Negotiating	1 2 3 4	Teamwork	1 2 3 4
Result orientation	1 2 3 4	Persuasiveness	1 2 3 4	Strategic orientation	1 2 3 4
Networking	1 2 3 4	Vision	1 2 3 4	Human resource management	1 2 3 4
Leadership	1 2 3 4	General awareness	1 2 3 4	International orientation	1 2 3 4

13. Please consider your own ability against each of the skills listed below. Please indicate your own level of skills against each, with a “L” indicating low, “M” medium and “H” high

Skills	**rating**	**Skills**	**rating**	**Skills**	**rating**
Learning orientation	L M H	Problem analysis	L M H	Management control	L M H
Self-management	L M H	Organising	L M H	Value clarification	L M H
Planning	L M H	Conceptual thinking	L M H	Judgement	L M H
Market orientation	L M H	Negotiating	L M H	Teamwork	L M H
Result orientation	L M H	Persuasiveness	L M H	Strategic orientation	L M H
Networking	L M H	Vision	L M H	Human resource management	L M H
Leadership	L M H	General awareness	L M H	International orientation	L M H