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An analysis of the competitiveness of Lesotho's wool and mohair industry

By

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DECLARATION

I, Senate Jacobina Khotso, declare that the dissertation, which I hereby submit for the degree MSc in Agricultural Economics at the University of Pretoria, is my work and has not previously been submitted by me for a degree at this or any other tertiary institution.

SIGNATURE:

DATE:

DEDICATION

This dissertation is dedicated to my late mother, ‘Mampoi Martina Khotso, for all the sacrifices she had made to take me through school and in raising me. I now believe that when people, especially our beloved ones, depart this world; they become our angels who guard and protect us from the heavens, for I have felt your presence in my life every single moment of every day.

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ABSTRACT

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Climate change, poor technological and information developments, fluctuations in exchange rates, access to credit, infrastructure, etc. threaten resources, endowments, and skills and technology development opportunities, especially in sectors like agriculture, which is most vulnerable to changes in underlying conditions. Consequently, there is a consistent need to assess the competitiveness of businesses, supply chains, sectors, countries and regions to inform public sector policy making and private sector strategy. Having acknowledged the importance of competitiveness through studies covered in Chapter Two of the dissertation, it is crucial for Lesotho's most important commodities to undergo such analysis for the betterment of the stakeholders and Lesotho as a whole.

This study analysed the competitiveness of the wool and mohair industry of Lesotho, which is one of the primary and strategic sectors in the country. The consequences of rangeland degradation, poor handling standards of wool and mohair, and declining production in Lesotho raise questions about the sector's competitiveness in a global market for the products. The main purpose of the research was to establish the competitiveness status of the industry against other

wool and mohair producing countries, and discover contributing or inhibiting factors to the status. The Relative Trade Advantage (RTA), designed by Vollrath (1991), was employed to evaluate the status of the industry. Through the use of Porter's Diamond Model, the study gathered and analysed the perceptions of farmers to determine the factors that affect competitiveness of the industry.

The study discovered that the five most prominent factors that drive Lesotho's wool and mohair industry competitiveness are strongly enforced rules at the shearing sheds, rules governing the association, collective action, prevalence of competition for high quality products, and availability of skilled labour. Conversely, crime, climate change, occurrences and effects of natural disasters, disease outbreaks, and a lack of trust in government officials' to full their responsibilities are those factors that have a detrimental effect on the competitiveness of Lesotho's wool and mohair industry. The research finds that the existence of unfavourable factors within the industry does not affect the competitiveness status and, therefore, the industry is considered to have a competitive advantage against pertinent countries, based on the Relative Trade Advantage (RTA). Therefore, efforts promoting the enhancing factors would help the industry to maintain and/or promote its competitiveness status. Serious provisions, on the other hand, are recommended for eliminating the constraining factors. Possible strategies in this regard include: implementation of trade tax policies that cater for the industry products, reforms or amendments of marketing and trading regulations of the commodities, and policies that foster skill, innovation and technological development. Additionally, the involvement of farmers in decision-making may help improve their awareness and understanding of the business environment. Lastly, private-sector development is a necessity for the industry to guarantee proper channels for information and resource dissemination.

Keywords: Porter's Diamond Model, Relative Trade Advantage, competitiveness, wool and mohair, farmers' perceptions.

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ACRONYMS

AGOA	African Growth and Opportunity Act
BKB	Boeremakelaars Koöperatief Beperk
EFTA	European Free Trade Association
EPA	Economic Partnership Agreement
EU	European Union
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GCI	Global Competitiveness Index
GDP	Gross Domestic Product
GoL	Government of Lesotho
IAD	Institutional Analysis & Development
IFAD	International Fund for Agricultural Development
IWTO	International Wool Textile Organization
LENAFU	Lesotho National Farmers Union
LNWMGA	Lesotho National Wool and Mohair Growers Association
LPMS	Livestock Products Marketing Service
LWC	Lesotho Wool Centre
PDM	Porter's Diamond Model
RCA	Revealed Comparative Advantage
RMA	Relative Import Advantage
RTA	Relative Trade Advantage
RXA	Relative Exports Advantage
R&D	Research and Development
SACU	Southern African Customs Union
SADC	Southern African Development Community
SADP	Small Agricultural Development Programme
SME	Small and Medium Enterprises
SPSS	Statistical Package of Social Science
TFP	Total Factor Productivity
UNFCCC	United Nations Framework Convention on Climate Change
USA	United States of America
WAMPP	Wool and Mohair Promotion Project
WEF	World Economic Forum

CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND INFORMATION

Many farmers in developing countries, like Lesotho, earn a living and combat food insecurity through agriculture (Bahta, 2013; Machethe, 2004; Morris, Binswanger-Mikhize and Byerlee, 2009). Amongst many other activities, these farmers typically raise livestock for meat, milk, and other valuable commodities like wool and mohair. Over time, agriculture has served as the main source of income for most rural households, and at the same time, it is a primary source of foreign exchange for developing countries. The participation of rural households in agriculture is arguably critical to securing livelihoods and bringing about poverty alleviation in rural communities (Motsoari, 2012). According to Machethe (2004), agriculture in Indonesia reduced the poverty depth by 50% and 36% in rural and urban areas, respectively, and this proves that households, notably in the rural sector, which are engaged in agricultural activities, tend to be less poor and have better a nutritional status than other households do.

Unlike in developed nations where the sector is stagnant; increasing demand for livestock products in developing countries has contributed to the growth and evolvement of the sector (Delgado *et al*., 2001; Delgado, 2005; Udo *et al*., 2011). However, challenges do exist, such as competition from other products, diseases and climate change (together with its contribution as a distribution of disease vectors and its impact on natural resources like water and rangelands). In view of these challenges, livestock sectors are likely to suffer a great deal from anticipated dwindling future production trends, if potentially effective control measures are not implemented (Thornton, 2010).

The world's wool industry and markets are categorised by several pertinent features – small and decreasing consumption percentages of fibre, consumption of wool products being concentrated within advanced nations, and relatively high prices of wool, as compared with other types of fibre. The competition from other agricultural enterprises is another contributing factor to declines in wool production in countries like New Zealand and Australia. Nonetheless, the International Wool Trade Organization [IWTO] (2018) reported that the 2016/17 season was believed to have been extraordinary for the global wool industry. The season was marked by strong increases in merino wool prices, particularly of superfine merino wool. The outstanding performance is said to have resulted from both the increases in demand for raw wool from wool-producing countries (particularly South Africa and Australia), and also from the ultimate decline in demand for raw wool from nations that produce crossbred and broader

wool. Mohair, on the other hand, has shown robust growth and performance from 2010, where pertinent producing countries have been able to either maintain or improve their production volumes (Clarke, 2016). Amongst the players, South Africa managed to maintain the leading position in 2016 and contributed 53% to the world's total mohair production, followed by Lesotho with 14% (Mohair South Africa, 2015, cited in National Agricultural Marketing Council [NAMC], 2017).

In Lesotho, the productivity of wool and mohair animals has declined significantly due to poor land and rangeland conditions. In the early seventies, the productivity of both crops and animals was relatively high. The production capacity of a sheep, on average, was 5 kg of wool per year, and maize and wheat yields were about 2 tons/ha and 1 ton/ha, respectively. In recent years, however, yields have declined significantly to where production is 2.5 kg of wool per sheep per year, which equates to a decline of about 3,000 metric tonnes of merino wool and about 600 metric tonnes of angora-type mohair per year. This low productivity is a result of the rangelands being seriously weakened. As a result, the carrying capacities of the rangelands have dropped to levels where raising animals in large enough numbers is reportedly becoming economically challenging. The decline in the quality of Lesotho's rangelands has also affected the special and weak ecosystems in the high-altitude reaches of the country. This has a strong effect on the nutritional value of the range; hence, high mortality and low carcass weights are being experienced for all categories of animals, as well as low birth weights, low reproduction rates and low fleece quality for small stock, all of which result in low farmer incomes (Woodfine, 2013).

The ultimate decline in the income generated by farmers is evident from the observation that wool and mohair farmers remain poor, despite the returns that accrue from exporting their products (Jordaan, 2004). Eventually, this poses a risk to the sub-sector that serves as the only viable livestock-related business opportunity fundamental to farmers and the economy of Lesotho. These commodities; though they are exported in their raw form to the international markets, generate foreign exchange earnings and ensure an injection to the national output and income accounts (Mokhethi, 2015).

Taking into consideration the importance of wool and mohair in the context of Lesotho's rural economy and the economy at large, a failure to put in place strategies to eradicate the effects of the challenges faced by the producers, the industry may remain prone and vulnerable to major shortfalls such as low production volumes and loss of prominent income. The strategies

can effectively work if all the stakeholders could collaborate and strive towards achieving the same goals which to promote and development the industry competitiveness.

Considering the sustainable preservation of competitiveness, it is important to highlight the point that competitiveness, according to Balkyte and Tvaronavičiene (2010), and as studied by many authors, is much more than just growth or economic performance, as is widely perceived. As a concept, competitiveness includes soft factors, such as technology, quality of life, the environment, and knowledge, as well as the ability to attain success in prominent markets, all of which serve to improve standards for all. Additionally, in the agricultural context, the issue of the overall competitiveness stems from several factors, notably firm-level competitiveness and a supportive business environment that boosts innovation and investment, which collectively lead to real income gains, strong productivity growth and sustainable development. According to Kagochi (2007), competitiveness can be considered as a driving force for livelihoods development as it is intended to boost the export volume of products, which in turn leads to increased farm incomes, market prices, capacity and use of land, and lastly, ensures the sustainability of the various products' contributions to the economy of the country.

An essential ingredient in addressing the competitiveness of the competitiveness of Lesotho's wool and mohair industry is a granular view of the competitiveness of the industry in a global arena and the underlying factors that contribute to general level of competitiveness. The problem statement of this dissertation develops the context to assess the competitiveness of Lesotho's wool and mohair industry.

1.2 PROBLEM STATEMENT

The keeping of Merino sheep and Angora goats (which are adapted to the temperature of Lesotho) traces back to 1880s, when Basotho farmers adopted the production of these breeds as a response to profitable market opportunities for wool and mohair at that time, and as one of the strategies to commercialise agriculture (Hunter, 1987). According to the International Fund for Agricultural Development [IFAD] (2014), Lesotho has a long history of sheep and goat husbandry, and has developed an effective value chain for the production and marketing of wool and mohair. However, the reality on the ground, gained through observation and following the series of fallouts between government and farmers, seems to exhibit many weaknesses in the sector and in the country too. The weaknesses include the poor standards of wool and mohair handling, especially in shearing, classing and presentation for sale. Despite the fact that the quality of wool and mohair is said to be practically good, the quantity produced

is low (2.74 kg and 0.87 kg are produced per sheep and goat, respectively), in comparison with South Africa's fleece weights of 4.0 kilogram for wool and 1.5–2.0 kilograms for mohair (IFAD, 2014; Mokhethi 2015).

Considering the significance of small stock farming in the livelihoods of Basotho farmers, a specific issue of concern is that Lesotho's extensive rangelands have been degrading over time (Makoa, 2014). Rangelands degradation threatens the livelihoods of the smallholder producers of sheep and goats and of those who rely on sheep and goat herding as their only economic activity. Moreover, accompanied by the impact of climate change on the friable environment, the rangelands are estimated to be overstocked by cattle, horses, donkeys, and sheep and goats, by between 40% and 80% (which is equivalent to 2.8 to 5.7 million) livestock units (International Fund for Agricultural Development (IFAD), 2014). Consequently, this state of affairs in the country's natural rangelands has resulted in progressively poor production performance in sheep and goats, which includes poor reproductive performance and low yields of wool or mohair, which in turn affect the returns that farmers generate from the market.

Wool and mohair are primary exports for Lesotho which makes their competitiveness important for their success. There are some issues that restrict or erode the competitiveness of these commodities. The decline in the rangelands and the subsequent erosion of productivity is a salient feature of precarious competitiveness situation and point to the necessity for methodical analysis of these commodities' competitiveness. A structured analysis of the industry's competitiveness would lay the baseline foundation of the current status for the industry. The competitiveness situation of these commodities is not known in granular detail and no recent study has considered this. It is important for policy making to know the overall status of the competitiveness of this industry, the underlying drivers across, so that, data driven policies can be made. The competitiveness analysis fills a current void in the specific context because no recent work has been done in this domain.

1.3 STUDY OBJECTIVES

The study proposes to develop a clear understanding of how to gain, enhance and maintain mohair and wool production and marketing competitiveness, over time, by comparing the country of interest with other countries producing the same commodities for export purposes. The following specific objectives will help in achieving the general objective:

a) To assess the competitiveness of Lesotho's wool and mohair sector in a global context

b) To discover and analyse the factors that determine the competitiveness of wool and mohair production and marketing in Lesotho

c) To develop possible strategies to address the challenges to the competitiveness of Lesotho's wool and mohair sector.

1.4 RESEARCH QUESTIONS

a) Which factors determine the competitiveness of wool and mohair production and marketing?

b) What is Lesotho's competitiveness status in the production and marketing of wool and mohair?

c) In comparison with other pertinent wool and mohair producing countries, what does the country's competitiveness status imply?

d) What could be the possible reasons for the current competitiveness position?

1.5 STUDY PROPOSITION

The ever-changing international environments and consumer preferences may prompt nations to doubt their competitive advantages (Gunasekaran, Rai and Griffin, 2011). The existence of such underlying factors threatens the productivity and competitive advantage of the wool and mohair industry. Such factors also call into question the capability of the industry to sustain competitiveness.

This research attempts to identify the competitive advantage and underlying factors within the wool and mohair industry. The proposition that the industry's competitiveness is threatened by the prevalence of degrading rangelands and poor range management practices, inclement weather and inexistence of proper handling (IFAD, 2014) is explored through using Relative Trade Advantage and Porter's Diamond Model methodologies. This dissertation utilises a framework devised to evaluate the environment under which the industry operates. The framework also serves as a tool that guides endeavours to achieve objectives and answer research questions.

1.6 STUDY JUSTIFICATION

The significance of the wool and mohair subsector for the economy of Lesotho and Basotho farmers, as discussed in previous sections, draws the attention of new research. Most of the farmers in the mountainous regions of the mountain kingdom depend heavily on wool and mohair as their source of living and for economic purposes. This subsector is among the most crucial for the economic development of the country, as it generates foreign revenue through exports of wool and mohair, which contribute substantially to the Gross Domestic Product (GDP) of the country. An analysis of competitiveness will reveal the strengths and weaknesses within the wool and mohair industry in Lesotho and assist the development of strategies that will help farmers grow and realise improvements in consumer welfare, economic growth, and development, as well as economic efficiency.

The existence of new research on issues that affect the performance of these commodities will contribute to the existing body of research and provide guidelines on how to address and/or mitigate the challenges faced by farmers in the production and marketing of their products. The study may also be used as a point of reference for future studies within the field of agriculture.

1.7 ORGANISATION OF THE STUDY

The dissertation has six chapters. **Chapter One** covers the introduction, which entails the following: background information, problem statement, study objectives, research questions, propositions and justification. The rest of the study is designed as follows: **Chapter Two** specifies the theoretical and empirical review of the literature. The description of the study area, sampling, expert discussions and data collection methodology are discussed in **Chapter Three.** The chapter also presents the survey design and development, implementation of the study, use of a theoretical model and framework, data analysis and research ethics. **Chapter Four** outlines an overview of Lesotho's wool and mohair industry and the environment under which the industry operates. The results and discussions from the survey are set out in **Chapter Five**. Lastly, conclusions and recommendations are covered in **Chapter Six.**

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

In a global context, some nations work towards changing the living standards of their citizens, and improve the economy. In an endeavour to explain why those nations perform, improve, and become more advanced than others in their respective industries and/or sectors, Porter (1990) studied and investigated the competitiveness of such nations. Pataki, Bela and Kohlheb (2003) equate competitiveness to adaptability, so as to mean that national economies and enterprises attain sustainable competitiveness or competitive advantage if they possess the capabilities to somewhat quickly and flexibly adapt themselves to ever-changing conditions (Gunasekaran *et al*., 2011), while still confirming the maximum probable societal and consumer utility demands.

It stands to reason that, in order for nations, industries and/or sectors to gain a competitive advantage over rivals, driving forces responsible for the change, adaptation and resilience (de Oliveira Teixeira and Werther Jr, 2013) to overcome competition must exist. This chapter reviews the literature on competitiveness to provide a clear and succinct view of its importance and its indicators within industries, firms, and nations. First, the definition and the theory related to the measurement and determinants of competitiveness are considered. The measurement of competitiveness is specifically considered in the context of competitiveness between different economic levels similar to the theme of this study. Second, a review of previous studies on national-, industry- and sector-level competitiveness is discussed, highlighting the methodology used, as well as the results obtained. Finally, a summary of the chapter is given.

2.2 DEFINITION OF COMPETITIVENESS

There is a lack of consistency with regard to the measurement and definition of competitiveness in relation to industries, sectors and nations, which makes it challenging to compare accruing research results (Delgado, Ketels and Porter, 2012; Bhawsar and Chattopadhyay, 2015). Authors define competitiveness according to their respective focuses of interest, and as a consequence, it is argued that there is no formal accepted or standardised definition of competitiveness (Esterhuizen, 2006; Knoll, 2011; Zhang, Ebbers and Mulder, 2012; Siudek and Zawojska, 2014). Due to the lack of coherence with regard to the definition of competitiveness, the American President's Commission developed a definition of industrial

competitiveness in 1985 to mean the degree to which a country meets the test of international markets by producing goods and services under impartial and unrestricted trade, while concurrently intensifying the real incomes of its people (Ortega and Peri, 2013; Sakyi, Villaverde and Maza, 2015). However, in the South African context, a specific study has defined competitiveness as the ability of industries or firms to perform in the global economy, with the government being involved only to create an enabling environment in which they operate and also sustain their economic performance in the long-term (Esterhuizen, 2006:76). The "… ability of a sector, industry or firm to compete successfully in order to achieve sustainable growth within the global environment while earning at least the opportunity cost of returns on resources employed…" was adopted as a definition of competitiveness by Esterhuizen (2006) in his study. The definition was achieved following the research theme and focus and by summarising the possible definitions gathered.

On the other hand, Cockburn *et al*. (1999) associated competitiveness with a nation's robust performance relative to other countries, where strong performance is symbolised by improved welfare, success in exports, and economic growth. Additionally, the point was highlighted that natural resource endowment, business-friendly economic policies, productivity, and generally high levels of education are conditions that can significantly affect specific industries and firms' competitiveness. Similarly, Csath (2007) stipulated the competitiveness definition in two ways: firstly, as the determined effectiveness and efficient manner in which human, natural and capital resources are being used by a nation, as well as how the nation sets out the standards of living of its people. Secondly, competitiveness represents the ability a nation has in providing, on a sustainable basis, high employment rates and high and escalating living standards to its people. In sum, the capacity of a nation to create high and rising incomes and advance the lives of her people (Annoni and Kozovska, 2010) rests upon the benefits accruing to the people, without the assessment of strengths and weaknesses of companies.

According to Kagochi (2007), for a country to have competitiveness, a high standard of living based on labour productivity and resources must prospectively be realised and preserved, and as for firms or industries, they must attain continual success relative to foreign rivals, without being protected or subsidised. Commonly, competitiveness for regions, industries, companies, nations, and supra-national regions is represented not only in the organisation's capacity to contest successfully with its commercial rivals (Law, 2009, cited in Balkyte and Tvaronavičiene, 2010), but also in creating relatively high employment and income levels while being subjected to the global competition (Huang and Hergül, 2014).

In summary, although there are many definitions of competitiveness, there are more similarities in some, if not all, the definitions that are included in this chapter than there are differences. Most importantly, the highlighted issues central to the concept of competitiveness are sustaining international competition, the element of economic growth, high standards of living, and the efficient and effective use of resources for the betterment of the nation and its people.

2.3 THE CONCEPT OF COMPETITIVENESS

Competitiveness as a concept stems from classical theories of mercantilism, which have grown from the early days of economic thinking. The concept has embraced different approaches and introduced the notion of trade competition among nations, absolute advantage of countries, and the competitive and comparative advantage theories, up to the neoclassical critiques of the global competitiveness of nations (Voinescu and Moisoiu, 2015). Competitiveness can be studied, analysed or assessed on different levels – national, sectoral or industrial (Zhang *et al*., 2012). As the theme of this study, the research is based on national competitiveness. The approach to study economic competitiveness differs theoretically, as some researchers believe it is most appropriate to apply the concept of competitiveness to products and firms, while others consider the national competitiveness as a determining factor of firms' overall competitiveness, or maintain the sectorial standpoint (Balkyte and Tvaronavičiene, 2010).

Competitiveness, for a nation, lies in the country's productivity (Caballero *et al*., 2011; Lengyel and Rechnitzer, 2013). It would be a false impression (Reiljan, Hinrikus and Ivanov, 2000) to consider the possibility of attaining competitiveness under low productivity conditions. It is clear that, if a country wishes to achieve strong and broad economic growth in terms of globalisation and integration, then it must be competitive in the world market (Carayannis and Grigoroudis, 2014). Thus, an economy is competitive in the world market if it has been productive (Syverson, 2011), or if, with the same capacity of resources (inputs) like labour and inputs to mention few, it can produce greater output and sell that in one period on the global and national markets. The productivity of the economy rests on a number of factors, for example, higher education, institutions, innovation, macroeconomic conditions, health of the nation, entrepreneurship, and adoption of new technologies, as well as the exchange rate (Amidzic, Kurtes and Rajcevic, 2016).

In contrast, recent studies argue that the real sources of competitiveness in the prevailing environment are intellectual capital, hard work, and flawless government (Kamukama,

Ahiauzu and Ntayi, 2011; Herciu and Ogrean, 2015). Creativity has also received recognition since it is believed that the ability to compete and prosper in the global economy goes beyond trade in goods and services and flows of capital and investment (Sulaiman *et al*., 2015). The capacity of a nation to attract, develop and preserve artistic people lies upon creativity (Dahlstrand, 2009:100). Furthermore, reliable results when dealing with competitiveness can only be found by employing both economic and societal factors, such as investing in people, acquaintance and encouraging innovation through increasing knowledge, improving society's institutions and operations, and decreasing both levels of corruption and the gap between the rich and the poor (Csath, 2007). In pursuit of explaining success and identifying the drivers of competitiveness, measurement elements of competitiveness have been studied (Balkyte and Tvaronavičiene 2010), which explains why the section that follows elaborates upon the approaches to measuring competitiveness as has been employed in different competitiveness studies and research.

2.4 MEASUREMENTS OF COMPETITIVENESS

The goal of competitiveness is to foster the well-being of citizens through social justice, human development, and increased levels of standards of living and individual income (Waheeduzzaman, 2002). Having the power to produce and become productive permits a country to support high wages, as well as attractive returns to capital and a strong currency, with the end result of high standards of living. Since locality competitiveness is determined more by home-grown than exterior aspects, national competitiveness can be measured through productivity (Xu and Yeh, 2005). Measuring the competitiveness of a country is usually discussed in the context of the performance of exporting firms, because for a country to be considered competitive, it must exhibit higher GDP growth through higher exports and productivity in the global market environment, assessed through general assessment of the overall dynamism of the economy. Although the most commonly used indicator for competitiveness is the weighted exchange rate, deflated by a cost indicator or an aggregated price (GDP deflator, export prices, etc.), recent literature appraises the role of structural factors in determining the export performance over the former due to problems that come with using aggregated data on price or cost indicators (Leichter, Mocci and Pozzuoli, 2010).

This section will discuss both quantitative and qualitative approaches used in measuring competitiveness by giving pointers in the form of a formula as to how the quantitative approach

is used. Different attributes of Porter's Diamond Model will be discussed and the relationship between and among the attributes will be portrayed in a diagram for clarity purposes.

2.4.1 Relative Trade Advantage (RTA)

Competitiveness can be measured in many ways, depending on the scholar's perspective. Revealed Comparative Advantage (RCA) and Relative Trade Advantage (RTA) are the most commonly used measures. The Revealed Comparative Advantage is the measure formulated by Balassa (1965) to compare a country's share of the international market to a country's share of the world market in one commodity, relative to its share of all traded goods (Esterhuizen, 2006; Dlamini, 2012). The merits of using the RCA measure are that, firstly, it can identify sectors for which an individual country has a comparative advantage and disadvantage. Secondly, it measures relative success in exporting, and lastly, it is not dependent on any theory regarding inter-industry trade and factor endowments.

However, Latruffe (2010) substantiates the claim that the Revealed Export Advantage measure is more appropriate when determining the competitiveness of a commodity because it calculates the proportion of a country's export segment of a commodity in the global market to the country's export portion of all other commodities. Moreover, the method eliminates double counting between sets of countries. However, competitiveness can also be measured by using the Relative Trade Advantage. The RTA not only uses export and import data to eliminate double counting, but also determines the competitiveness rank of a nation, as well as comparing one country to other countries. It equally uses exports and imports dealings, which as far as global trends and trade theory are concerned, are considered essential for growth in intra-industry trade (Latruffe, 2010).

Trade measures have gained attention as being core to measuring the competitiveness of nations, industries and products. One of the reasons to this is the fact that trade reflects non-price factors and relative costs which are embedded in trade patterns that can are used to reveal the comparative advantage of nations or commodities (Khai, Ismail and Sidique, 2016). The quantifiable use of Revealed Comparative Advantage (RCA) has been demonstrated by many scholars: Nwachuku *et al.* (2010) studied the competitiveness and determinants of cocoa exports in Nigeria; Mzumara (2016) studied the inter-industry competitiveness of Lesotho's exports; Hatab and Romstad (2014) analysed the competitiveness of Egyptian cotton in the Chinese market; Mokhethi (2015) analysed the structures and patterns of trade for the wool

and mohair commodities of Lesotho; and Sihlobo (2016) evaluated the South African maize export competitiveness. These studies justify the use of RCA as an analytical tool to assess competitiveness. However, measures that do not account for imports, such as RCA, fail to fully explain the competitiveness of a nation; hence, the RTA formulated by Vollrath (1991) has attracted considerable interest in recent years (Khai *et al*., 2016).

2.4.2 The determinants of competitiveness

It is reasonable to expect that regions will differ in the source of their competitiveness within their respective sectors, firms and or industries due to the existence of conditions that both empower companies to undergo competition in their respective markets and also for the value they actually generate to be captured within a particular region. These conditions are normally referred to as determinants of competitiveness (Voinescu and Moisoiu, 2015). The two most commonly used are discussed below.

2.4.2.1 Global competitiveness Index

The World Economic Forum (WEF) designed indexes, called Global Competitiveness Index (GCI) (Agbor and Taiwo, 2014), which are international competitiveness assessment measures used to determine the competitiveness of different countries (Balkyte and Tvaronavičiene, 2010; Lee and Karpova, 2018). This approach to competitiveness gives a clear understanding of how nations become more successful, as compared with others. Thus, competitive economies of the world maintain long-term solid economic performance by putting in place components which confirm that mechanisms that facilitate such a performance are in position, and at the same time drive productivity enhancements that support higher returns. There are many determinants that motivate productivity and competitiveness (Schwab and Sala-i-Martín, 2016). The GCI is complex and has a large number of determinants of competitiveness, as it comprises twelve pillars: institutions, labour market efficiency, health, primary education, goods market efficiency, innovation, financial market sophistication, technological readiness, market size, higher education and training, macroeconomic stability, and business sophistication and infrastructure. Accordingly, Sala-i-Martín and Artadi (2004) classifies these pillars into three major groups, which are factor-driven, efficiency-driven and innovation-driven.

Though these twelve pillars are not dealt with in detail in this study, there are few important issues worth mentioning. Firstly, the GCI captures the micro- and macro-economic foundations of the national competitiveness. Secondly, the pillars of the GCI exist inter-dependently in

economies and have a direct bearing on the competitiveness of a country's economy or subsets thereof. For instance, it is almost impossible for an economy to innovate in the absence of technological readiness ability and higher education and training. Thus, these pillars influence each other and the weakness in one pillar may have a negative impact in others. Additionally, one pillar cannot on its own boost competitiveness without the reinforcement from another pillar. Thirdly, the pillars are described in terms of how far and well the economy has developed. An economy that competes based on factor endowments is said to be *factor driven,* but an economy whose main focus is to develop high-value products and efficient production, is said to be *efficiency driven*, while an economy that is *innovation driven* possess innovation and business sophistication as driving forces towards their competitiveness. All these pillars matter differently to nations, depending on their respective stages of development (Greenhill, Schwab and Sala-i-Martin, 2011).

As mentioned above, competitiveness studies not only focus on the results obtained through RTA and other quantitative measures, but also assess the underlying factors or conditions. It is through the latter that GCI becomes effective. The GCI is used as an alternative to Porter's Diamond Model. Under the GCI, the factors are classified into three groups: factor-driven, efficiency-driven, and innovation-driven. From this classification, it must be noted that the factor-driven pillars blend in as part of the attributes of Porter's Diamond Model, which makes them central to the study as is the model. In addition, the factor-driven and/or efficiency-driven groups can be used to assess the stage of the wool and mohair industry of Lesotho in terms of development, and whether the industry is factor-driven or not. Detailed discussions of the model are given in the subsequent sub-sections.

2.4.2.2 Porter's Diamond Model

The theory of Michael Porter (1990) on competitive advantage, as acknowledged by McRee and Cassill (2002), provides a framework to study how nations in the global market gain competitiveness. Explicit determinants found within the industries in a nation form the basis for the framework. The criterion for the industrial sector's competitiveness is to maintain and improve its position in the global market in order for citizens to enjoy increased income levels (Balkyte and Tvaronavičiene, 2010). Although it has been criticised as being flawed, Porter's Diamond has been used by many academics (Esterhuizen 2006; Berger, 2008; Dlamini, 2012, to mention a few) and has become convenient in research for evaluating the competitive advantage of different agribusinesses in South Africa and Swaziland. In order to attain the sets

of determinants of competitiveness, the characteristics of forces outside the market are worth consideration, and those that pool in and across nations, companies, and industries are especially vital for consideration, as they help to outline the international business environment, as well as to provide valuable information for decision-making (Agbor and Taiwo, 2014). The demand conditions, related and supporting industries, factor conditions, and firms' strategies, structure, and rivalry constitute the direct determinants of Porter's (1990) Diamond Model. The model has an additional two indirect factors that influence the competitive advantage through the direct sway they have on the four determinants. In totality and individually, all these conditions create a platform in which competitiveness and innovation happen (Banerjee, 2004; Riasi, 2015).

The elements of Porter's Diamond Model are discussed intensively in detail below as an approach of choice for the study:

Factor conditions: nations, industries or sectors ought to possess basic inputs necessary for competition to outperform rivals. These inputs include capital resources, infrastructure (physical, administration, and scientific), and skilled labour (Curran, 2000; Sihlobo, 2016). This cluster of conditions encompasses the presence of high quality, specialised inputs obtainable to firms for their competitiveness and these factors are specific for an industry or firm. In the absence of factor conditions, a specific resource can be created to compensate for the factor disadvantages (Pitts and Lagnevik, 1998). Mindful of the context of the study, it is acknowledged that nutrition (rangelands/land use), water supply, shearing sheds, and veterinary facilities are responsible for production and management practices of wool and mohair production (McGregor, 1998; Jordaan, 2004; Nkonki, 2006; McGregor and Butler, 2008)**.**

Demand conditions: For some time, business literature has suggested that companies and firms are encouraged to innovate and build profitable international market positions on condition that local rigorous regulations prevail that influence the industries to innovate and advance by means of questioning the safety, quality and environmental standards of their product. Additionally, a large and growing domestic market encourages the producers to develop their efficiency and technologies because they are believed to govern conditions that foster demand for products in a particular industry, and as a result of that, competitiveness is influenced (Delgado *et al*., 2012).

Related and supporting industries: the presence of supplier industries and other interconnected businesses that are universally competitive within a nation can help and boost the industry's competitiveness by supplying goods and services in an efficient and cost-effective way, which will endorse productivity. These clusters of industries include financial organisations, production distribution systems, and research organisations. Additionally, it is argued that although it may seem possible to outsource from distance suppliers, using local suppliers is efficient in that proximity improves responsiveness in terms of innovation and information exchange, as well as lowering inventory and transportation costs (Porter and Kramer, 2002).

Agriculture continues to be an essential tool used for sustainable development and poverty reduction. Nonetheless, the capacity of farmers, especially smallholder farmers, is constantly being challenged by financial constraints that remain inequitably distributed and costly (Miller and Jones, 2010). For growth purposes, it is essential for a firm, at some stage of its life cycle, to obtain financing, especially bank credit, for several reasons: a) for growth, both for the firm and the economy as a whole; b) to create long-term relationships with banks; and c) to facilitate corporate control mechanisms and possibly easier funding of start-up firms. Hence, the existence of industries that strongly relate and support a certain industry in a country is a vital determinant of competitive advantage (Riasi, 2015).

It is argued that financing agriculture through formal financial institutions and approaches has been difficult and has placed a strain on efforts that enhance productivity and smallholder competitiveness, including their participation in the global value chain. This predicament has given rise to a solution that extends beyond conventional measures, and recognises value chain finance as a priority for agricultural development. Subsequently, value chain finance will craft a push for financial organisations to gaze beyond the direct recipient of finance and gain a better understanding of the competitiveness and risks involved in the sector so as to devise products that will fit the necessities of businesses in the chain (Miller and Jones, 2010).

It has been recognised that the main contributions to the economic performance of firms solely come from the knowledge provided by universities and public research centres, which basically form the public research organisations (Dutrénit, De Fuentes and Torres, 2010). Similar to financial organisations, research organisations promote social and economic development and work towards meeting the needs of the society, especially in emerging nations. They are well known from the industry's viewpoint for generating knowledge and formation of human capital to embrace a focal point on problem-solving and contributing to development through joint R&D, networking, patenting and open science, which are considered as the most vital information transferring channels (Dutrénit *et al*., 2010; Arza and Vazquez, 2010).

Firms' strategies, structure, and rivalry: This element of Porter's Diamond Model includes conditions in the nation which govern how businesses are codified, managed and created, and incorporate the essential attributes of internal competition or competitive advantage. It has been acknowledged that competitive advantage exists in two forms: a) cost advantage and b) distinction advantage (Porter, 1985; 1998). The cost-advantage is achieved when services and products are disseminated at a cost lower than that of the competitors, while the distinction advantage involves providing distinctive products and services on a broader range (Wang, Lin and Chu, 2011; Chumaidiyah, 2014; Tan and Sousa, 2015). Furthermore, this element of the model pertains to the rules and incentives that govern competition at the national level. It is through the intense and positive rivalry between and among firms in a country that such firms are shaped for global competition and where an attractive business climate for domestic and foreign investments is permitted and established. The trick to the success of the aforementioned aspects is the basis of antagonism in the local market, human resources, and investing in research and development (Knowledge, 2016).

Government and *Chance* are two exogenous elements, as shown in Figure 2.1 below, which form the external wing of Porter's Diamond Model. These attributes not only have an influence on the internal elements, but also influence competitiveness in that they create an environment for business development and competition. Government plays an important role in the four attributes of the model, as shown in Figure 2.1 below: it sets up the business environment through trade and tax policies and through administration regulations. It has been argued that chance conditions, which happen to be beyond the control of any stakeholder and role-player in domestic or global market places, assert pressure on the competitive performance of a sector, a nation and an industry (negative or positive), which conditions include the political environment, exchange rate and crime (Esterhuizen, 2006; Dlamini, 2012; Knowledge, 2016; Sihlobo, 2016).

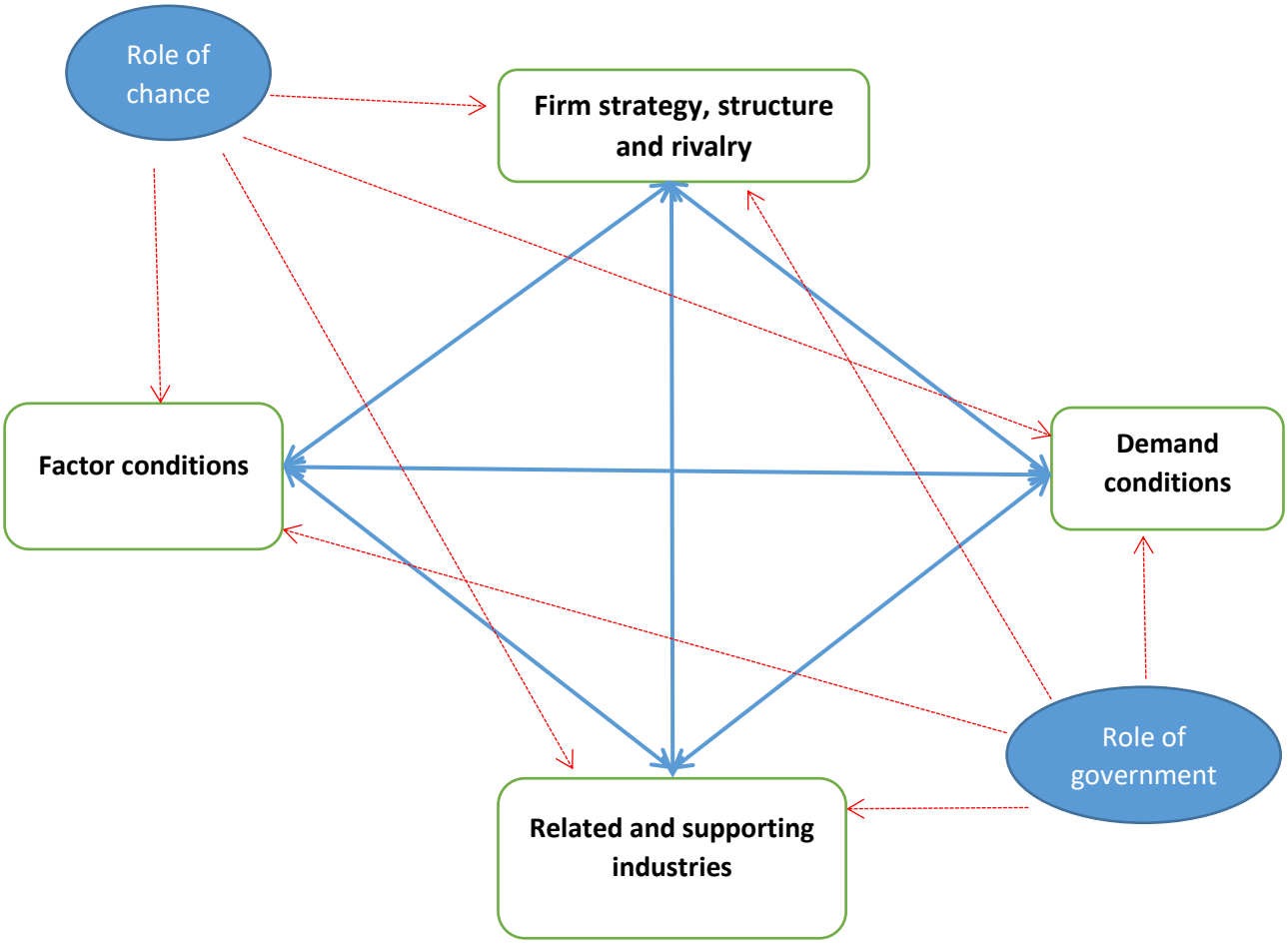

Figure 2.1: Porter's Diamond Model

Source: Porter (1990)

The determinants have forward and backward linkages, which basically illustrate the point that, for better performance, smooth and proper feedback needs to exist between the elements of Porter's model that idealises the theory: "… ***the chain is as strong as its weakest link*****" –** (Reid, 1786**)**.

The vigorous system that exists among these factors is more crucial than any one element working solely on its own is Curran (2000). The effectiveness and efficiency of one element of the model depends on others, as supported by the aforementioned quote, and a change in one element influences others distinctly (Clancy *et al*., 2001; Aghdaie, Seidi and Riasi, 2012). As has been highlighted in the introductory paragraph, the interaction between the elements of the model, in totality, bring about success as far as competitiveness is concerned.

2.5 THE REVIEW OF STUDIES ON COMPETITIVENESS

The relevance of this section to the study is to bring awareness of how broad the competitiveness concept is, in terms of scope and diversity. Describing the methodology and results obtained in vast numbers of studies done on competitiveness will illustrate the different perspectives from which the topic has been studied. Furthermore, this will be supported by evidence of the contribution of the chosen methodology/(ies), which in this case are RCA and Porter's Diamond Model, to the success of other studies.

2.5.1 Competitiveness, Livelihoods and Productivity

The concepts and literature covered in the previous sections of this chapter indicate that there could be a link or relationship between competitiveness, productivity and livelihoods. Therefore, this section considers these elements individually and explore**s** the possibility of interaction between these three concepts. Understanding these relationships and conclusions, guided by discoveries, will help form recommendations in the form of strategies that could be used to improve the competitiveness of the wool and mohair industry of Lesotho.

Livelihoods

These encompass activities and capabilities, as well as assets, that are essential for pursuing a means of living (Nkala *et al*., 2011). According to Nkala *et al*. (2011) and Serrat (2017), livelihoods are deemed sustainable only if they can withstand and recover from shocks and stress. Moreover, they must enhance or maintain capabilities, assets and activities in the present and in the future, taking into account that they should not destabilise the natural endowments. To examine whether livelihoods are sustainable (Serrat, 2017), three concepts or categories are considered:

Capital assets: these assets transmute livelihoods and they include financial capital (savings, credit), physical capital (infrastructure), natural capital (land, water), social capital (connections, networks) and human capital (education, health).

Vulnerability context: this concept involves the insecurities that communities, households and individuals feel in the face of change within their external environment as being insecurities that heavily constrict their respective livelihoods. As people move in and out of poverty, the internal aspect of helplessness and the external aspect of shocks (disease, floods, storms, illness, and conflicts), critical trends (governance, demographic, and technological trends) and

seasonalities (employment opportunities and prices) are captured better by the vulnerability context than by the poverty line measurements.

Policies and institutions: minimal recognition has been given by conventional economic theory (Rodríguez-Pose, 2013) to the influence that institutions have on regional development, while in actual fact, many researchers have discovered that institutions do have significance for economic progress and growth (Acemoglu and Robinson, 2010; Chang, 2011; Rodríguez-Pose, 2013). The environments of public- and private-sector organisational structures and institutions are considered to be major transformation tools of livelihoods. They are equally important in the sense that these structures implement and devise legislation and policy, deliver services, monitor trade, and control almost everything that affect livelihoods.

On the other hand, structures would probably not be able to perform their functions without the institutions that embrace and determine the ways and manner in which structures must operate for every aspect of the livelihoods. For example, while institutions (regulations, laws, societal norms, etc.) might restrict and deny access to people or structures to fully utilise their potential, they do provide incentives that assist in better decision-making and choices. Therefore, strategies that foster appropriate outcomes, such as increased levels of income, well-being, improved food security and more, need to be implemented. Such strategies include grants and pensions, off-farm activities and natural resource-based activities.

Productivity

The efficiency in production, derived from how much of yield is generated from the utilised sets of inputs, is the common definition given to productivity. Productivity hinges upon both the quality and features of products which determine the prices that they can command and the efficiency with which they are produced (Olukunle, 2016). Most studies done on productivity normally compute labour productivity, as opposed to capital and material productivity, but most effectively, Total Factor Productivity (TFP) has helped firms to determine their productivity, which reflects in alterations along the isoquants of a production function (Syverson, 2011).

The study by Syverson (2011) also explored the internal and external drivers of firm productivity and found that there numerous important internal attributes that firms can capitalise on for increasing productivity, and these are:

- *Higher quality labour and capital*, the combination which helps in crafting the output that can be produced from a fixed set of assets.
- *Talent/managerial practices* that drive productivity differences and are responsible for fostering the capabilities of human resources. The correlation between exceptional management practices and measures of productivity, and firms' performance (especially labour productivity) is not trivial. Accordingly, good management practices lead to harmonious production operations considering that they coordinate the application of capital, labour and intermediate inputs.
- *Learning by doing* – producers get the chance to notice new ideas and opportunities for improvement as they work. This works more like trial and error whereby several attempts lead to excellent results in the end.
- *Product innovation* – this attribute needs careful consideration: although prices fetched from innovative products (with increased quality) might be appealing, the approach to product innovation is more crucial. Product innovation is crucial to the adaptation of firms to a changing environment and sustainable competitive advantage (Zhou and Wu, 2010), which is why producers must pay closer attention to their absorptive capacity of product innovation. Failure to fully recognise the new information value, assimilate it, and, better still, use it to commercial ends may lead to detrimental losses. To achieve that, the producers must intensively employ knowledge from several sources, and undertake investigation, design, execution and control (Bucherer, Eisert and Gassmann, 2012).
- *Firm structure decision* – making proper business decisions suitable and specific for the firm minimises the losses firms might incur, while sustaining high productivity. The size of the firm, the type of linkages it has (horizontal/vertical), and the market under which it operates are useful considerations for helping producers improve their productivity to meet the market and maintain competitive position.
- *Information technology and R&D* – firms need to understand the importance of investing in R&D. According to Doraszelski and Jaumandreu (2013), R&D develops and introduces product innovation and processes. Thus, investing in knowledge not only enhances productivity, but also helps firms sustain their competitive advantage against their respective competitors. It is through this investment that firms stay persistent in productivity, and enjoy higher levels of growth and productivity and high rates of returns.

The success and performance of firms in relation to productivity not solely rely on internal drivers discussed above, but also on the external drivers, as has been mentioned. If government, as the main influencer of many external factors, plays its substantive role of ensuring a safe and favourable work environment, firms can benefit and increase productivity through:

- productivity spill over
- business environments that facilitate competition, either in trade competition or in intra-market competition
- proper regulations or deregulation
- flexible input markets.

Considering the literature laid out in this section, it is becomes apparent that the concepts studied are intertwined. A measure aimed at any one of the three factors will indirectly address the other two factors. Accordingly, producers and governments, and all other stakeholders, must independently and collectively play their part to achieve individual and similar goals, which in the case of this study will be competitiveness.

Mullen and Keogh (2013) reviewed the trends in the key drivers of productivity in their study on future productivity and competitiveness challenges for Australian agriculture. The study also aimed at suggesting the rate of productivity that would likely help sustain the competitiveness of agriculture within and outside the Australian economy. It was argued that exterior factors, such as the terms of trade and productivity growth, are the major influencing attributes on the Australian competitiveness position. It is said that agricultural productivity has declined since the year 2000, together with the Australian economy, although a few Australian sectors and other agricultural sectors have maintained a 2.0–2.5% growth rate over long periods. Ultimately, a substantial amount of the slowdown growth is thought to have resulted from a) the sluggishness of public investment in agricultural R&D, and b) high consistent rates of returns that are in motion, with the hypothesis that there is a market fiasco in providing research services to agriculture. The authors argued that even if the 2.0–2.5% range might be satisfactory for maintaining the agricultural competitiveness, it is not the main influence, as competitiveness solely depends on prices and trends in productivity of other sectors. Forecasting for the future, agricultural competitiveness will be a success, provided relative changes occur in the rate of productivity growth and terms of trade which will be infused by technical change induced by R&D.

2.6 COMPETITIVENESS STUDIES IN AGRICULTURE

This section narrows down to focus on a segment which is of interest to this study. Agriculture is like a tree with many branches. It is within the agricultural field that the wool and mohair industry, as a subsector of the livestock sector, falls. This section generalises the competitiveness studies that have been done in agriculture, as the main branch, to show how researchers formulated their research with the aim of contributing to the existing body of research, as well as assisting policy makers and planners to strategise and find solutions to the challenges faced by stakeholders in their respective industries for the betterment of economies. Research and studies on competitiveness are crucial, and the fact has been highlighted in previous sections that agriculture is a backbone of many rural dwellers in developing countries like Lesotho. Therefore, a review of convergent methodologies is important for matching research questions to methodological approaches, and making generalisable conclusions for similar research problems, across a range of contexts. This section is vital for laying out a foundational step towards achieving the purpose of this study.

2.6.1 Determinants of competitiveness of the Swaziland sugar industry

Knowledge (2016) explored and administered the RTA model developed by Balassa and Porter's Diamond Model to evaluate the factors that determine the competitiveness of Swaziland's sugar industry by studying the industry's comparative advantage and detecting the factors which might have a bearing on the industry's performance. In the study, 63 factors under 6 clusters of Porter's Diamond Model were explored, and results are discussed below.

Considering the RTA, in comparison with other nations, Swaziland had a comparative advantage (RTA>1). Running the regression on the RTA, only three factors appeared to have a significant impact on the industry – the price of sugar, exchange rate, and export value. The administration of Porter's Diamond Model in the study revealed that a business approach to the human resource, availability of credit, compensation of management, relationships and networking, availability of inexperienced labour, and internet services, as well as high-value products produced, are the key factors that enhance the sugar industry's competitiveness. On the contrary, the industry is also subjected to major constraints from the exchange rate, public sector effectiveness on service delivery, cost of financing, the small local market size, and costs of inputs supply. With all these disclosed, it was concluded, therefore, that the comparative

advantage which Swaziland has in the sugar industry depends strongly on the preferential access to markets that the nation has.

2.6.2 An Evaluation of South African Maize Exports Competitiveness

The inconsistency and irregularity of South African's maize exports prompted Sihlobo (2016) to investigate the competitiveness of maize exports in South Africa. The objectives of the study were to a) define and convey substantiation of the competitiveness position of South Africa maize export, b) gauge the latitude for South Africa to intensify its market shares in prevailing maize export markets, and c) identify possible unexploited latent markets for South African maize exports. To obtain results, the Growth-Share matrix, revealed comparative advantage (RCA), and the International Trade Centre market attractiveness index were used, and results are discussed below.

Table 2.1 below depicts the results derived from the quantitative approach proposed by Balassa (1965) – the Revealed Comparative Advantage (RCA). Among the sets of countries used for evaluation, South Africa moves in step with some of the largest nations, like Hungary and France. Despite being a major exporter, Russia has a comparative disadvantage. The RCA values for the USA, Brazil, Ukraine, Romania, and Argentina demonstrate a comparative advantage in almost all the years, while India in the periods from 2001 to 2003 and 2005 to 2006 had a comparative disadvantage.

Table 2.1: Revealed comparative advantage of the top ten global maize exporters

	USA	Brazil	Argentina	Ukraine	France	India	Romania	RSA	Russia	Hungary
2001	4.24	5.74	24.66	1.58	1.92	0.17	0.17	**1.94**	0.00	2.97
2002	4.62	2.80	22.91	1.63	2.20	0.13	0.89	**2.33**	0.00	3.49
2003	4.47	3.40	27.32	3.02	1.98	0.23	0.46	**2.16**	0.01	2.47
2004	5.09	4.30	24.27	3.64	1.86	1.15	1.12	**1.49**	0.01	2.84
2005	4.76	0.76	29.76	6.91	2.33	0.54	1.43	**4.42**	0.02	3.33
2006	6.07	2.94	22.89	4.02	1.85	0.67	0.68	**2.13**	0.03	3.63
2007	5.26	7.23	24.22	2.11	1.30	1.26	1.15	**0.15**	0.02	6.39
2008	5.75	3.68	26.93	5.44	1.62	2.57	1.60	**3.50**	0.04	4.29
2009	5.25	5.15	16.67	15.76	1.79	1.79	4.55	**4.72**	0.39	5.23
2010	5.26	7.34	30.44	10.19	1.75	1.58	5.87	**2.52**	0.07	4.99
2011	5.24	5.78	29.59	16.18	1.82	2.00	5.82	**4.52**	0.17	4.99
2012	3.15	11.27	30.04	29.19	1.62	1.99	5.36	**2.15**	0.56	5.43
2013	2.17	13.60	38.21	31.68	1.71	1.92	5.93	**3.85**	0.59	2.71

Source: Sihlobo, (2016)

The growth-share matrix analysed results based on the 2001–2013 data, and of countries used for analysis, five appeared to be in the low-growth market category, and these include the Netherlands, Iran, Algeria, Egypt and Spain. There is evidence of limited growth potential in these nations, which could be detrimental to the performance of South African maize exports, as it will be difficult to access and promote the market for South Africa. Alternatively, South Africa can benefit from the USA, Vietnam, and Indonesia due to huge opportunities for expansion that prevail in those nations. The top ten countries which were identified as attractive for South Africa, according to the market attractiveness index, are the United Arab Emirates (UAE), Indonesia, Nigeria, Chinese Taipei, Yemen, Iran, the Democratic Republic of Congo (DRC), Malaysia, Saudi Arabia and Mauritius, with most of the countries shown to have low tariffs and robust demand growth, which may work in South Africa's advantage.

In sum, the message and lessons to learn from these two studies are that RCA became useful in assisting the authors to arrive at their conclusions and processes of studying competitiveness, even though they had engaged in different commodities within the agricultural field. The use

of Porter's Diamond Model was also utilised to identify the conditions that have an undeviating effect on competitiveness. Both studies referred to in this section were done on agricultural exports commodities, as is the case with Lesotho's wool and mohair. The achievement of the ultimate goals of each study by employing RCA and Porter's Diamond Model validates the choice of both approaches as being key for the study of Lesotho export commodities.

2.6.3 Competitiveness and determinants of Cocoa Exports from Nigeria

Many farmers in Africa have benefited vastly from the production of cocoa, which is known to provide job opportunities and is a foreign exchange cash-generating crop. Nigeria is no exception as it has confirmed its place as the fourth largest producer and exporter of cocoa worldwide and the third major producer in Africa. Nwachuku *et al*. (2010) ascertained these facts while studying the competitiveness and determinants of this product. It has been argued that in the 1970s and 1980s, through assistance that the government received from the World Bank, the Nigerian government managed to assist aging farms and restored cocoa production through the implementation of producer price supports and replanting programmes. The marketing board, for its part, promoted cocoa production through the liberalisation of the cocoa market, achieved by reforms at the input and producer levels.

Despite the good efforts made to enhance the performance of cocoa, reductions in production have been noticed in recent years. It is maintained that the reductions are a result of pest attacks, disease occurrences, use of simple tools, and erratic production patterns. However, the Revealed Comparative Advantage (RCA) indicated that Nigeria has a comparative advantage in the exportation of cocoa. For all the years under study, the RCA indexes were above unity. It was during the years in which the country experienced major changes that the RCA trend either boomed or declined. For example, between the years 1995 and 2000, there was a decline in production when the government changed from military to civilian. In the years between 2000 and 2005, the economic reform of the democratic government entailed the implementation of programs to enable various sectors of the economy, after which the cocoa sector demonstrated an increase in RCA.

After a consideration of the advocacy of specific and relevant strategies and programmes intended to enhance Nigeria's national cocoa output and ensure its continued supply to the

world, it was concluded that price and exchange rate, as well as cocoa outputs, are the determinants of the competitiveness of Nigerian cocoa in the international market.

2.6.4 Determinants of competitiveness in South African citrus fruit industry

Out of the total contribution of agricultural exports, the citrus fruit industry, alone, contributes 27% to the economy of South Africa. The industry is also an important contributor to employment opportunities in the country, especially during peak periods such as harvesting. A study by Sinngu and Antwi (2014) on the citrus fruit industry was motivated by the pressure that local citrus processors and producers face, both from international and domestic competition. Doing business in the world, which has advanced in terms of information technology, regulatory and business environment, trade liberalisation and consumer preferences, among others, is challenging in itself, while another stumbling block that has to be dealt with is having to compete with players who are backed up by immense levels of support from their respective governments in the forms of subsidies and protection measures.

The literature studied by Sinngu and Antwi (2014) revealed that for countries to better beat competition, they need to invest more in factors that cannot easily be duplicated by competitors. Such factors include skilled labour, capital and infrastructure. However, after employing the Porter Diamond Model approach to the views gathered for the study from stakeholder within the citrus industry, the results revealed that infrastructure, capital and the availability of skilled labour are crucial, but form part of the factors that impede the citrus fruit industry's competitiveness, together with the cost of doing business in the industry, electricity supply, quality of unskilled labour, land reforms and government policies, and crime (Sinngu and Antwi, 2014).

On the positive side, the producers and processors experience factors that can positively influence the success of the industry and help them stay competitive within the business space that has no regulations. The global market and trading environments are also less controlled. As a way forward, the stakeholders, especially producers and processors, must utilise possible opportunities. The availability of factors, such as good market information flow, quality of skilled labour, scientific research institutions, and quality of the soil, if maintained and nurtured will continue to contribute positively towards the growth and competitiveness of the citrus fruit industry, while the government and other stakeholders work harder to eradicate hindrances to the industry.

2.6.5 Competitiveness analysis of Egyptian cotton exports with special focus on the Chinese market.

A study by Hatab and Romstad (2014) analysed the competitiveness of Egyptian cotton exports, with special focus on the Chinese market. In Egypt, cotton has always dominated the economy in terms of merchandise exports and poverty reduction, as well as contributing to the gross domestic product. It was appropriate to investigate the competitiveness and the demand for the product in the Chinese market in order to help the industry to scrutinise and seize emerging opportunities. Apart from providing 20% of the country's agricultural exports, the cotton sector not only generates additional jobs, but also provides livelihoods to about half a million rural households. Considering the importance of cotton, the Egyptian government devised measures to promote the export volumes of this product and its competitiveness by: a) developing trade agreements that are aimed at paving the way for the industry to gain further penetration into new markets, and b) refining access of cotton exports to existing import markets.

The authors employed the RCA and Vollrath's indices of revealed comparative advantage, as well as an Almost Ideal System (AIDS) approach, and ascertained that both Egypt and the United States of America enhanced the competitiveness of the industry over the period under analysis. Nonetheless, it was argued that there are factors that inhibit the demand and competitiveness of 'non-Egyptian' cotton. These inhibiting factors are: export prices of other pertinent exporters of cotton to the Chinese market and the nature of the Egyptian cotton that makes it substitutable for cotton imports from other regions. Investments in product differentiation and in production efficiency along the supply chain are recommended as remedial strategies for the competitiveness and demand of Egyptian cotton industry products.

2.7 COMPETITIVENESS IN THE LESOTHO CONTEXT

In this last section, the competitiveness of agriculture is discussed. Accordingly, this section will focus on the competitiveness of Lesotho. Because of the importance of wool and mohair (exports commodities) to the economy of Lesotho, as well as to the rural communities which derive their livelihoods from these, this section aims at identifying the research gap, based on the assessment of the studies that have been done, and this forms the basis of this research. The merits and limitations observed in this section will help the researcher to contribute to the

collection of information that exists by bringing to light new information and building further on what has been discovered. Additionally, the choice of methodology regarding how to answer the research questions and attain the objectives of the current study will be advised from the success of studies under consideration.

The inter-industry competitiveness study on Lesotho's exports by Mzumara (2016) evaluated the competitive or comparative advantage of Lesotho's industrial structure. The study is said to have been motivated by the nations of Southern Africa, together with those along the Indian Ocean, that have the mission of intense integration of their economies through increased intra-regional trade. The study employed the RCA method in determining the comparative advantage of inter-industries. The RCA, as discussed in the previous chapter of this dissertation, denotes a comparative advantage if it is greater or equal to unity, with RCA<1 implying comparative disadvantage. The results revealed that the textile industry/sector appeared to be the most competitive industry (highest RCA = 1464.46) of 165 product lines, which included wool, cotton and mohair. Miscellaneous industry (RCA = 946.6) is in the second position, and constitutes 35 product lines and industries, with the lowest RCA noted in the footwear/headgear segment (average RCA = 5.668358), together with wood plus wood products, which have only four product lines. The animal and animal products (rawhides, furs, and skin leather), plastic and rubber, mineral products, chemicals, and allied industries appeared to have no comparative advantage at all, and are reported to have been performing poorly.

The study conducted by Jordaan (2004) analysed the production and marketing practices of Lesotho's wool sector. The study focused mainly on trade marketing and production. After employing inductive reasoning, deductive logic and a policy analysis matrix, it was argued that the production level of the industry is faced with more challenges than the trade and marketing sections are. The challenges include lack of proper feeding, stock losses, low production rates and high mortality rate, which thereby lead to low yields. Hence, the industry is considered ineffective and non-competitive. Although the production side is not promising, the marketing and trade sides of the system show minor challenges that could be resolved if a few adjustments could be made to maintain the economic efficiency of the sector.

Mokhethi (2015) analysed the structure and trade patterns of wool and mohair exports in Lesotho. The Revealed Comparative Advantage Index, trade map, and nominal rate of protection were among the methods employed in the study. The results indicated that Lesotho,

as a small nation, is competing with large countries that produce good-quality wool and mohair, and this results in Lesotho's performance being poor. Additionally, though the sector has a comparative advantage in the production of wool and mohair, it suffers from a number of challenges: insufficient market structure, poor nutrition and diseases, and lack of government subsidies and policies, all of which fail to protect these agricultural commodities from tariffs. Nevertheless, it was argued also that it has low concentration on exports. Thus, low concentration brings about reductions in the impact of international trade risk, because of fluctuations in wool and mohair prices.

In summary, these three studies form part of the body of knowledge of the Lesotho wool and mohair industry. However, they do not consider the competitiveness of the sector at all. Consequently, this study aims to specifically study and analyse the competitiveness of the wool and mohair by focusing on issues at the production stage of Lesotho's wool and mohair value chain. The significance of the study relates to the fact that the industry is the backbone of the rural community and the primary source of livelihoods in the country. This summary re-emphasises the problem statement that triggered the undertaking to analyse the competitiveness of the wool and mohair sector in Lesotho. Notwithstanding that it comprises one of the most important sectors to the economy of Lesotho, based on the literature summarised above, little recognition has been given to it and no in-depth studies have been done regarding this sector.

2.8 SUMMARY

The main purpose of this chapter was to ascertain issues around competitiveness in the context of agriculture. Drawing from a range of studies that differed in their objectives, country and product under consideration, one common fact is that competitiveness is the central issue of concern for many countries. This is because competitiveness is argued to provide the way out of poverty, especially for developing countries like Lesotho, through job creation opportunities and improvements to livelihoods and productivity, some of which, if not all, are great contributors to the respective countries' economic growth.

The studies acknowledged in this chapter are based on products or industries that contribute either to the GDP of respective countries or to sources of livelihoods for the citizens. The motivation was driven by the pressing challenges that affect the important sectors or products. It may be argued that the challenges are caused by the negligence of stakeholders, and/or inevitable incidences such as climate change. The challenges, irrespective of whether they

prevail at the firm level or industry level, have the same effect, and this directed the study towards the ultimate conclusion. It goes without saying that agricultural products, especially export products, are on the verge of losing competitive advantage if drastic measures are not taken to address and curb the effects of the challenges that are faced. Failure to address diminishing natural endowments, financial constraints, the little to no investment in R&D, poor breeding stocks, and the unavailability of skilled labour, to mention a few aspects, will bring an end to foreign currency generating industries. The worst-case scenario will be that the livelihoods of people will diminish and a high prevalence of food insecurities will be experienced.

The literature considered in this section suggests that competitiveness depends on a range of factors and that all factors should be considered in its analysis. Drawing from the literature on Porter's Diamond Model, it can be said that having all attributes working together, rather than independently, is a good remedy for attaining, maintaining and promoting competitiveness. Counter strategies, such as those that focus on sustainable livelihoods for example, have been acknowledged by Serrat (2017) as having the potential to lead to industries performing at their best capabilities. These strategies are practical investments in capital assets (human capital, physical capital, etc.), policies and institutions, and in reducing the vulnerability context.

After the competitiveness of products has been assessed, and factors which either enhance or inhibit competitiveness have been ascertained, recommendations are made in terms of solutions that would enhance both productivity development and livelihoods sustenance as pathways to competitiveness. Some of those strategies could be specific to a sector, but there are some, which fit all industries and sectors, that could be adopted to address the challenges within the wool and mohair industries of Lesotho.

It can therefore be acknowledged that the combined administration of Porter's Diamond Model and RTA or RCA measures will lead to successful analysis of competitiveness, which justifies the choice for these methods in this study. For example, the combination of Porter's Diamond Model and RCA in the study on the Swaziland sugar industry and Porter's Diamond Model and RTA in Nigeria cocoa is evidence that, irrespective of whether one wants to study comparative or competitive advantage (both of which reflect competitiveness), it is possible to achieve the desired objectives. With the suggestions made, the link between competitiveness, productivity (GDP) and livelihoods (increasing standards of living) becomes visible. Moreover, the strategies suggested in all studies prove fit for improving productivity, growth,

and sustainability, all which rap together issues covered in the concept, definitions and measurements of competitiveness.

CHAPTER THREE: STUDY METHODOLOGY

3.1 INTRODUCTION

This chapter develops the methods and procedures that were used to achieve the study objectives. Section 3.2 describes the study area, starting with the country as a whole and narrowing it down to three respective districts which were chosen for analysis. Section 3.3 explains the sampling process. Section 3.4 elaborates on expert discussions, and the data collection procedure is outlined in Section 3.5. The process and details involving the design and development of the survey are described in Section 3.6. Section 3.7 describes the study implementation, while Section 3.8 sets out the use of Porter's Diamond Model. Data analysis processes and research ethics are discussed in Sections 3.9 and 3.10, respectively.

3.2 THE STUDY AREA

Lesotho is a mountainous country and is colloquially known as the "mountain kingdom". The country is approximately 30 555 square kilometres in extent (Belle, Ferriera and Jordaan, 2013; Olaleye *et al*., 2016) and is completely landlocked by the Republic of South Africa. The country is demarcated into ten districts, as depicted in Figure 3.1 (Lesotho Country Profile Report, 2017). The study was conducted in the domain of Lesotho.

3.2.1 The geographical locations and population of the Maseru, Berea, and Leribe districts

The Maseru, Berea, and Leribe districts are situated in the north-western region of the country. Of the estimated total population of 2 007 201.00, Maseru, Berea and Leribe have populations of 519 816, 262 616 and 337 531, respectively (Knoema, 2019).

Figure 3.1: Map of Lesotho

Source: www.mapsofworld.com Accessed: 23 April 2019

3.2.2 Climate

Lesotho's climate is determined by its latitudinal position in the sub-tropics, which classifies the country as a temperate continental region (Rosenberg and Weisfelder, 2013; Moeletsi and Walker, 2013; Wikle, 2015), with characteristics that would be quite auspicious for numerous economic activities. However, the geographical location of the country on the plateau of the Southern African sub-continent (Gwimbi *et al.*, 2012) is a prime force for the country's susceptibility to influences from both the Atlantic and the Indian Oceans. Furthermore, the usual conditions that are created by the annual movements of the inter-tropical convergence zone resulting from the weather patterns and the location, result in Lesotho experiencing wide

variability in temperatures and rainfall**,** thereby rendering the country extremely vulnerable to climate change (Lesotho Meteorology Services, 2017).

3.3 SAMPLING

The study employed purposive and simple random sampling techniques. As it is the theme of the study to assess the wool and mohair industry, farmers were randomly selected from the three districts of Maseru, Berea and Leribe, which were purposively selected due to their proximity and accessibility as they are located in the lowlands region of the country. Farmers who were chosen were selected on the basis of the following: a) they had to be members of LNWMGA, and b) they had to have sheep or goats or both, as the commodities of interest – wool and mohair – are produced from sheep and goats. In order to achieve a considerable representative number of farmers from the 37 000 farmers, as confirmed by the chairperson of LNWMGA, a total of 166 respondents was calculated using the online sample size calculator:

S= PS *CL (%)*ME (%), where

S is the sample size

PS denotes population size (number of farmers); CL = 99%, which is the confidence level in percentages, and ME = 10%, representing the margin error, which is also denoted in percentages chosen at a researcher's discretion in order to guarantee the right representation of the population and attain better results.

3.3.1 Limitations

The sampled farmers attend monthly meetings, and they come from different villages that are far apart from each other, which constrained the researcher from reaching the desired number of farmers who met the criteria. Due to the researcher's time and financial constraints, 160 rather than 166 farmers were interviewed. The farmers who were selected to participate in the research kept both sheep and goats.

3.4 EXPERT DISCUSSIONS

The choice to consider expert discussions stems from the gap that exists between the high-level statistical evidence and sparse empirical evidence (Ehrich, Somekh and Pettoello-Mantovani, 2018). Expert opinions are often needed to elicit and combine judgments (Rowe and Wright, 2001), especially where there is a dearth of information regarding a particular topic (Ven and

Delbecq, 1974). According to Linstone and Turoff (1975), there is no standard procedure to determine how large a panel size should be, or guideline as to what constitutes a small panel size. On the contrary, a panel with less than 10 individuals is rare, and a panel with more than 1000 is too large, which is why the range of 10 to 100 is considered appropriate, provided that it is dispersed across two or three groups. For this study, different panellists were derived from three major groups: stakeholders (directly affected), facilitators (skills in clarifying), and experts or those with expertise (with relevant experience) in the sector or industry. From the fore-mentioned categories, the sub-panel groups were formed according to how many people were available and willing to participate, and a total of 15 people was reached.

Prior to the survey, interviews were conducted with experts in the wool and mohair industry, using a structured questionnaire to gather and validate the important factors that govern the competitiveness of the industry, which could not be approved from the literature due to few or no studies having being done on such topics. The panel of experts was composed as follows: three (3) senior lecturers, with two (2) from the Faculty of Agriculture in the Department of Agricultural Economics and one (1) from the Department of Animal Science at the National University of Lesotho; one (1) junior lecturer at Lesotho Agricultural College, three (3) employees from the Ministry of Small Business Development, Cooperatives and Marketing, one (1) employee from the Ministry of Agriculture, three (3) employees at WAMPP, one (1) employee from LENAFU, two (2) consultants, and one (1) farm manager employed by LNWMGA.

3.4.1 Limitations

The experts' discussions were intended to follow a Delphi technique where panellists undertake iterative discussions in two rounds to reach consensus regarding the factors that are important in the competitiveness of the wool and mohair sector. However, only one round of discussion was practically possible and was achieved.

3.5 DATA COLLECTION

3.5.1 Secondary data

The study also used secondary data that was accessed from the Trade Map database, which includes commodity trade statistics on variables such as exports and imports figures, years and selected countries. The data was used to calculate the Relative Trade Advantage (RTA), with no alterations being made to the original data. Data on Lesotho's performance within different

districts was gathered from the Ministry of Small Business Development, Cooperatives & Marketing (Lesotho), and the Department of Livestock (Ministry of Agriculture). This data was used (with no alterations or changes made) to elaborate the attributes of the farmers' community in terms of production in Chapter Four.

3.6 SURVEY DESIGN AND DEVELOPMENT

A structured questionnaire was designed and used to collect primary data from small-scale mohair farmers in Maseru, Berea, and Leribe districts. The content of the questionnaire was designed using Porter's Diamond Model of competitiveness and included a mixture of both close-ended and open-ended questions to cater for, firstly, the qualitative nature of the study where respondents give views or explanations to questions, notwithstanding that the answers to these are said to be hard to analyse (Roberts *et al.*, 2014), and secondly, to give the respondents broader choices in the list of probable answers to select their answers from (Rantlo, 2018).

The questions were written in clear and simple English, but had to be translated into Sesotho, the local language in Lesotho. The need for a translated questionnaire was identified during the pre-testing phase, with most farmers being eager to see and read while being interviewed. The time it took to explain the English concepts during an interview, while also facilitating it, proved to be impractical. A translated version of the questionnaire improved the ease of answering, as the farmers seemed more relaxed to express themselves in their native language, and they also understood the questions better.

The survey questionnaire was pre-tested in the Nazareth area, near the capital of Maseru. Pre-testing assisted the researcher to take note of the following: firstly, the importance of time management, which helped to build a good reputation and gave respondents the assurance that their time would not be wasted. Secondly, the pre-testing helped in that the researcher had the chance to discover that translating the questionnaire would enable a smoother data collection process.

3.7 IMPLEMENTATION OF THE SURVEY

Wool and mohair farmers meet on a monthly basis at their respective shearing sheds. Due to resource constraints, chairpersons in the districts of interest were approached and arrangements were made with them to meet with the farmers and execute the questionnaire. On the dates given by each chairperson, the researcher and assistants attended the farmers' gathering, where

they were given a time slot to introduce themselves and make the purpose of their visit known to all farmers. Farmers continued with their agenda while they were given the chance to volunteer themselves and attend the face-to-face interviews, which involved three farmers at one time, with each being attended to separately.

Interviews were done separately for farmers to ensure the authenticity of the information received. Irvine, Drew and Sainsbury (2013) argue that the conducting of interactions in a normal manner, through visual encounter, eliminates loss of both spoken and non-spoken data, the latter of which is mostly expressed through facial expressions and body language. Most importantly, visual encounter gives the opportunity for the interviewer to guide and assist the respondent to not deviate from the topic at hand. For this reason, both enumerators and the researcher had to maintain a favourable environment that allowed farmers to freely express their consent and opinions.

3.8 USE OF PORTER'S DIAMOND MODEL

Porter's Diamond Model forms the theme of the study and it was used to formulate the questionnaires and to serve as a guideline for analysing data to help the researcher to achieve the study objectives. The choice of the approach was motivated by the success of competitiveness analysis studies carried out in different fields and on different products. Of most importance to this study were the studies conducted on agricultural export commodities, especially in less-developing countries that feature characteristics similar to the country of interest. The success of such studies justified the relevance of the model and guaranteed better results. The model was used to analyse the farmers' perceptions regarding the wool and mohair industry. The results will be presented and discussed in Chapter Five of this research report. The model aided in the assessment of the results under each attribute individually before they could further be narrowed down to two groups of positive and negative determining factors.

3.9 USE OF INSTITUTIONAL ANALYSIS AND DEVELOPMENT (IAD) FRAMEWORK

The IAD framework is normally used to help scholars answer certain policy questions (Ostrom, 2011). The rationale for using this framework in this study was that it is particularly helpful for identifying the components of the wool and mohair industry of Lesotho. Through observation, there are important issues of concern within the operational environment of the industry that

affect the success of the industry's competitiveness analysis. In-depth discussions on the operational environment using the framework are outlined in Chapter Four of this dissertation.

3.10 DATA ANALYSIS

The closed-ended questions were coded with numbers in the questionnaire for ease of analysis, then descriptively analysed using the Stata program. The data was then presented in tables in the form of means and standard deviations.

- The dichotomous questions were also coded and analysed using the Statistical Package of Social Science (SPPS). The results are reflected in Chapter Four in tables and graphs as elaborations of the operational environment under which the wool and mohair industry operates. For future reference, farmers' perceptions were coded, captured electronically and stored.
- The study determined the determinants of the wool and mohair industry's competitiveness through the use of Microsoft Excel. The determinants were grouped and rated (using mean values) according to whether they have a moderate, constraining, or enhancing effect on the industry's competitiveness and were presented graphically.
- Figure 3.1 below illustrates the methodology carried out to answer research questions and achieve objectives in the endeavour to analyse the competitiveness of the industry.
- The empirical analysis of Relative Trade Advantage (RTA) was carried out. The RTA was employed to determine the position of the industry in the international context. The measure ranges between $-\infty$ to ∞. This measure helped establish the competitive advantage of the industry against the same industry/(ies) in other pertinent countries. The measure utilised imports and exports data using formulas that follow:

Relative Exports Advantage (RXA_j) = $[X_j/X_t] \div [X_{wj}/X_{wt}]$

Relative Import Advantage (RMA_j) = $[M_j/M_t] \div [M_{wj}/M_{wt}]$

Relative Trade Advantage (RTA_j) = $RXA_j - RMA_j$

where: X_j and X_t represent the country's export of product j and total exports, respectively;

X_{wj} and X_{wt} represent the world's export of product j and total exports, respectively;

M_j and M_t represent the country's imports of product j and total exports, respectively;

M_{wj} and M_{wt} represent the world's export of product j and total exports, respectively. The value of RTA when positive denotes the competitive advantage, and suggests the opposite when negative. If the value is equal to zero, the competitive advantage of the industry is neutral.

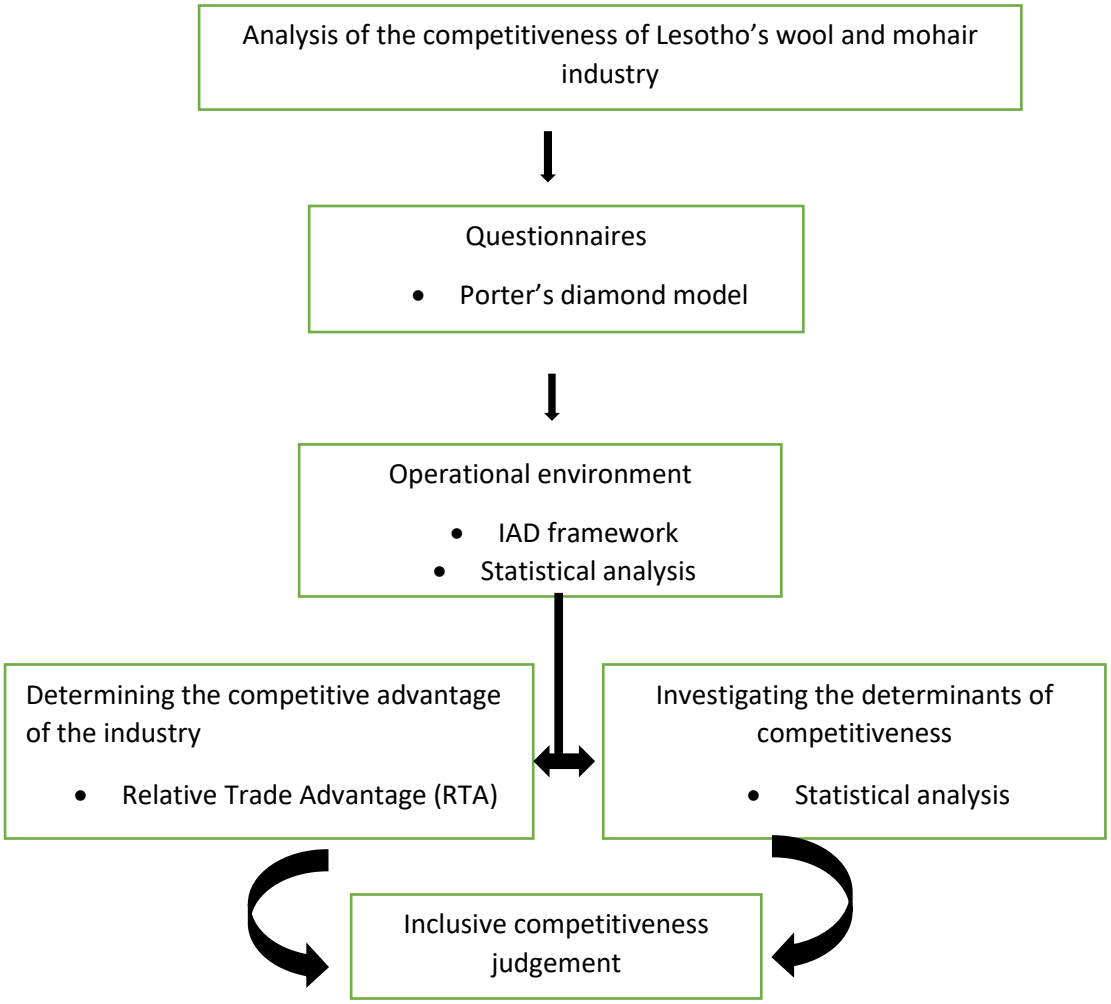

Figure 3.1: Framework for analysing the competitiveness of Lesotho's wool and mohair industry

3.11 RESEARCH ETHICS

In compliance with the guidelines of the Research Ethics committee at the Faculty of Natural and Agricultural Science, an application for ethical clearance was lodged prior to data collection. Upon approval, the researcher made contact with the chairperson of the LNWMGA and explained the purpose and scope of the study, and the importance for farmers to take part

in such activity. It was then, through the chairperson, that the researcher managed to call and arrange a meeting with chairpersons of shearing sheds in districts of interest.

Proper introductions were done by the chairpersons on behalf of the researcher to the village chiefs concerned. Before commencing with the agenda of the meeting, the researcher addressed and clarified the consent form to the farmers, highlighting and explaining in depth the elements of anonymity and confidentiality, as well as the voluntary nature of participation in the in exercise. To guarantee legitimacy, the researcher provided a letter from the study Supervisor to the chairpersons. The terms of the consent forms were repeated in brief to each and every respondent before the interview, and farmers were then invited to sign. During the interview, the researcher refrained from showing any indications of misbelief, disrespect and superiority, and maintained professionalism. The researcher was also cautious at all times not to cause any physical or emotional harm through asking questions regarding one's cultural beliefs, religion, political affiliations, and so on. At the end of the interview, the researcher thanked the respondents for making the survey a success.

CHAPTER FOUR: AN OVERVIEW OF LESOTHO'S WOOL AND MOHAIR INDUSTRY AND OPERATING ENVIRONMENT

4.1 INTRODUCTION

This chapter seeks to describe the wool and mohair industry of Lesotho, and to set out the operational environment by using the framework of the Institutional Analysis and Development (IAD). The framework entails different components that influence each other, as depicted in Figure 4.1 below. The framework is a multi-tier conceptual map (Ostrom, 2011), developed with the aim of analysing the role of institutions in processes that are collective-choice in nature, and introduces policy characterisation as well as social interactions that are useful for process analysis (Pahl-Wostl *et al*., 2010). With the use of this framework, clear attention is drawn to relevant variables and questions that may be asked in relation to a subject under inquiry (Whaley and Weatherhead, 2014). The framework, as stipulated by Dorward and Omamo (2009), can be used to explain how actors conduct themselves and to establish the outcomes resulting from changes within the exogenous variables.

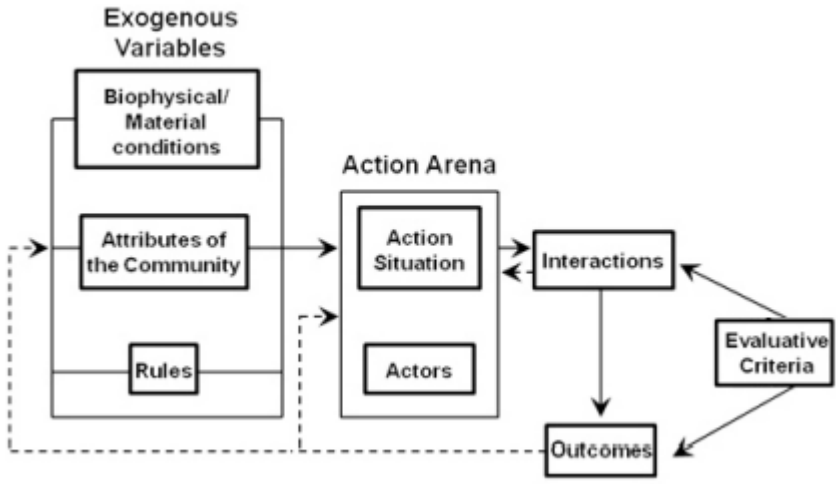

Figure 4.1: IAD framework

Source: Dorward and Omamo (2009)

For the purpose of this study, the IAD framework was employed to describe the operational environment in which the wool and mohair industry operates. As a point of reference, two supply chains of Lesotho's wool and mohair sector are discussed. The idea is to show the transition caused by changes within the exogenous variables. The chapter is divided into 5 sections. All in the context of Lesotho, Section 4.1 will elaborate on the exogenous variables

of the framework, Section 4.2 will focus on the action arena, with much detail given. The discussion in Section 4.3 will be on the combined effect of the last component of the framework, and lastly, a summary of the chapter will be given.

4.2 EXOGENOUS VARIABLES

This section of the framework is about the resources, conditions and rules that influence the action domain (the actors and situations of interaction). The subsections covered under this section will examine Lesotho's wool and mohair industry. As the action domain is about actors and their interactions, either in the exchange of goods and services or in the management of natural resources, Dorward and Omamo (2009) argued that there will be some actors, institutions and activities that will fall under the exogenous variables due to having an exogenous influence on the domain action, rather than being involved directly, and thereby qualify to be part of the environment. In the case of Lesotho, such actors will be Small Agricultural Development Programme (SADP) and WAMPP, and institutions will comprise the regulations imposed by the government on the industry. These components will be discussed under the physical or material conditions that they are believed to be.

4.2.1 Physical or material conditions

The environment in which farmers within the wool and mohair operate has water and rangelands that are open for everyone to utilise. Of the population under study, the majority of the farmers use water from naturally occurring sources, like springs and water they collect from rain. The farmers who rely heavily on rangelands as their main source of feeding do not necessarily make use of other type of feeds to complete the nutritional system of their stock. According to the list of possible inputs given in Table 4.1 below, there is evidence that most farmers, whether or not they rely on rangelands for feeding their small stock, show low utilisation of other types of feeds, except for lucerne. This indicates that, of the farmers who use rangelands as main source of feeding, 54 out of 160 farmers feed lucerne to their stock. The same trend is also experienced with supplements. There is a larger number of farmers who do not feed their livestock with supplementary feeds, although there are some that do some feeding with maize and lucerne.

Table 4.1: Statistics on farmers' use of feeding inputs and supplements

	Simili	Lucerne	Bran	Residue	Maize	Forage	Makhulo feeds
Main source of feeding (rangelands)							
0	12 (5)	9 (8)	12(5)	12 (5)	10 (7)	14 (3)	14 (3)
1	120 (23)	89 (54)	135 (8)	134 (9)	108 (35)	140 (3)	139 (4)
Supplements							
0	52 (13)	52 (13)	60 (5)	60 (5)	55 (10)	65 (0)	63 (2)
1	80 (15)	46 (49)	87 (8)	86 (9)	63 (32)	89 (6)	90 (5)

Source: Author's elaborations from survey data (2019)

Note: The number in brackets ( ), denotes farmers who use the input under consideration

4.2.1.1 SADP as an actor in the wool and mohair industry

The Small Agricultural Development Programme (SADP) is co-financed by the World Bank, IFAD and the Government of Lesotho (GoL), and has been in existence for six years Kingdom of Lesotho (2013). The SADP was implemented to fill a gap in agricultural programmes in Lesotho. As top priorities, the programme aims to reach out to farmers by linking conservation with productive investment in the endeavour to improve productive activities. Commercial farmers and smallholder farmers with commercial potential are intended to benefit from the programme as main targets through grants that are allocated for their use, either as funds or for labour. Additionally, in collaboration with the Department of Marketing, the programme was anticipated to link farmers with traders, and lastly, to provide farmers collectively with an injection to their livelihoods and income-generating activities, to be initiated by the agricultural investment plans component of the programme (Ulrichs and Mphale, 2016).

4.2.1.2 WAMPP participation within the wool and mohair industry of Lesotho

The Wool and Mohair Promotion Project (WAMPP) has been designed in response to the Government's request to provide support to this important aspect of Lesotho's rural economy,

on which the livelihoods of so many of its women and men smallholder producers depend. Through collaboration with IFAD, Lesotho's government developed a project to support important sectors of Lesotho's economy, including the wool and mohair sector. The project is national in scope, and the plan covers all 10 administrative districts of Lesotho. It focuses particularly on the poorer highland areas, which cover more than two-thirds of the country's surface area. These areas constitute the production base for the wool and mohair industry that is the backbone of Lesotho's agricultural economy.

Concentrating on farmers who are resource poor, the project places priorities on the management of livestock and rangelands in accordance with the National Adaptation Project of Action (NAPA) to help farmers who want to engage in value addition and/or cottage industry development. The project entails three components – A, B and C – which are formulated to address climate-smart rangeland management, improved livestock production and management, and wool and mohair processing and marketing, respectively. The main task for Component A is to see to it that sustainable communal grazing systems are established and that rangelands are well managed so as to promote livestock feeding. Component B address issues related to breeding, health and nutrition in order to raise production standards and revenue for farmers. Issues concerning the effective and efficient handling of wool and mohair, including the adoption of approaches that are commercial-market oriented, are designed for Component C.

The project's objectives are parallel to the policies discussed above, and if achieved, there is a bright future for the wool and mohair industry, agriculture, and the nation as whole, in terms of improved livelihoods, employment, competitiveness, and economic growth and development.

4.2.2 Policy environment and its effect

Climate change is already having a serious impact on the water resources and agriculture in Lesotho as it has, among other things, weakened the condition of rangelands (Lesotho Meteorology Services [LMS], 2017) to the extent that extreme temperatures, particularly those leading to drought, exacerbate the incidence of diseases, which require the assistance of good veterinary services. As a result, livestock sub-sector farmers are bound by these circumstances to consider supplementary feeding. In response to the detrimental effects of climate change on the mountain kingdom, the government, with the guidance from Ministry of Energy and Meteorology, has embarked on the exercise of formulating the national policies. Under the

policy, strategic directions and coordination have been outlined on issues of climate change, as associated with its linkages with sustainable development. Besides delineating statements from which different sectors will draw guidelines for adaptation and mitigating strategies, the policy has identified key susceptible areas and risks presented by climate change. This policy formulation serves to meet the obligations of the country under the international conventions and agreements it has signed (i.e. UNFCCC). These obligations entail campaigning and emphasising the level of vulnerability the country faces under threats from climate change, and assessing the adaptation and mitigating strategies in response. Furthermore, Lesotho, according to the international guidelines and principles, has drawn up policies on land use, water development, waste management, energy, health and sanitation, agricultural reform, and environment, amongst others. Analysis has clearly shown positive results of these policies in that, while some are slowly counter-acting the impacts of climate change, most are achieving a break through.

4.2.3 Attributes of a community

The communities in the districts examined in the survey are remote, and experience poor infrastructure in terms of roads and services. The labour used for the herding, classing and shearing of animals normally comes from within these communities, and most are peasant farmers and people who work casual jobs. Based on the communications during the survey, most farmers are illiterate. The data obtained from the survey has been analysed and used to support the observations as far as attributes of communities used in the survey are concerned.

4.2.3.1 Production

The information on production, as depicted in Figure 4.2 and 4.3, indicates that mohair production has been low, as compared with wool, in three districts throughout the years. From this production status, it could be concluded that the farmers value sheep over mohair, or rather, they value wool as opposed to mohair. Wool performance follows a stationary trend throughout the ten-year period, except for 2014 when there was a slight shift upward. On the contrary, the mohair trends are the opposite of the trends for wool, except for Maseru which shows a steady movement, with an exception in 2014. These disparities in the production can be associated with many factors that are related to and affect production. In both these Figures, it is noted that there are certain years that do not show production volumes. This is because the data gathered from the responsible institutions had omitted details for those years, which could not be retrieved.

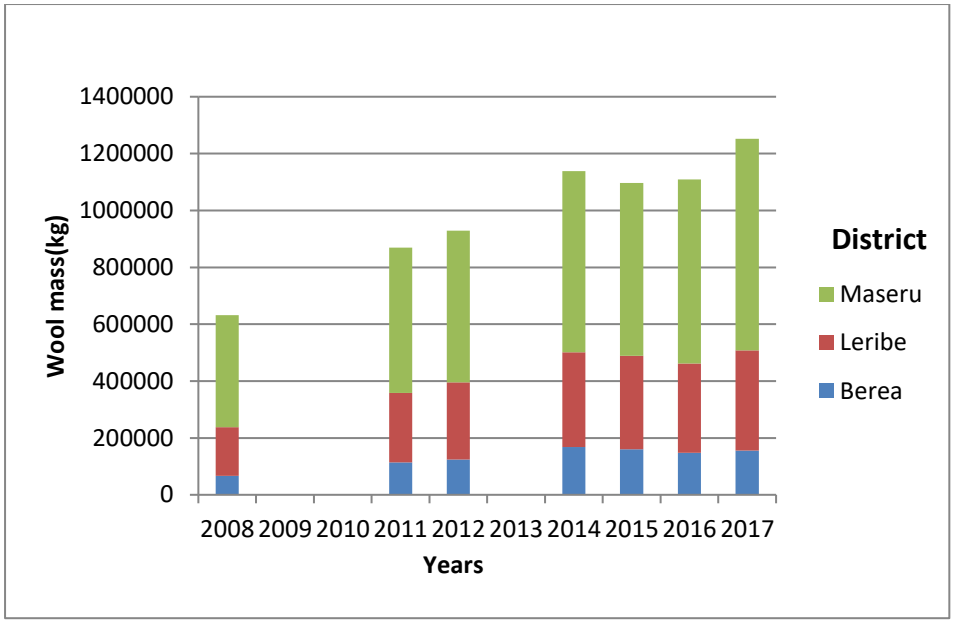

Figure 4.2: Trend of wool production in different geographical locations in Lesotho

Source: Author's elaboration, Department of Livestock (2018)

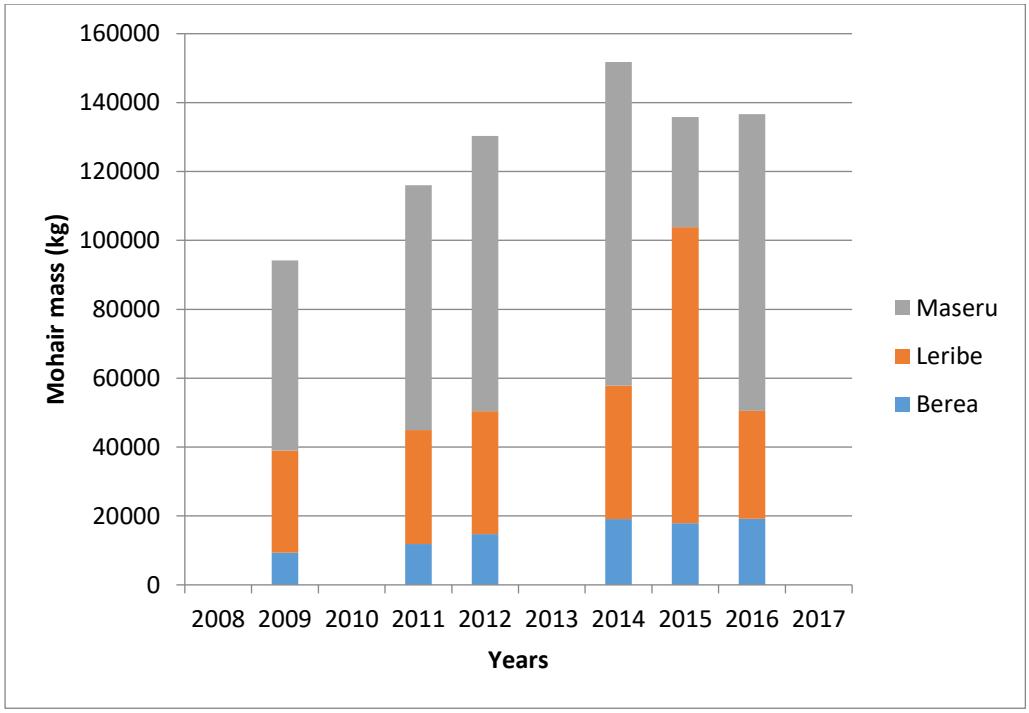

Figure 4.3: Trend of mohair production in different geographical locations in Lesotho

Source: Author's elaborations, Department of Livestock (2018)

4.2.3.2 Endowment/resource assessment

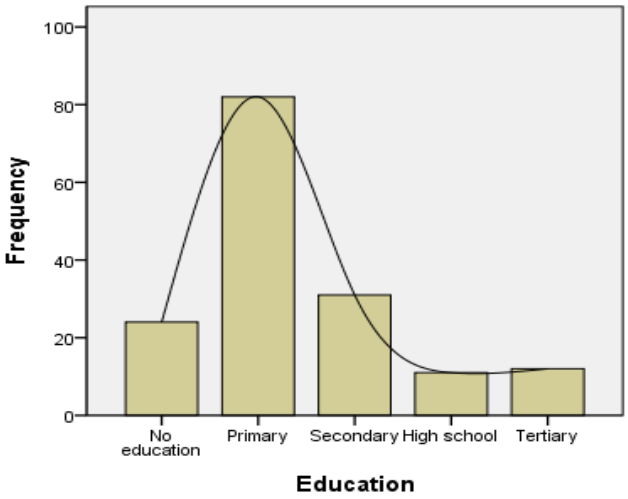

Figure 4.4: Farmers' education descriptive statistics

Source: Author's elaborations from survey data (2019)

Figure 4.4 above depicts the educational levels of the farmers in the study. Observing the trend displayed, it is evident that the wool and mohair industry, particularly at the production level, is in the hands of farmers within the lowest educational band. Although the relationship between competitiveness and education has not been tested empirically, literature emphasises the role played by education in economic performance and development (Baumann and Winzar, 2016), as well as its vital effect on improving income distribution, developing human capital development, alleviating poverty, and in more recent literature, enhancing national competitiveness (El Baradei, 2010; Krstić and Stanišić, 2013). The farmers do not possess the necessary education to aid in and improve on their performance or technical skills, as it has been stipulated that "higher education plays an increasingly critical role in the economic competitiveness of local, state, and national economies." (Lane, 2012).

Table 4.2: Farmers' responses on sources of factor conditions

Entrepreneurial skills source Frequencies		Responses	Percent
	Work shop	111	59.00%
	Experience (self-taught)	69	36.70%
	Formal education	3	1.60%
	Media	2	1.10%
	Farmer to farmer	3	1.60%
Total		188	100%
Extension services source Frequencies			
		Responses	Percent
	Government extension services	155	90.10%
	Private extension services	17	9.90%
Total		172	100.00%
Labour source Frequencies			
		Responses	Percent
	Herding(Family)	64	12.60%
	Herding (Casual)	53	10.50%
	Herding (Permanent)	64	12.60%
	Classing (Casual)	26	5.10%
	Classing (Permanent)	139	27.40%
	Shearing (Casual)	70	13.80%
	Shearing (Permanent)	91	17.90%
Total		507	100.00%
Infrastructure source Frequencies			
		Responses	Percent
	Shearing facilities (Government)	160	32.10%
	Health facilities (Government)	155	31.10%
	Health facilities (Private)	24	4.80%
	Storage facilities (Government)	160	32.10%
Total		499	100.00%

Source: Author's computations from survey data (2019)

Note: Totals are bigger than the sample size due to multiple responses

According to the results recorded in Table 4.2 above, the surveyed farmers do not invest in improving their knowledge to do business and development. Most of farmers claim to have attained their entrepreneurial skills from workshops, which in most cases are provided by the extension officers who are called upon by government or community out-reach projects, with a significantly lower number of them reporting experience as the base of their skills. Experts emphasised the importance of education in the wool and mohair industry. However, as noted in Table 4.2 above, few farmers are educated beyond high school level, which explains why only 1.60% of the respondents reported that they had attained their skills through formal education channels. The same pattern of behaviour is noticed regarding the source of extension services that farmers utilise: around 90% of the farmers rely on government extension services, leaving about 9.9% to rely on private extension services. Although agricultural extension services are vital in terms of boosting the farming communities, the changes and challenges facing their delivery has increased awareness of the need for private participation and funding for achieving better improvements in extension delivery so that they might commendably meet, and be relevant to, the needs of the consumers (Adejo, Okwu and Ibrahim, 2012).

The farmers appear to utilise two forms of labour in equal amounts for herding: (1) unpaid family labour, and (2) paid permanent labour. Nonetheless, a significant volume of paid casual labour is absorbed by the industry, as well. In terms of a cost-effective analysis, unpaid labour or cheap labour is a cost advantage (Jansik, Irz and Kuosmanen, 2014) and can provide a way for attaining and maintaining competitiveness, as Thailand has managed to do to gain competitiveness in tuna processing, through low costs of labour (Supongpan, Dawson and Lingard, 2013). In the case of the classing activity of wool and mohair, farmers use more numbers of permanent labourers, and fewer casual labourers.

During interviews, farmers mentioned that they train classing personnel, which indicates why they stick with permanent employees, as they would not be able to afford to train new employees every season. The same goes for shearing. Farmers seem to use only casual and permanent paid labour. With the combination of more numbers of unpaid labourers for herding and permanent labourers for classing and shearing, it may be argued that farmers could manage to diversify their funds and improve other functions of their businesses. Infrastructure, especially physical infrastructure, is a public good that has favourable externalities and not only guarantees a social benefit, but also help firms to reduce business costs (Palei, 2015).

Despite the fact that it could be perceived that Lesotho's wool and mohair farmers use government infrastructure under a culture of dependency, this equally means that, on their own, they might not be able to secure such infrastructure, which would be detrimental to the business. This is supported by Kiel, Smith and Ubbels (2014) who state that infrastructure is among the factors that support competitiveness but do not necessarily improve it.

In a nutshell, an unclouded verdict would be that the industry will develop and grow slowly due the conditions (discussed above) experienced by communities and farmers in the study area. It seems that technology and innovation development could be problematic in this industry, in view of the low levels of education and sparse information services, among other things, that the farmers experience. Farmers need to capitalise on what they have at the cheapest cost, or no cost at all, to develop what can transform their operations and promote their potential to stand out as the best in their field. For example, information is one of the most important elements that promote the supply chain, if it properly disseminated. Accordingly, farmers might consider investing in information, rather than relying on government extension services, which were said to have been poorly transferred, or related to crop production, rather to livestock.

4.2.4 Rules-in-use

Rules-in-use are equated here with what is referred to as institutions (signifying the rules of the game) and they govern and monitor an individual's behaviour. Within the IAD framework, the following rules are recognised: scope rules (governing the range of results that can be affected by actions), choice rules (rules on permitted, required and forbidden actions), aggregate rules (rules that impact on the degree of control actors would possibly exercise when taking actions), information rules (affecting the information that players obtain and utilise), position rules (rules involving the roles and effect actors have in the situation), pay-off rules (defining profits and costs related with outcomes, actions and actors), and boundary rules, which entail rules as to entry and exit, and who is eligible (Dorward and Omamo, 2009; Ostrom, 2011).

In the context of Lesotho, the wool and mohair business may generally be governed by the same set of rules that govern any business. Farmers do not need any formal permission like licences or registration to produce wool and mohair in Lesotho. However, individuals or companies that sell or facilitate the selling of commodities like wool and mohair are bound by

the guidelines of regulations to be in possession of licences to market the particular commodities (Government of Lesotho [GoL], 1974;2018). Hence, any person or organisation is permitted to operate in Lesotho's wool and mohair sector, provided that they comply with relevant legal requirements, and the provisions made for such legal obligations are akin to the boundary rules as per classification of rules in the IAD framework. As mentioned in previous sections of this dissertation, the numbers of farmers in the industry increase year in, year out, because some labour providers (especially in herding) are compensated by the receipt of livestock, which automatically make those herders farmers, as well. Under the rules mentioned above, these actors are freely allowed to enter and exit the business, whenever they see fit.

Farmers, whether in cooperatives or LNWMGA, have to conduct themselves in a way agreed upon or stated in their code of conduct within the rules and regulations agreed upon by members (choice rules, as per IAD classification). During the survey, farmers mentioned that, to qualify for membership of the LNWMGA, one has to own a ram that is approved to have great attributes (genetically modified), and they normally buy these rams from South African entrepreneurs. The same conclusion can be drawn regarding the actions of the broker(s), as they are governed by the terms and conditions listed in their agreement. Judging from opinions raised by farmers during the survey, pay-off rules are in play within their industry in that they get to improve their performance and business skills through the competitions that they engage in at the district and national level. They are allowed to showcase their stock and commodities at these competitions, where they gain exposure as to what the best-performing farmers' livestock look like, and they interact to boost and equip one another with production and management guidance.

4.3 THE ACTION ARENA

4.3.1 The action situation and actors

Figure 4.5 below depicts the wool and mohair supply chain for three groups of farmers, the first being those who have common goals and have joined their forces in a democratically owned business (cooperatives). The second cluster is referred to as the marketing group, and the third comprises the group of farmers who are members under the national association. The supply chain entails the exchange of goods and services. It may be argued that negotiations on sales and transactions do indeed take place as well on the far end of the chain, between the brokers, who basically negotiate prices on behalf of farmers (sellers) with the agents, who negotiate prices on behalf of buyers.

According to the old marketing system, farmers who are under the LNWMGA use the government shearing sheds and have no option of shearing their wool at home or at private shearing sheds. The marketing group consists of individual farmers who choose to shear at government sheds or private sheds, and these farmers are not members of LNWMGA. Like the farmers under the national association, cooperatives similarly have one option, which is to use private shearing sheds. The wool coming from the government shearing sheds is passed to brokers through Livestock Products Marketing Service (LPMS), while some goes directly to the broker and then reaches factories through the agents who act as the middleman between buyers and sellers. The wool and mohair sheared at private shearing sheds go directly to brokers, and from the brokers to factories, through the agents.

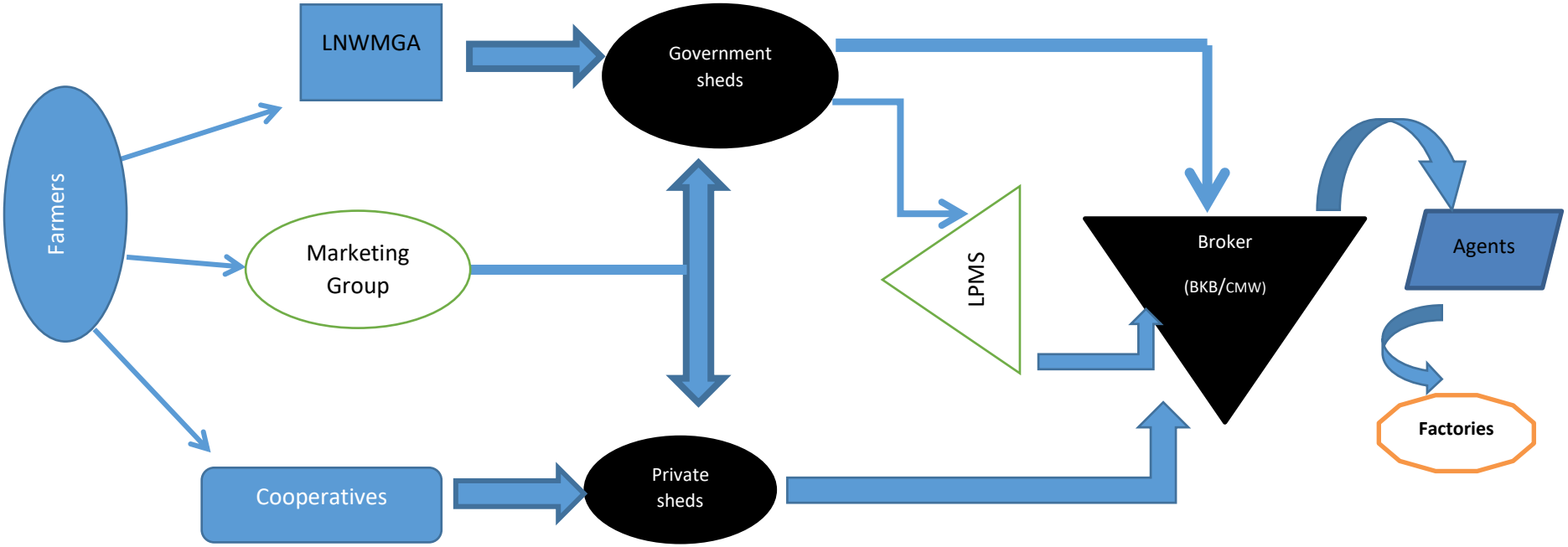

Figure 4.5: The old wool and mohair supply chain

Source: Author's own elaboration, Department of Marketing (2018)

The government, being the other actor indirectly involved within the wool and mohair industry, has introduced the new agricultural regulation that governs how wool and mohair must be traded. Through its ministries (the Ministry of Agriculture and the Ministry of Small Business, Trade and Marketing), the government has taken upon itself to create and improve the performance of the wool and mohair industry by amending the agricultural marketing regulation which involves trading and marketing licensing. Dealers in wool and mohair were previously licensed depending on whether they wanted to embark on the business of trading or buying of wool and mohair, or any products made from wool or mohair. The licence served the purpose of allowing the holder to sell or consign the product, either out of hand or through auctions (GoL, 1974).

Under that system, the licencing authority that was responsible for the grant of licences could impose new conditions on any issued licence as might have been in the public interest, or revoke or vary the approved conditions. The new regulation, on the other hand, licenses a person to engage in the wool and mohair business, and strictly forbids such individuals from participating in the business of a shearing shed, brokering, testing, trading and auctioning, processing, or exporting the product, unless they are licensed to do so by the Minister in terms of the (GoL, 2018). As for exports, the holder of an exporting licence is not allowed to trade wool and mohair beyond the borders of the country, unless the processes of preparation, brokering, trading and auctioning have taken place within the country.

The new regulation excised other functions from the supply chain (see Figure 4.6 below). This chain of the new system flows from the farmers to government and private sheds, where farmers are faced with the same choices as stated previously. Once the wool is sheared, it goes to the wool centre where it then sold to the factories. This new system follows the new marketing regulation that amended the old. As depicted below, the system follows the same path as the old system, up to the operational level of shearing.

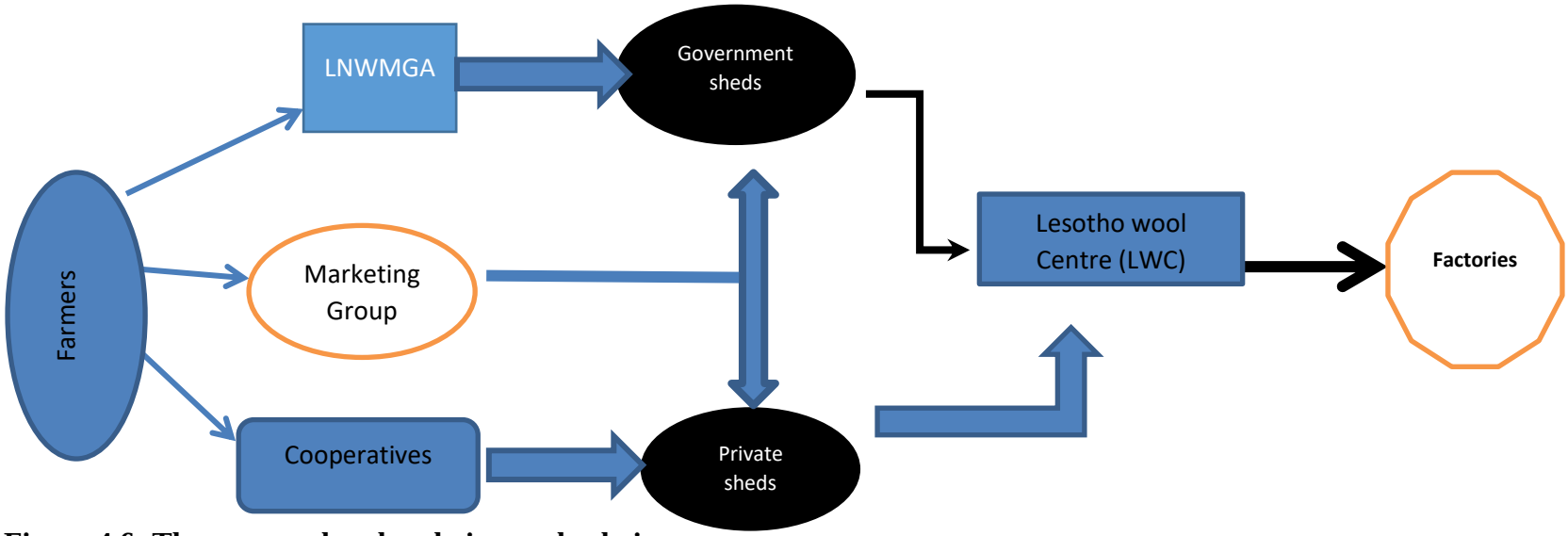

Figure 4.6: The new wool and mohair supply chain

Source: Author's own elaboration, Department of Marketing (2018)

4.4 PATTERNS OF INTERACTION AND OUTCOMES

This section interprets the ways and manner in which the action arena actors interact. These interactions are believed to have an effect on actors, and their situations and attributes. Therefore, all these effects will be covered into sub-sections below: Sub-section 4.4.1 covers the patterns of interaction and Sub-section 4.4.2 outlines the outcomes of the action arena, which feeds back to the environment.

4.4.1 Pattern of interaction

The action arena of the wool and mohair industry of Lesotho is summarised in two supply chains in subsection 4.3.1, which show the forward linkages from farmers to the factories. The interactions involve the movement of goods and services. The wool and mohair farmers in both chains do not interact with buyers. The processes of sales are handled by entities that act as middlemen between the farmers and the factories or the final buyers of the commodities.

4.4.2 Outcomes

The amendment of the regulation and the transition that this introduced have further cut down the supply chain of Lesotho's wool and mohair industry. There have been few players, especially on the marketing side of the business (in both new and old chains), where only two broker entities handle all the brokering business. This has limitations, especially for farmers under the LNWMGA since they are bound by the association rules not to take their product anywhere besides the broker - Boeremakelaars Koöperatief Beperk (BKB) in the old system and the Lesotho Wool Centre (LWC) in the new system. In environments like this, farmers or sellers are disadvantaged as they only have one or few choices regarding where they should take their business. This ultimately affects the norm of doing business in a cost-effective manner that would help to inform decisions about the application of new assessments and/or investments (Neumann *et al*., 2016).

It could be argued that competition is restricted in both the new and the old supply chains, with no signs of control over conduct, and that there is also market domination (no power distribution). According to Vatiero (2010:692), power that is distributed among players, being the power that encourages competition as regarded by Adam Smith, is a catalyst to enhanced performance where firms counter-act each other's behaviour and practices to attract customers and overcome rivalry. Additionally, as far as profits are concerned, competition may sustain higher profits, as argued by Hamza and Kachtouli (2014), to the effect that in the banking

business, the more markets become concentrated, the more the benefits of participants are bound to increase, as they are compelled to become better than their rivals. In most cases, banks can either share the markets or maintain higher prices, and the latter consequently stimulates a decrease in competition and ultimately higher returns than would be the case in monopolistic competition.

In advancing the nations of the world, institutional arrangements such as contract farming, cooperatives and farmer organisations have gained recognition as constituting remedies to the problem of a lack of collective action, notwithstanding that they might not be able to satisfy the tastes and preferences of the ultimate customers of firms (Rantlo, 2018). Moreover, in cases where skills are lacking or inadequate, outsourcing becomes crucial as a source of competitive advantage in that two firms form inter-organisation business transactions, which are normally governed by contracts to eliminate and enforce certain guidelines (Yang, Wacker and Sheu, 2012). With reference to both sources cited above, the old system of Lesotho's wool and mohair possesses some of attributes addressed, where we see BKB being outsourced to perform the functions of brokering the commodities on behalf of farmers, for which the arrangement is governed by contract. Again, within the same chain, there is one group of farmers who came together and formed an association, and others a cooperative.

Given the circumstances outlined above, the parties involved have to gather information on prospective and likely contracting partners, prices, and quality of resources involved (Rantlo, 2018), taking into account the screening, negotiating, administering and monitoring of contracts, all of which comes at a cost that is simply referred to as 'transaction costs' (Garrick and Aylward, 2012:539). However, since all these other functions were excised from the new supply chain after the new regulation was introduced, it could be argued that the transaction costs associated with negotiations, screening, and monitoring, to mentioned few, have been reduced and that farmers' proceeds from sales may be expected to increase.

4.5 SUMMARY

This chapter has laid out the environment in which the wool and mohair industry of Lesotho operates. Lesotho has the potential to attain competitiveness in the production and marketing of its commodities, if the prevailing environment can be utilised to the best advantage of those involved in the business. The operational environment is not entirely unfavourable, but it is not as advantageous as it should be. The education statuses of farmers are low and this can affect the farmers' ability to adopt and make use of technological strategies that could help them to

elevate their performance. For example, their aptitude for absorbing and transferring information might be challenged. Although the majority of farmers learn by doing (experience), education would bridge and merge the skills acquired through workshops with experience for effective use. On the bright side, farmers enjoy economies of scale through the use of labour (family labour), which gives them extra money to invest for other purposes.

The traditional practices of animal feeding could constitute a major reason for the industry's downfall. In recent years, where countries are faced with inevitable challenges like the natural endowments required for nutrition being diminished, the implementing of supplementary feeding and the keeping a controllable number of livestock would improve output. With improved output, productivity would increase, as would exports volumes. Recalling the relationships that exist between exports, productivity and sustainability, competitiveness will be guaranteed. The proper use of institutions like SADP and WAMPP would also help farmers to understand the business environment and management practices, as well as to learn how the resources at hand can be put to better use, efficiently and effectively.

Farmers need to consider in-depth and intensive analyses of the supply chain, and to familiarise themselves with the processes so as to find and identify opportunities that could not only improve their growth, but also facilitate particular functions of entities within the supply chain. Farmers, for instance, should not disregard the new policy that shortens the supply chain, but should take it as one of the strategies that serve to cut down the transaction costs of moving the products to the buyer, which were seen in the old supply chain (Figure 4.5). The proceeds derived from the reductions can be invested and geared towards making input purchases, which would result in the improved quality and amount of wool and mohair they could produce per season. Farmers could, for example, implement supplementary feeding, seeing that the rangelands are degrading.

CHAPTER FIVE: ANALYSIS AND DISCUSSION OF RESULTS

5.1 INTRODUCTION

This chapter presents the results and a discussion of the results. The chapter elaborates on the respondents' perceptions and analyses them in an endeavour to discover what factors determine the competitiveness of Lesotho's wool and mohair industry. The first section of the chapter reports the results of the RTA calculations. The RTA calculations for wool and mohair are considered in the context of the global market, and the RTA calculations are made relative to other countries against which Lesotho competes. The chapter particularises and analyses the results following Porter's Diamond Model, where each attribute of the model is analysed independently.

Section 5.2 discusses the RTA results and Section 5.3 generalises the results, based on different attributes of Porter's Diamond Model. The classification of the factors, both negative and positive, which are believed to have a bearing on competitiveness is covered in Section 5.4. In the closing remarks, the implications of the status of Lesotho's wool and mohair industry, given the factors discovered, are laid out in Section 5.5. In summary, the thread that connects the status position of the industry in the international space, the evaluation of factors that contribute to the competitive status, and the need for development of strategies that could be devised for competitiveness sustainability, will be evident when moving from one section to the next.

5.2 RTA OF WOOL AND MOHAIR PRODUCTION

This section gives the RTA results, computed using the export data particulars for various countries. The results reveal whether the countries under study have comparative advantage against each other in the exports of, and the global market for, wool and mohair (which is referred to as 'fine hair' in other nations). The results are shown in Table 5.1 and Table 5.2 below, which are separated into two sections for wool and mohair, respectively. The RTA serves as the foundation to the analysis by indicating the weaknesses and strengths within the industry. The RTA requires trade statistics from which to identify and measure trends, which leads to solid comparisons being made of status positions of respective nations' industries in the international space as far as competitive or comparative advantage is concerned.

Traditional theory, as has been acknowledged by Hoang, Tran and Tu (2017) explains the increase and decrease trends of competitive advantage. The competitive advantage is said to move back and forth within four categories – strong, competitive, medium and weak. This

movement tends to occur where export volumes to the world increase, or in cases of product specialisation. In this study, the exports and imports data on wool and mohair and all other products were used alongside the world's compilation of the same categories to calculate the RTA following the empirical procedure outlined in Chapter Three. The results are presented and elaborated upon below.

Table 5.1: RTA results for pertinent wool producing countries

	Lesotho	South Africa	New Zealand	Turkey	Argentina	Australia
2009	**124.00**	14.42	68.69	-0.20	3.26	47.24
2010	**145.73**	9.23	63.63	0.09	4.44	42.05
2011	**81.01**	9.43	59.73	0.30	2.74	38.99
2012	**225.45**	12.14	65.69	0.28	2.41	42.39
2013	**73.46**	13.63	64.13	0.76	3.06	43.28
2014	**122.37**	12.70	70.77	0.98	4.12	40.64
2015	**234.60**	11.92	68.88	0.74	3.78	47.98
2016	**118.71**	13.40	57.05	0.41	7.29	49.51
2017	**99.43**	14.85	40.26	0.89	4.50	50.16
2018	**91.50**	17.47	42.36	0.83	6.19	49.41

Source: Author's own elaboration, using Trade map data (2019)

Key: RTA>0 = competitive advantage; RTA =0 implies no competitive advantage; RTA<0 = competitive disadvantage

Individually, all the surveyed countries, from 2009 to 2018, depict trade advantage, except for Turkey which experienced a trade disadvantage in 2009 (RTA= -0.20). Lesotho shows a very strong trade advantage in the exportation of wool. The trend is positive throughout the ten-year period, with sharp fluctuations in some years. Drawing from the computation of the RTA, the index becomes positive if the RXA is greater than RMA, relative to the world product performance in the same product category. This implies that the country exports more of the product than it imports. This could also mean that the country with higher RXA has a sustainable productivity in the product that could be motivated by higher prices, as compared with other products in the same category or other categories.

Lesotho is not among the world's top producers of wool. Therefore, the expectation would be for the country to have a competitive disadvantage on wool relative to other countries, especially those that are major players in the industry. Contrary to this expectation, Lesotho reflects a relatively competitive advantage in wool production and exportation, followed by New Zealand, Australia, South Africa, Argentina and Turkey, respectively. It can be concluded that Turkey has the weak competitive advantage, reflected in constant RTA values that are a bit over zero. According to the results presented in Table 5.2 below, two of the six countries show trade disadvantages. South Africa's trade advantage trend decreased from 2009 to 2014, but drastic changes demonstrated by RTA <0 were experienced from 2015 to 2018. On the other hand, Turkey, in all the ten years under study, reflects trade disadvantages. South Africa from 2015 to 2018 and Turkey from 2009 to 2018 are considered to have experienced competitive disadvantage in comparison to the other four countries. Argentina and Australia, although on the lower ranks (RTA ranges steadily around 0.35-3.19), have established a steady competitive advantages throughout the years.

After the first three years under study, New Zealand's increasing trade advantage trend began to decrease significantly from 2012 onwards. These figures imply that, before 2012, it had medium competitive advantage, and thereafter the results suggest a weak competitive advantage. Exceptionally, RTA>0 suggests a trade advantage for Lesotho, with two years showing extraordinary indexes on the measure (2009 RTA=325.80 and 2017 RTA=404.88). Despite these extraordinary findings for these two cases, which might be considered to undermine the technique of analysis applied, the technique is still considered befitting for the study. These cases can be considered as outliers, which might have resulted from recording, measuring or unforeseen mutations resulting from the dataset's definition or manipulation. Lesotho shows a strong competitive advantage relative to all the countries in question (RTA>0).

Table 5.2: Mohair RTA results for pertinent countries

	Lesotho	South Africa	New Zealand	Turkey	Argentina	Australia
2009	**325.80**	4.16	9.79	-0.03	3.19	1.00
2010	**4.61**	2.99	9.64	0.82	2.57	0.68
2011	**9.19**	1.25	11.74	-0.10	1.09	0.46
2012	**8.77**	2.03	3.31	-0.33	1.99	0.60
2013	**62.43**	1.06	0.98	-0.11	1.19	0.39
2014	**13.02**	0.80	1.46	-0.17	1.84	0.55
2015	**81.12**	-0.00071	0.78	-0.20	1.63	0.57
2016	**64.02**	-0.54	0.57	-0.22	1.84	0.46
2017	**404.88**	-2.23	1.19	-0.08	0.96	0.37
2018	**3.78**	-0.30	1.02	-0.18	1.61	0.35

Source: Author's own elaboration, using Trade Map data (2019)

Key: RTA>0 = competitive advantage RTA =0 implies no competitive advantage RTA<0 = competitive disadvantage

In conclusion, Lesotho appears to have a competitive advantage in wool production, despite the suggestion that the world's production of clean raw wool by the countries included in Table 5.1, as supported by IWTO (2018), is dominated by Australia, followed by New Zealand, South Africa, and lastly Argentina, with no specific production information being available for Turkey and Lesotho. The same verdict is attained for mohair – Lesotho has, in comparison, a competitive advantage in the exportation of the product.

Addressing competitiveness and accepting definitions and methodology lies in the scholar's point of view. According to Ceptureanu (2015), scholars like Porter and Krugman support the idea that competitiveness is in itself the creation, sustainability and development of competitive advantage. In this regard, it can be concluded that all the nations under study have competitiveness in wool production and exportation. However, as far as mohair exportation and production is concerned, South Africa did show competitiveness, but this was lost during 2015–2018, and Turkey shows no signs of competitiveness for the product, at all. The other four countries are considered to have competitiveness, although this is much weaker than that of wool.

The transition from the RTA to Porter's Diamond Model analysis covered in section 5.3 below will build on the RTA, in that the results ascertained in the section will help to determine which of the factors under study contribute (positively or negatively) to the competitiveness status of the industry, as explored in the previous section (RTA analysis). In so doing, the research questions and study objectives will be addressed. The logic behind Porter's Diamond Model is none other than understanding why a certain industry achieves international success in the production of its respective products. The expectation is to find that more of the factors analysed under Porter's Diamond Model have a positive effect on the competitiveness of the industry. The nature of the industry places certain factor conditions, such as natural resources and infrastructure, as first priority. Having all or many of these factors as positive contributors will be a good sign for the industry's present and future sustainability.

As has been acknowledged in previous chapters, government has an important role as a facilitator for enabling the environment for businesses, and it is expected that the role it plays within the wool and mohair industry of Lesotho should allow and facilitate the performance and functioning of all other attributes of Porter's Diamond Model.

5.3 ANALYSIS OF THE ATTRIBUTES OF PORTER'S DIAMOND MODEL

As has been emphasised in previous sections, Porter's Diamond Model is used to assess how competitive a certain nation or industry is in the production and marketing of a certain product or commodity. In the context of Lesotho, the model will aid in identifying the determinants of the competitiveness status of the wool and mohair industry. This section depicts the results on the model with interpretations and discussions. Each attribute of the model is dealt with separately, in detail. This section will cover all internal and external components of the model, and detailed discussions of the parameters suggested by experts during the expert discussions will also be included.

The results are presented in Tables 5.3 to 5.6 for the internal attributes, and in Tables 5.7 to 5.8 for the external attributes, of Porter's Diamond Model. Table 5.9 covers the results of the parameters suggested by the panel of experts. Countries differ in the capabilities present within their territorial space, while products require various capabilities to flourish (Hausmann and Hidalgo, 2011). The capabilities that allow Lesotho to manage to have either a growing or declining comparative advantage are explored through the use of Porter's Diamond Model, and the results are discussed in this section.

Respondents were asked to select from a range of approval statements, which are indicated by the codes discussed in the methodology chapter. Based on their opinions regarding the specified statements on the questionnaire, their answers are then used to evaluate their views concerning the conditions of the Porter Diamond Model attributes, and discussions follow. Factor conditions are the inputs required by firms or industries for competition in the production of a product of specialisation (Mboya and Kazungu, 2015). These inputs are mostly formed, not endowed, as per the modern definition that factor conditions are abundant endowments that nations inherit for production. These factors include infrastructure, labour, and natural resources, to mention a few (Dlamini, 2012).

The statistics shown in Table 5.3 below indicate that, within the wool and mohair industry, factor conditions are in a poor state. The more pressing concern is about the major factors needed for production, which include water (mean=3.32), rangelands conditions (mean=2.69) and breeding stock (mean= 3.09). It is acknowledged in Chapter Four that most farmers rely on rangelands for feeding, and the results reveal that the industry is left wanting and susceptible to losses, as the major contributors required for better production are lacking. Additionally, this discovery is in line with the literature to the effect that climate change has drastically affected the natural resource endowments, thus forcing producers to consider supplementary feeding as an alternative option.

Infrastructure is amongst the most important factors that boost the productivity of firms at any level. The farmer respondents indicated that the infrastructure they use is provided by the government; for example, the health facilities, the shearing sheds, and the storage units at the shearing sheds, which have mean values of 3.76, 3.46 and 3.60, respectively. Thus, Lesotho's wool and mohair productivity is challenged in this regard. Judging from the results presented, there is more that needs to be done to ameliorate the impact that the unfavourable conditions bring upon the competitiveness of the industry. Those who are responsible must also maintain and improve on livestock extension services, and on developing skilled labour and entrepreneurial skills, as these three factors are the only ones that are enhancing the performance of farmers under this cluster.

According to the data received from the experts, the factor conditions validated have a score above 60%, with favourable rangeland conditions, skilled labour, and health facilities being validated by all the experts (100% score) as being highly important for the production of wool and mohair. Nonetheless, the rangelands and health facilities, although rated as highly

important by the experts, are not regarded by the farmers as having the best conditions necessary for wool and mohair production.

According to Schwab and Sala-i-Martín (2017), Lesotho, when ranked by the World Economic Forum (WEF), appeared to have been lagging behind in infrastructure, being ranked 120, 125 and 127 for overall infrastructure quality, natural infrastructure, and the reliability of water supply, respectively. This information, referred to as factor conditions or attributes in Porter's Diamond Model, is aligned with farmers' perceptions. It may be argued that the results are unexpected, as other authors as well as the experts have highlighted the importance of these factor conditions in the production of wool and mohair. Conversely, farmers believe they have all the operational and production skills needed for the production of wool and mohair. It may be argued that this is a good sign, as some nations of the world do not have access to these skills. For example, in South Africa, small and medium enterprises have suffered great losses due to their lack of the full set of operational and production skills, which resulted in many businesses failing (Naidoo and Urban, 2010).

It is important for nations to understand that entrepreneurial skills are important for promoting competitive advantage (Jusoh *et al*., 2011) in order to master high technologies and a forever-dynamic entrepreneurial culture. The farmers agree that they have, within their industry, labour that is skilled, especially at operational level (classing and shearing). The experts validated this factor as being extremely important. As has been mentioned regarding factor condition, firms, nations and industries must have the skilled labour necessary to beat their rivals.

Moreover, extension services serve to guarantee the transfer of knowledge, and to educate and advise farmers about practices and new technologies, as well as encouraging anticipated agricultural expansion (Schroeder *et al*., 2013; Fu and Akter, 2016). Excluding those farmer respondents with neutral opinions, only 64 farmer respondents felt that the extension services they receive, which are for livestock production, are not sufficient, while 83 of the farmers reported having received ample livestock extension services. This brings notice of a different controversy, that in developing countries, the majority of farmers face a challenge regarding ineffective extensive services, with gaps in livestock extension services, which have a negative bearing on the competitiveness of farmers (Lapar *et al*., 2012; Mwangi, Egesa and Matheri, 2016; Wambugu, Place and Franzel, 2011).

Table 5.3: Descriptive statistics on Farmers' perceptions regarding the conditions of factor attributes within the wool and mohair industry

Variable	Mean	Standard deviation
Factor conditions variables		
Adequate amount of water	3.32	2.33
Rangelands conditions	2.69	2.09
Adequate livestock extension services	4.04	2.32
Adequate entrepreneurial skills	4.73	2.09
Highly skilled labour	5.16	2.03
Access to breeding stock	3.09	2.23
Infrastructure:		
Best animal health facilities	3.76	2.29
World class shearing facilities	3.46	2.25
Best storage facilities	3.60	2.28
Well-developed national physical infrastructure	3.79	2.25

Source: Author's elaboration, Survey 2019

Key: 1= Major constraint 4= Moderate 7= Major enhancement

The domestic market is believed to be a driving force and a pathway to gain an understanding of the role of demand in moulding the industry's competitiveness. Drawing from the theory of demand elasticity, although different from Porter's perspective, it can be stated that cost, price or cost-price, and demand determine how much should be produced, at what quality, and for how much. This approach became a tool for assessing the competitiveness of the apparel industries of the USA and Japan, based on their demand conditions (Lee and Karpova, 2011). Demand conditions keep an industry afloat and competitive. A clear, practical example is that of Germany's aviation industry: due to globalisation, the giants of the industry (Airbus and Boeing) have been competitive in the business, as shown by the growing numbers in demand from cargo businesses and passengers for their services. Despite slow and low local participation by smaller players who focus on regional niches, their operations have prompted

local suppliers to develop new competences in order to also benefit from the demand conditions and so create grounds for expansion (Porter, 2010).

Table 5.4: Wool and mohair farmers' perceptions statistics on demand condition attributes

Variable	Mean	Standard deviation
Demand conditions		
Local demand for wool and mohair	3.95	2.32
Demand for high quality wool and mohair	4.21	2.01
Sophistication of local buyers	3.43	1.84

Source: Author's elaboration, Survey 2019

Key: 1= Major constraint 4= Moderate 7= Major enhancement

As depicted in Table 5.4 above, it is evident that the industry does not have promising domestic demand conditions, which might otherwise boost competitiveness, as indicated by the 3.95 and 3.42 mean values on local demand and sophistication of buyers, respectively. Farmers believe that the wool and mohair industry has domestic demand for high quality wool and mohair (mean=4.21). Judging from the information provided by the Department of Marketing (2018), as shown in Figures 4.5 and 4.6, it is evident that farmers do not have sufficient understanding regarding how their products move through the supply chain. Following the formal supply chain, the Lesotho's wool and mohair industry is solely export oriented, which is why it is believed that farmers are faced with information asymmetry.

The developing countries, more particularly African countries, are still faced with challenges as to how they might fortify their capacities to capitalise on emerging investment opportunities and trade. Moreover, considering the sparse existence of large-scale enterprises in LDCs, the LDCs' way to face the global challenges of competition is through SMEs. However, the lack of access to information and inadequate business training and skills constrain the performance of SMEs in nations like Tanzania (Aikaeli, 2012). In banking, for example, the presence of information asymmetry leads to the three possibilities, which are discussed below. First, informed banks shift their credit allocation, especially when their competitors are from outside

towards sectors that they know for certain impose greater adverse selection problems for their rivals (Gao and Zhu, 2015). The second is that less credit-worthy borrowers receive finance from informed lenders. Lastly, the portfolios of informed lenders can be worsened due to the increases in the uninformed lenders' competitiveness (Dell'Ariccia and Marquez, 2004). Therefore, it is argued that the existence of information asymmetry may result in opportunistic behaviour among players (Meissenheimer, Karaan and Vink, 2001) and severe consequences, like the global financial crises (Hamdi and Zarai, 2012; Lightfoot and Wisniewski, 2014), will prevail. It appears that there are discrepancies in the information that the Lesotho wool and mohair farmers receive regarding the demand for the commodities they produce. Their opinions are in contradiction with the literature, because the industry's commodities are fully absorbed by the international market and there is no sign of local buyers' participation within the industry whatsoever.

Table 5.5: Descriptive statistics on perceptions of farmers regarding the related and supporting industries conditions

Variable	Mean	Standard deviation
Related and Supporting industries conditions		
Existence competitive scientific research organisations relevant to the industry	3.25	2.28
Availability of competitive credit facilities	2.40	1.86
Availability of input suppliers	3.86	2.15
Adequate transport and logistics services providers	4.66	2.18
Existence relevant skills development and training services	4.58	2.28

Source: Author's elaboration, Survey 2019

Key: 1= Major constraint 4= Moderate 7= Major enhancement

The existing connection between the results depicted in the Table5.5 above and the literature suggests that the scientific research organisations that provide relevant information and services for Lesotho's wool and mohair industry are poor or inexistent. The absence of such organisations could imply that there is no room for technological advancement and innovation

for players within the industry, since public research organisations provide firms and industry players with useful knowledge for their economic performance and development. The results are in line with the report on GCI that indicates that Lesotho ranks 132, 116, 112 and 138, respectively, in innovation, research and development expenditure, the quality of research institutes, and scientific publications (Schwab and Sala-i-Martín, 2018) Furthermore, the capacity for innovation ranks at 130, the quality of scientific research institutions ranks at 108, and the university–industry collaboration in R&D ranks at 98 (Schwab and Sala-i-Martín, 2017). The ranks show a significant increase, except for university–industry collaboration in R&D, when compared with the rankings from the previous year, which were 126, 89 and 116, respectively (Schwab and Sala-i-Martín, 2016). Substantial to the strong link between economic growth and innovation, the competitiveness of regions of the world requires innovation that is accompanied by mechanisms that enable the transfer of developed innovations to survive in the increasing global economy (Gibson and Naquin, 2011).

Despite the pressure imposed on the capacity of a region/nation to convert R&D investment into innovation, and then innovation further into economic growth by socio-economic characteristics that are region-specific, regions that fail to adopt and respond to changes in innovation, new technologies, and globalisation, as well as changes in organisations that deal with production, are always left far behind in the quest for global rivalry (Andersson and Henrekson, 2015). Lastly, Lesotho still faces challenges in technological readiness. The ranks for 2016, although they were low as compared with other nations, were better than those for the year 2017. The ranks shows that the country is at 134 and 132 regarding availability of latest technology and FDI, and technology transfer, as opposed to 129 and 129, respectively, in 2016 (Schwab and Sala-i-Martín, 2016; Schwab and Sala-i-Martín, 2017).

A mean value of 2.40 suggests that financial institutions do not exist within the nation that might enable access to credit for farmers to improve and/or maintain their businesses. Although financial institutions are considered to be crucial for enhancing competitiveness, whether at the micro- or macro-level, it is evident that Lesotho is lacking in this aspect. These findings are in accordance with the global competitiveness index findings about Lesotho. Under pillar 9 (financial systems), Schwab and Sala-i-Martín (2018) reported that soundness of banks ranks at 140, the financing of SMEs is at 131, and venture capital availability ranks at 131. Arguably, there is no promise for competitiveness, given such conditions in finance. The literature supports the view that the capacity of farmers to perform better is constrained by financial restrictions, as is the case for Lesotho wool and mohair farmers, some of whom mentioned

during survey interviews that the one guaranteed means of attaining loans is if they borrow from the association, provided the money is going to be used for buying livestock. Farmers also mentioned that there are no products in place that cater for their specific needs within the financial institutions, which is supported by Motsoari (2012), who stated that farmers are faced with challenges of credit availability across the whole agricultural sector.

The industry also suffers strain regarding suppliers of inputs (mean=3.86) who are not present in the market. This means practically that farmers have no access to consistent and adequate inputs that might otherwise be invested into the business to attain better production results. On the brighter side, the industry has reliable transport and logistics providers (mean=4.66) and relevant development and training services (4.58), which represent positive contributors to the competitiveness of the industry.

Table 5.6: Descriptive statistics on farmers' perceptions with regard to the conditions of firm structure, strategy & rivalry

Variable	Mean	Standard deviation
Firm structure, strategy and & rivalry conditions		
Relationships and networks	4.71	2.11
National business environment (regulations)	4.64	2.20
All firm-size participation	5.27	2.03
Non-availability of substitutes for wool and mohair	4.15	2.54
Entry of new competitors	5.18	2.16
High quality production competition	5.59	1.99

Source: Author's elaboration, Survey 2019

Key: 1= Major constraint 4= Moderate 7= Major enhancement

The prevalence of firm structure, strategy and competition within the wool and mohair industry is proven to exist, and all factors have mean values above 4.00. Farmers agree that domestic business regulations allow them to take part in the business. Irrespective of the extent of their stock holding, the farmers claim that each farmer has an equal opportunity and chance to participate in wool and mohair production. The same goes for local competition and collective

action. The results indicate that farmers at all levels are allowed to participate and compete in business against one another within the industry. Although competition is considered to be a crucial factor for business growth and development, supply chain relationships nevertheless need to exist among players (customers, suppliers, producers, etc.) which the Lesotho wool and mohair industry does not lack, because an understanding of the significance of them means that firms will achieve their goals (Quesada, Gazo and Sanchez, 2012).

Taking the example of product service systems (PSS), inter-organisational relationships facilitate the supply networks that provide firms with effective mechanisms for the provision of PSS. These on-going relationships also provide a bridge for organisations to exchange resources, as well as providing the foundation for the successful flow of information and resource management across the whole chain (Lockett *et al*., 2011). Lastly, inter-firm relationships are important (Ferrer *et al*., 2010) in developing the competitive positions of chains, provided participants vigorously engage in managing them, rather than allowing external forces to move them in any direction possible.

Another dimension in which competition, strategy and firm structure may be promoted is through substitution, where the existence of products or commodities that perform the same function as the one under study may act as a motivation for farmers or suppliers to improve their performance. On the other hand, the non-existence of such alternatives may also act as an incentive, as seems to be the case in Lesotho wool and mohair industry in that, thus far, no other product with the same class of fibre is being produced, nation-wide. As it may be expected in the business arena that every single business entity will strive for perfection through product differentiation and distinction, farmers within the Lesotho wool and mohair industry have stipulated that they compete by producing wool and mohair commodities of high quality according to stipulated requirements. They do experience high numbers of farmers joining the industry, and it has been shown by the Ministry of Small Business Development, Cooperatives and Marketing (2018) that the numbers of farmers have been increasing throughout the years. Thus, their businesses are not cost-advantage, but product-distinction, oriented.

Table 5.7: Descriptive statistics regarding the role played by the government within the industry

Variable	Mean	Standard deviation
Role of government		
Restraining administrative regulations	3.46	2.36
Government's involvement in the industry	3.38	2.32
National suffocating tax policies	2.86	2.05
Trade polices	3.43	1.99
Public funding	2.61	1.94
Low level of trust in government officials	2.24	1.90

Source: Author's elaboration, Survey 2019

Key: 1= Major constraint 4= Moderate 7= Major enhancement

To a large extent, farmers feel that government goes beyond its role within their industry. The interviewed farmers claimed that government makes decisions on their behalf in matters that concern them, without consulting with them. Farmers feel inhibited, which is why the majority of them support the statement that their growth and progress is restricted. Drawing from the formal supply chain of wool and mohair (see Figures 4.5 and 4.6), farmers are faced with few choices as to whom they should sell their commodity. There is a limited number of players within the industry, both in the new and old supply chains. Despite the importance of wool and mohair to the livelihoods of farmers, the old supply chain had been suppressed under a series of structural changes that left many farmers feeling unfulfilled and disconcerted in the business.

This feeling has been deepened by the new regulations governing the formal channel for wool and mohair marketing and trading, which was introduced and brought upon the farmers by the government. Therefore, it may be argued in this case that government is restricting, rather than creating, an enabling environment for farmers. In the context of the government restricting rather than promoting the Lesotho wool and mohair industry, it is worth mentioning that the behaviour and efficiency of private and public stakeholders determine the institutional environment of a country, in that the framework (legal and administrative) in which the government, firms and individuals interact governs the quality of a country's public

institutions, and also has a forceful bearing on the country's growth and competitiveness (Schwab and Sala-i-Martín, 2016).

Majority of farmers mentioned that their industry is heavily taxed. They claim that they do not receive tax exemptions for the breeding stock they have to buy from South Africa. Overall, farmers give the impression that the role of government within their industry is not a productive one. They have concerns regarding the trade and tax policies, and they mistrust politicians and government official, as well as the funds that the government allocates for the public. As far as competitiveness is concerned, tax becomes one of the crucial factors to take into consideration as it has a repressive effect on product competitiveness, as has been the case with Indonesia's cocoa beans (Rifin, 2013). As a result of the implementation of an export tax in 2010 on cocoa beans, Indonesia's cocoa bean exports decreased, as did their competitiveness (Rifin and Nauly, 2013).

On the contrary, the report on global competitiveness index published by WEF in 2017 reveals that Lesotho ranked at 72, 58, 47 in diversion of public funds, public trust in politicians, and burden of government regulations, respectively. The rankings were much more promising in 2016, except for public trust in politicians, which was 60 (a drop by 3 points), while the burden of government regulations and diversion of funds were at 47 and 53, respectively (Schwab and Sala-i-Martín, 2016; Schwab and Sala-i-Martín, 2017). The differences indicated between GCI rankings and farmers' views may be caused by the fact that farmers only represent a portion of the whole population that is being interviewed.

Table 5.8: Descriptive statistics on perceptions of farmers with respect to the role of change

Variable	Mean	Standard deviation
Role of chance		
Natural disasters occurrences	2.11	1.54
Natural disasters impact	2.11	1.54
Change in government	3.29	2.32
Changes in government policies	3.01	2.24
Crime	1.75	1.44
Climate change	1.83	1.48
High levels of corruption in ministries	2.13	1.61
The level of corruption within the industry	3.08	2.14
Global political developments	3.13	1.76
Fluctuations in exchange rates	2.22	1.63
High occurrence of diseases	2.10	1.61

Source: Author's elaboration, Survey 2019

Key: 1= Major constraint 4= Moderate 7= Major enhancement

The role of change attributes, as has been acknowledged before, comprises those factors that, inevitably, neither farmers nor other stakeholders within any business setting have control over. For the wool and mohair industry of Lesotho, all of the role of chance factors under consideration have a negative impact on the industry's competitiveness. Among these factors, crime (mean=1.75) and climate change (mean=1.83) are considered the most detrimental. The implication, based on the results, is that the industry's stakeholders, particularly government (as a major role player), need to invest more resources in those factors that they can influence (crime, government policies, and corruption within both the industry and ministries) so as to curb the impact these have on competitiveness.

Farmers stated that have been experiencing natural disasters, diseases and negative effects from climate change. These are said to have brought about drawbacks on production and have negatively affected their performance, as well as the performance and development of the

whole industry. Farmers mentioned in interviews that they lose their stock due to the unbearable and unpredictable events following from climate change. Del Castillo *et al*. (2019) suggest that Lesotho is among the Least Developing Countries (LDCs) that have been affected heavily by climate change, so much so that varying rainfall patterns and extreme temperatures have been experienced. Furthermore, water resources and rangelands are also said to have been negatively affected by the climate change, with degradation being experienced in the latter (IFAD, 2014). As a result, the wool and mohair industry has suffered great losses due to this in terms of the quality and quantity of commodities produced, as the quality of nutrition has deteriorated, especially for farmers who depend on rangelands and natural water sources like springs and rivers for their production.

The contemporary era of globalisation has brought attention to the qualitative factors which are normally referred to as "soft factors", such as government policies, political stability, and educational systems, and it has been emphasised that, like the quantitative factors, they are equally important in determining competitiveness (Stevans *et al*., 2012). Farmers within the wool and mohair industry feel that their performance is negatively affected by government policies regarding the industry under which they operate. Their situation is similar to that of the South African wine industry, where it has been proven by the Agricultural Business Chamber's wine executive survey that, alongside support systems, services and government policies are constraining the industry's competitiveness (Van Rooyen, Stroebel and Esterhuizen, 2010).

The majority of farmers (91.88%) claim to be threatened by crime, especially theft. This is not new, and Detotto and Otranto (2010) argue that crime has a substantial effect on the society and the economy. They further added that, like tax, crime lessens the competitiveness of firms and reallocates resources, thereby creating inefficiency and uncertainty. Furthermore, farmers have concerns about corruption being one of the other factors that hinder their performance and growth. Like any inhibiting factor, corruption has a negative impact on national competitiveness (Sadaf *et al*., 2018) and has been proven to have a tendency to distort laws and obstruct public procurements, which weakens competitiveness (Mistry, 2012). Other countries of the world, like Russia and Mexico (Herciu and Ogrean, 2013), have also experienced high incidences of crime, corruption and theft. A clear example is seen in Indonesia. Sulisworo (2016) has stipulated that high levels of corruption constitute the root problem of Indonesia's competitiveness, and this has affected the quality of education, resulting in low participation

rates and the low quality of research and training, including the quality of school management and the education system.

The wool and mohair industry of Lesotho, as mentioned above, is export oriented. It is evident that global developments will have an impact on its performance and growth, in one way or another. Farmers' perceptions are in line with a study (Dlamini, Kirsten and Masuku 2014) that reported evidence supporting the view that agribusiness competitiveness in Swaziland is heavily impacted upon by political developments that happen elsewhere in the world. Lesotho's wool and mohair exports are absorbed by the international market, and prices are set in foreign currency, which fluctuates. When such fluctuations occur, farmers' proceeds from exports, which are calculated in their own currency, may be high or low, depending on whether their currency has appreciated or depreciated, respectively, against the standard foreign currency used. Farmers are aware of this and point out that they are affected by whichever shift occurs at any point in time.

Table 5.9: Descriptive statistics on perceptions of farmers regarding parameters outside Porter's Diamond Model suggested by experts

Variable	Mean	Standard deviation
Parameters suggested by experts		
Private sector involvement	4.44	2.18
Inexistence of culture of dependency	4.31	2.44
Strong collective action	5.69	1.76
Strongly enforced shearing sheds rules	5.98	1.69
Strongly enforced association rules	6.24	1.50

Source: Author's elaboration, Survey 2019

Key: 1= Major constraint 4= Moderate 7= Major enhancement

Regarding the statement (Schwab and Sala-i-Martín, 2016) that private and public stakeholders govern the legal and/or administrative institutional environment in which firms and government interact, the perceptions of the surveyed wool and mohair farmers indicate that the private sector is involved in their industry. The farmers also claim that their growth and performance are not enhanced by the help that they receive from the government. This is

supported by numerous studies on Lesotho's agriculture in the literature that examine the climate change effects that impel the government to assist farmers (Ratii, 2016; Molatoli and Xiaoyun, 2016; Rantšo and Seboka, 2019; Prifti, Daidone and Davis, 2019). These studies show that farmers who receive assistance from the government are predominantly crop-producing farmers. This raises questions regarding whether the government assistance is skewed, as it is understood that climate change effects have negative influences on livestock farming, as they do on crop farming.

It is expected that farmers, especially those who are participants in organisations such as cooperatives and associations, while pursuing their individual goals most of the time, will raise a collective voice regarding issues that involve their businesses at some point in their journey, when required. Much has been happening within the wool and mohair industry (as reflected by local newspapers, radios and other internet sources) since the introduction of the new agricultural marketing (wool and mohair) regulation. The trials and efforts of farmers to negotiate terms with the government, through the responsible ministries, show that farmers resort to collective action, even though the desired goal sometimes may not be reached. As seen in Table 5.9 above, collective action, and rules and regulations that govern the farmers' code of conduct and stipulate their terms and conditions within the association, prevail not only at the association level, but also at the shearing sheds, and all three contribute heavily towards competitiveness.

5.4 FACTORS THAT DETERMINE THE COMPETITIVENESS OF LESOTHO'S WOOL AND MOHAIR INDUSTRY

This section gives details regarding the factors (positive and negative) of the results presented in Section 5.3. The purpose of this section is to group, according to the opinions of respondents, the factors that contribute positively, and those that contribute negatively, to the industry's competitiveness. The elaborations on each group are made to provide greater understanding as to which of the attributes of the model fall under the positive or negative. The conclusion as to which factors fall under what category was based on the computation of the response mean covered in the previous section, and the classification is shown in Figure 5.1 and Figure 5.2 below.

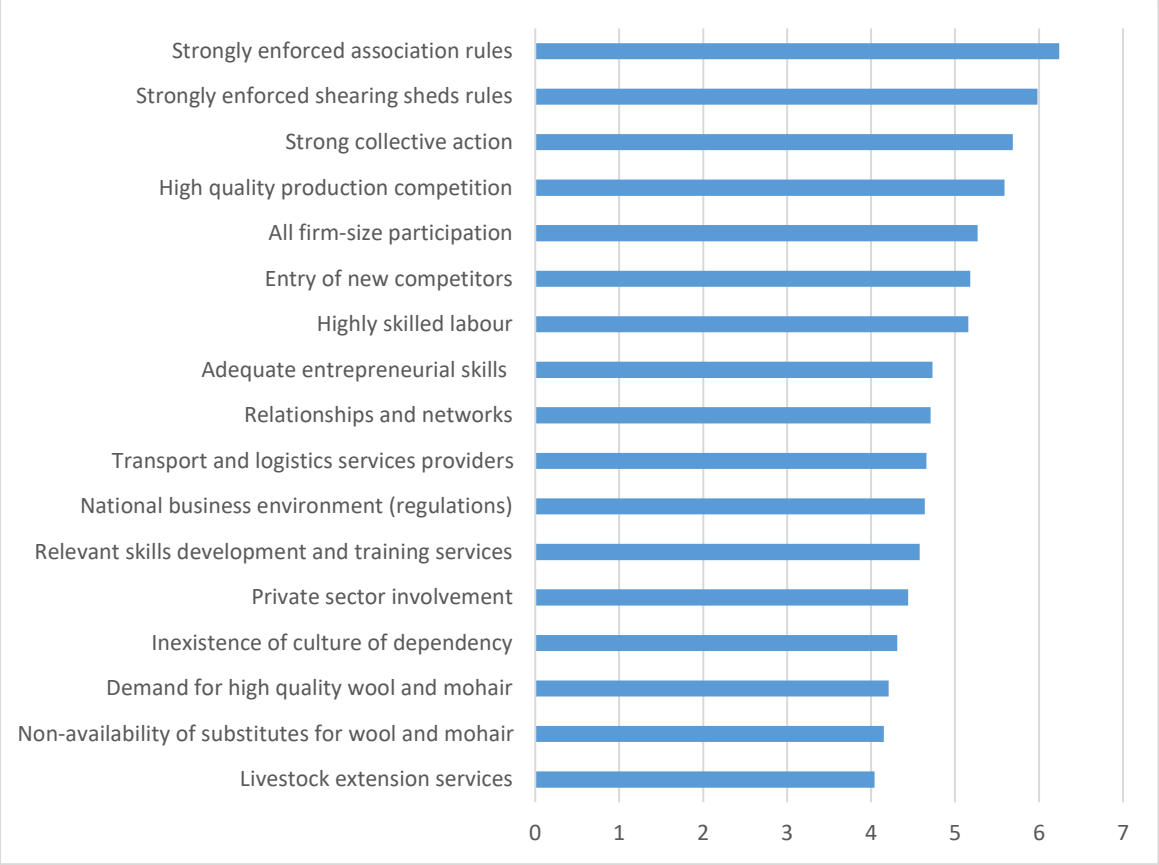

Figure 5.1: Positive factors that determine Lesotho's wool and mohair competitiveness based on farmers' perceptions

Source: Author's elaborations, Survey, 2019

Reflecting all the attributes of the Porter Diamond Model, Figure 5.2 shows the list of the factors that are believed to have a positive influence on the competitiveness of Lesotho's wool and mohair industry. It is crucial to highlight the fact that the computation is based on the farmers' perceptions. From the bottom up, the factors are depicted starting with the one with the lowest mean value, and the last at the top is the factor with the largest mean value. In total, these factors number 17. Out of the 17, three (3) are factor conditions, comprising highly skilled labour (mean=4.73), adequate entrepreneurial skills (mean=5.16), and livestock extension services (mean=4.04). Understanding the nature of the industry, it is expected that, above all else, farmers should have at their disposal the best and adequate factor conditions, although this is not the case with the wool and mohair producers in Lesotho. The shortages of these attribute raise greater concerns regarding how the industry might be able to beat the competition or, better still, fetch higher incomes.

The demand conditions have one (1) factor that enhances the competitiveness of the industry. The prevailing circumstances call into question the rate and the lengths that the industry can actually explore in order to innovate technologies and attain efficiency. Having local demand for high quality products alone cannot help the industry to sustain profitable international markets in the absence of local demand conditions that would prompt producers to query the environmental, safety and quality standards of the product they offer.

The industry under study is facing challenges with regard to related and supporting industries. These are institutions and businesses that should supply input and services to the wool and mohair industry in a cost-effective and efficient manner. Under this attribute of Porter's Diamond Model, only two (2) factors, transport and logistics service providers and relevant skills development and training services, prevail in Lesotho. It is evident that wool and mohair producers face challenges in having to outsource services and incur inventory and transportation costs. Concurrently, producers are limited by proximity demands, which in return affects their responsiveness to innovation and information exchange. The inaccessibility of other services, such as financial, research and scientific information providers, constrains participation of individual firms, thereby inhibiting their competitive advantage.

Contrary to the three scenarios discussed above, the industry appears to experience a lift from firm structure, strategy and rivalry. All the factors that fall under this attribute of the model are contributing positively to the competitiveness of the wool and mohair industry. Thus, all the crucial features that govern incentives and guidelines for competitive advantage are incorporated. Additionally, other aspects, such as rules that regulate individuals' behaviour at the shearing sheds and in the association, collective action, private sector involvement and the lack of a culture of dependency on government, have fulfilled the positive factors of four internal attributes of Porter's Diamond Model.

The linkages that work between the various attributes of the Porter Diamond Model, as acknowledged by Curran (2000), are extremely important, as opposed to when one attribute is working solely on its own. In that regard, not having the role of government factors under the list of positive factors is a cause for concern, in view of the fact that these factors exert influence on competitiveness and the internal attributes of the model. On the subject of the role of change, some factors of this attribute place pressures, either positively or negatively, on the competitive performance of industries or sectors, and the exchange rate is a case in point.

Moving on to the negative factors as shown Figure 5.3 below, it might have been expected that this group would consist of a lower number of factors, but the opposite is the case. A total of 29 factors made it on to the list. Starting at the bottom are those factors with far greater negative impacts upon the competitiveness, unlike in the case of positive factors (higher mean = major enhancement). Out of this number, eleven (11) are role of chance factors, six (6) of which form the top 6. The implication that can be deduced from this is that greater improvement can be made to competitiveness from this attribute alone, which is why strategies must be swiftly devised and implemented to fortify the other attributes of Porter's Diamond Model in order to pause and suppress potentially disastrous outcomes for the industry.

The factor condition attribute also hinders the performance of farmers and their competitive ability, as seven (7) of these attribute factors make up a segment of negative contributors, and this number exceeds the number of positive factor conditions discussed previously. The industry stakeholders need to strike a balance and mitigate the risks posed to the industry by the lack or inexistence of important factors like good rangelands and adequate water supply. The other two groups of factors are demand factors and related and supporting industry, though the number of factors are lower, at two (2) and three (3), respectively. All in all, the industry is believed to be hindered by the prevalence of many of antagonising factors to productivity. The enabling environment that fosters competition is also challenged, as the main role player (government) seems to be the reason why farmers face inevitable challenges that affect their day-to-day production and business operations. All six (6) factors inhibit the competitiveness of the industry.

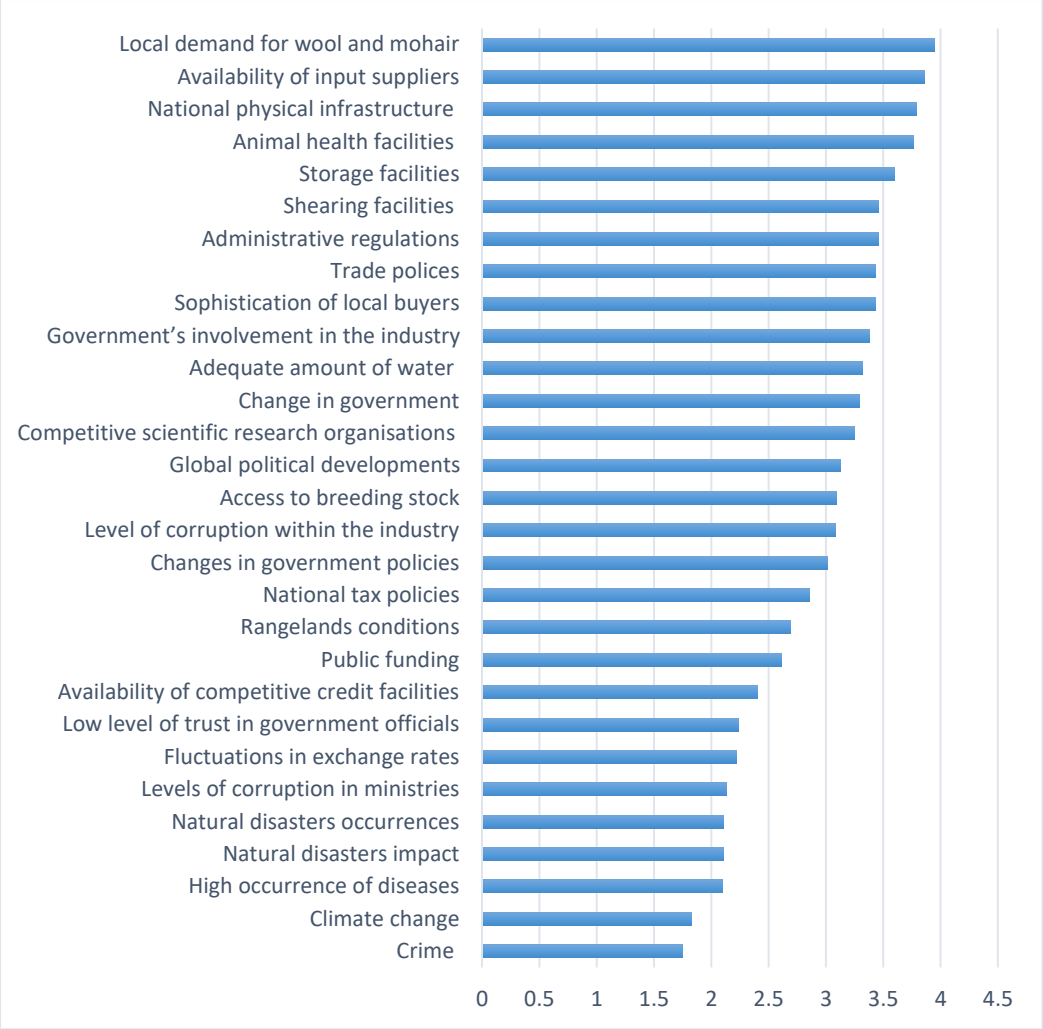

Figure 5.2: Negative factors that determine Lesotho's wool and mohair competitiveness, based on farmers' perceptions

Source: Author's elaborations, Survey, 2019

5.5 SUMMARY

The international competitiveness of a nation is related to the international competitiveness of firms (Herciu, 2013). The international competitiveness of firms/industries implies the capability to export higher volumes of goods and services in order to afford imports, which creates sustainable wealth for the economy, profitability for firms and welfare for citizens. Hence, international competitiveness is summarised by world market share (identified through the use of RTA index in this study). Thus, if domestic industries are competitive within the national borders, the chances are that their competitiveness will be evident even in the international context.

If perceived as a constructive concept, the perspectives on the competitiveness of Lesotho's wool and mohair industry are that:

- all the positive determining factors must be sustained,
- the industry has to be stimulated to explore and penetrate new markets, and
- all the negative determining factors should be mitigated or eliminated,

which will sustain the industry's competitiveness in the long run.

The analysis of Porter's Diamond Model and the calculations of the RTA have fulfilled the objectives of the study and have provided answers to the research questions. The objectives to: a) evaluate the competitiveness status of the industry on the global context, and b) find the determining factors of competitiveness were achieved successfully.

The weaknesses revealed in some of the Porter Diamond Model attributes suggest that the industry is more flawed than is actually perceived. The stronger the connection between these attributes is, the greater the outcome will be. Taking, for instance, the prevailing scenario that only the firm structure, strategy, and rivalry factors (all) contribute positively to competitiveness calls into question the effect of firm structure, strategy, and rivalry attribute on competitiveness in the absence or limited prevalence of other Porter Diamond Model attributes. It can be acknowledged that, individually, the attributes make a significant contribution towards competitiveness; however, it is the total contribution provided by the factors functioning together that is more relevant to the sustaining of better results.

Important issues that involve competitive advantage, competition and sustainability, such as value-addition, financing, and technological and innovation advancement, are underdeveloped within the wool and mohair industry. To reverse the current situation, proper investments made regarding these issues could alleviate the challenges of the industry, as has been outlined in the problem statement section of this study.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

This dissertation has presented the theory and analysis of competitiveness through a study of Lesotho's wool and mohair sector. The rationale for the study was to assess competitiveness in the context of improving the livelihoods of stakeholders, especially rural communities, and its use as an important tool to guide Lesotho to grow as a nation. This dissertation gives insight as to the determinants of competitive advantage by unpacking the factors that determine the competitiveness of firms, nations and industries. The general premise of the study is that industries within the different nations of the world are faced with different challenges to meet in the ever-changing competitive environment, and that, ultimately, competitiveness remains an essential ingredient for achieving business goals.

Innovation and technological developments are an integral part of the dynamic world, and those firms, sectors, countries and regions that do not adjust to these developments will suffer a decline in their competitiveness. Consequently, firms, industries and nations are compelled to seek and acquire the necessary physical, material and capital resources and knowledge to help sustain their long-term competitiveness. Nonetheless, challenges of endowment, policies and interactions among stakeholders, as well as other external factors, arise and introduce forces that curb performance and the growth of economic players. In the case of Lesotho, Porter's Diamond Model analysis identified the point that the wool and mohair industry is faced with challenges that inhibit its competitiveness (refer to Figure 5.2). These factors include declining or unavailable natural resources (water, rangelands), competitive credit and research institutions, as well as high occurrences of diseases. In the current state of agriculture, where eternal challenges such as those mentioned previously prevail, industries and firms need an enabling environment in which they can showcase their potential; therefore, it is with the help of other bodies, like government, that such industries could attain the platform and means to meet their ultimate goals (Esterhuizen, 2006). Thus, there is a need to analyse their competitiveness.

The goal of this dissertation was to analyse the competitiveness of the wool and mohair industry in Lesotho and to discover the factors that contribute to that competitiveness status, as well as to identify the implications of the particular outcome for the industry and the country as a whole. With a focus on the most crucial commodities in Lesotho's agricultural sector, the other goal was to lay, as a foundational platform, information and issues for future research regarding

the competitiveness of wool and mohair production performance and development in the country. The results were achieved through investigations described in two chapters that dealt intensively with a) the operational environment of the wool and mohair industries, and b) utilising farmers' perceptions to discover the strengthening and restraining factors regarding the competitiveness of the industry.

The rest of this chapter is as follows: the discussions on the research questions that were explored to address study objectives are covered from Section 6.2. The implications of the study for literature, further research, and policy are covered in Section 6.3. The shortcomings of the research and recommendations are covered in Sections 6.4 and 6.5, respectively.

6.2 DISCUSSIONS OF THE RESEARCH QUESTIONS

This dissertation explored concepts, definitions and measures of competitiveness, globally and nationally, by considering prior research regarding the competitiveness of different fields and different products. The methods and procedures, which have aided various scholars to achieve the objectives of their respective studies, have been dealt with in this dissertation. The research questions outlined in the dissertation were explored to address and inform discussions on the study objectives, regarding: a) the competitiveness status of Lesotho in the production and marketing of wool and mohair, b) the factors that determine the competitiveness of the wool and mohair industry, and c) the implications of that status. Using the justified methodologies and approaches, the objectives were achieved and conclusions were made. The following sub-sections discuss individual research questions.

6.2.1 Lesotho's competitiveness status in the production of wool and mohair

Determining the status of the industry entails undertaking an evaluation of the industry's competitive advantage in producing the commodities under study. Using the RTA formula developed by Vollrath (1991), the study set out a clear picture of the current competitiveness situation in Lesotho's wool and mohair industry. The results, covered in Chapter Five, show that Lesotho's wool and mohair industry has a competitive advantage in the production of wool and mohair, which is supported by the RTA values that are greater than 1. Lesotho's competitiveness status in both commodities implies that the industry is a potential and competitive supplier and exporter of wool and mohair, globally, relative to other pertinent countries involved in the analysis, especially in the production of wool. Additionally, throughout the decade under study, with exceptions in 2012 and 2015 for wool, and in 2009

and 2017 for mohair, the industry demonstrates strength in production, expressed by higher RTA values –although the trend is not constant. This, therefore, justifies the advice that the prevailing competitiveness status has to be maintained or improved for the benefit of all the stakeholders.

6.2.2 Factors that determine the competitiveness of wool and mohair production

The aim of determining the factors that facilitate the competitiveness of Lesotho's wool and mohair industry is to discover the country's strengths and weaknesses in terms of its ability to compete against other pertinent countries, either by maintaining or by improving the country's current competitiveness position. With the help of the model developed by Porter, elaborated on in Chapter Two, the research focused on inquiring about the perceptions of Basotho farmers within the wool and mohair industry.

The results of the study reveal that the positive record of the wool and mohair industry's comparative advantage is aided by the existence of several factors that enhance the competitiveness. These factors include collective action among the farmers, availability of skilled labour, strongly enforced rules at the association and shearing sheds, and competition between firms of all sizes, as well as the orientation among farmers to compete by producing a superior quality product. Notwithstanding this, the industry's competitiveness status is subjected to certain constraining factors too. These factors include crime, climate change, natural disasters, diseases, and lack of trust in government officials.

Overall, some sub-Saharan African countries like South Africa and Swaziland share similarities in their respective industries (e.g. sugar and maize) in terms of the factors that inhibit or contribute to their competitiveness, as has been studied by Van Rooyen and Esterhuizen (2010), Dlamini (2012), and Knowledge (2016). These studies identified factors that contribute towards the competitiveness of industries and products as being: intense competition in the local market, collective action, and the entry of new competitors, to mention a few. Lesotho is no exception because these factors form part of the factors that enable the competitiveness of Lesotho's wool and mohair industry. Moreover, there are occurrences in these countries that are similar to those which exist in Lesotho. For both Swaziland and Lesotho, the industries are enhanced by relationships and networks that exist among stakeholders and are inhibited by exchange rate fluctuations and the prevalence of small local markets. Industries in Lesotho and South Africa suffer from crime and inappropriate

government policies (regarding trade and tax), which does not offset the fact that their competitiveness is enhanced by the availability and the quality of skilled labour.

The competitiveness of agribusinesses and other industries is believed to be inhibited by low levels of trust in government officials, exchange rate fluctuations, and high levels of crime (e.g. animal theft). These factors coincide with the factors that this study found to have a negative impact on the competitiveness of Lesotho's wool and mohair industry. Most importantly, and in concordance with the studies done by Jordaan (2004) and Mokhethi (2015), the results of this dissertation harmonise with their findings that the wool and mohair industry is faced with the challenges of lack of proper feeding, disease outbreaks, and stock losses resulting from impacts of climate change that diminish natural resources such as water and rangelands, all of which have an influence on the competitiveness of the sector.

6.2.3 Possible reasons for the competitiveness status of Lesotho's wool and mohair

The conditions in the operational environment, the availability of resources, and the internal and external attributes in the surrounding environment and business setting are seen to promote and foster the performance of the wool and mohair industry, although significant growth in terms of value-addition has not yet been realised. It rests upon the stakeholders to preserve the industry's competitiveness status, in light of the factors determined by this study to promote and enhance competitiveness, and to work towards eradicating those with negative impacts. Additionally, it may be argued that although there are challenges within the wool and mohair sector, the industry manages to utilise the opportunities and endowments that they have as promoting factors, hence why the study discovered the industry to have a competitive advantage in the production of wool and mohair.

6.3 IMPLICATIONS OF THE RESEARCH

Much research has been done on competitiveness. Although it has been emphasised in the literature that there is no preferred methodology to describe and analyse competitiveness, this does not preclude academics from continuing to use tried and tested methods and follow their tools of analysis to broaden the body of research in the agricultural field. As the world progresses, the changing dynamics and consumer preferences will impel the implementation of new tactics to beat competition, as well as to meet the demands of customers. Hence, this study raises three implications that are specific and relevant to the context of the competitiveness of Lesotho's wool and mohair industry.

6.3.1 Implications for the literature

Developed countries have fully explored the use of competitiveness analyses to study different sectors and different products' competitiveness. However, competitiveness challenges still remain for the less-developed countries, especially in their agricultural sectors, since these sectors are considered as most vital instruments in poverty alleviation and economic growth in most countries.

This dissertation provides a new branch of information on the most important commodities that generate foreign revenue for the economy of Lesotho and transform the living conditions of the rural communities. Through the issues dealt with in this study, particularly on competitive advantage and Porter's Diamond Model, this research will change the ways in which the industry is perceived (in terms of performance and underlying factors) and encourage different approaches that the stakeholders, especially farmers, can utilise to reach their full potential. Furthermore, this dissertation will serve to re-emphasise the importance and value that the commodities under study have for the economy of the country, and its citizens at large.

The sparse body of research relevant to the industry and the sector at large will be complemented by the findings of this dissertation, which will add to the arguments raised in previous research regarding the wool and mohair industry of Lesotho. The findings may serve to provide solutions and answers as to why other nations prosper while others remain poor (Porter, 1990) and help countries with similar situations to devise strategies that will promote competitiveness.

6.3.2 Implications for further research

Growth and development are long-term benefits that almost every country would want to possess. Acknowledging the important sectors and industries within a nation must be among the top priorities of every government, policy maker and research institution, as much as it is a priority to stakeholders and consumers. Judging from the observations and findings of this study, it seems appropriate to undertake in-depth research to further explore the mitigation strategies which could help reduce the number of factors that negatively affect the wool and mohair industry's competitiveness, while maintaining and promoting those factors that foster it.

The competitiveness status of the country contradicts the way in which the country is perceived globally, in that Lesotho does rank globally among the top players in the production of wool

and mohair, but not as the best, which the RTA analysis covered in Chapter Five shows. Thus, in-depth research conducted on the formal channels that the commodities go through to reach the final buyer, performance, and documentation of important information of the industry may help to address the gap in information dissemination between the country and the world. A detailed supply chain analysis to examine the action environment may help stakeholders to reflect on their milestones and so develop better and proper ways of doing business and promoting competition to achieve better competitiveness sustainability outcomes. Countries with similar attributes and which are faced with the same challenges as Lesotho could find this dissertation relevant in helping in their situations and use the shortcomings and recommendations to grow and improve their competitiveness.

6.3.3 Implications for Policy

The government, being an integral actor in the formation of policy, reforms and amendments, must be open to the use of academic research as a tool for achieving informed decision-making and transformation. This study managed to reveal factors centred on policy and government that constrain the competitiveness of the wool and mohair industry. Such factors include corruption, tax policies, public funding, and lack of trust in government officials. The wool and mohair industry is the backbone of the economy and a source of livelihoods for many Basotho citizens; this fact justifies the need for intervention to reduce and eliminate those factors that inhibit the growth and competitiveness of the industry. Additionally, the role played by government, notwithstanding that it is considered an external attribute in Porter's Diamond Model, is crucial for the competitiveness of nations, industries and sectors, which justifies the need for the Lesotho Government to fully take caution of how they participate in promoting the competitiveness of the wool and mohair industry.

As a way forward, the government may utilise the findings of this study and thoroughly review existing policies to ascertain how they affect the competitiveness of the industry for purpose of considering the amendment or reformulation of relevant policies. Moreover, this study outlines the specific entities or sections where much attention is needed, and based on the nature of the industry, priority may be given to the most important aspects. Regardless of the ambiguity about competitiveness in literature and policies, Voinescu and Moisoiu (2015) argue that it is crucial to have in place, among other things, policies for SMEs that deal with the access by role players to finance and markets, as well as research and innovation space policies to promote excellence.

6.4 SHORTCOMINGS OF THE RESEARCH

Every endeavour has shortfalls, and with this dissertation, a serious shortfall was encountered with the dearth of relevant information available to use and support the findings. Broadly speaking, Lesotho's wool and mohair sector has or makes little information available on how the industry is organised and operates. This research study relied entirely on the information gathered from the farmers (in the form of their perceptions), which affects the general applicability of the results for practice across the value chain. The scope of this dissertation also has a shortcoming in terms of coverage, as only a part of Lesotho's industry has been considered. This limited the content of the findings unlike where different functions (along the supply chain) would have been included. Although it may be helpful, the approach employed in this dissertation might be considered to be inapposite, which suggests a need to undertake further research.

6.5 RECOMMENDATIONS

The recommendations presented are made in relation to results discovered by the study, and serve as being relevant to stakeholders within the wool and mohair industry of Lesotho. Nevertheless, other aspects which build on and support the findings were observed while carrying out the study, especially during interviews with farmers.

6.5.1 Farmers

To meet the demands, tastes and preferences of, and move in pace with, the consumers' changing living statuses, farmers are recommended to have and maintain 'safety nets' (in a form of funds). Farmers stated that they receive their money once in a year from sales of the commodities they produce. Although most of the proceeds may be invested back into the business or be used for other family purposes, saving for rainy days, either as a group or individually, would help them to have funds readily available when needed, especially in cases where the financial products that are available do not cater for or meet their needs. This will help farmers to stay in business and still be able to offer products that are better than their rivals' products.

Judging from the responses received regarding the demand conditions, farmers are recommended to invest greater resources in R&D in order to become aware of what is happening around them. With such information, farmers will have access to possibilities for adopting innovation and technological growth, which is an ingredient of competitiveness.

Furthermore, such information will support their decision-making ability, as well as broaden their knowledge in the field in which they are working. Thus, they would be equipped with the tools needed to change with time and to improve the products they are offer, while achieving competitiveness. The contribution made by R&D, as has been acknowledged by Doraszelski and Jaumandreu (2013), not only helps to ensure competitive advantage, but also to intensify the productivity of firms. Additionally, Dutrénit *et al*. (2010) acknowledged that knowledge derived from public research institutions (e.g. universities) contributes to the economic performance of firms.

Lastly, farmers are recommended to invest in value-addition measures (e.g. roving, hand knitting, and batting) through assuming some of these functions along the supply chain and so explore opportunities that will fetch them higher returns. As attested to by Dlamini (2012), the agribusinesses of Swaziland have benefited greatly from the availability of high quality products, which are believed to fetch higher returns and, at the same time, guarantee competitiveness. In that regard, wool and mohair farmers can elevate their scope and coverage in terms of product differentiations (even at a smaller-scale of production), which would allow them to venture into niche markets, like wool and mohair yarn, that have not been explored locally. With all these issues addressed, the industry could grow and maintain competitiveness, which in turn will contribute to the GDP of the country.

6.5.2 Government

The literature on Porter's Diamond Model discussed in Chapter Two suggests that the involvement of government in any business environment is of great value. The primary purpose and role for government in this regard is to be involved in the business arena through the provision and management of resources. This means that governments should create an enabling environment that encourages competition, growth and development.

Every sector, industry and player has specific needs. Policy makers are recommended to establish and create policies that will allow farmers to explore and make use of all available platforms to market and sell their products. As it has been found in this study that the competitiveness of an industry or commodity is not influenced by internal factors only, policies relating to other fields must be suitably developed or amended so that they will not have a deleterious influence on the industry. Policy makers must take note of four important issues that can transform the industry, based on the issues concerning the competitiveness of the industry: the financing of the industry, foreign direct investment, research and information

development and innovation, and technological investment and development. The presence of these four attributes of the model (Porter, 1990) within the business environment will boost the performance of the wool and mohair industry as crucial contributors to competitiveness, particularly for skills development, innovation and information dissemination.

Policy reforms must be implemented or refined to address trade and tax burdens, failing which, completely new policies must be devised that will allow for, and permit the design of, products that cater for growth. Farmers raised the concerns during interviews that they do not receive rebates on taxes for the costs of breeding stock (a prerequisite to membership in the association) that they have to buy from South African suppliers. Therefore, regulations on the marketing and trade of the wool and mohair, alongside inputs, should foster the local growth of participants, rather than inhibit it. Additionally, the industry needs trade and tax policies to be tailored specifically for the industry in order to cater for the needs of the role players. In the case of Lesotho, the wool and mohair industry is focused more on production than processing, and is still growing; hence, policies should be designed to promote production more than other functions within the supply chain.

The literature covered in this dissertation indicates that the combined and individual effects of policies related to innovation, skills development and trade have been of vital significance to many of the developed countries that have acknowledged that they have benefited from the implementation of strategies to enhancing competitiveness and have managed to stay competitive. Hence, there is an urgent need for the policy makers of Lesotho to address the four issues listed above, which are believed to have the potential to eliminate the factors constraining competitiveness within the wool and mohair industry.

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APPENDIX 1

TOPIC: **Analysis of Lesotho's competitiveness in wool and mohair production and marketing**

Dear respondent

You are invited to participate in a research study; the study conducted to assess the competitive performance and position of the Lesotho's wool and mohair industry. The research is partly based on the opinions or perceptions of those who will participate in it which will be wool and mohair farmers which are under the Lesotho Wool and Mohair Growers Association who have been in the industry for more than three years. The study is conducted by Senate Jacobina Khotso from the University of Pretoria, South Africa.

Participation in this survey involves responding to questions that will be asked and this should take less than an hour. The questions require you to provide information regarding the wool and mohair industry, your involvement in the industry and involvement of other stakeholders to the best of your knowledge and are presented in the form of a structured questionnaire. Please note the following when responding;

- This study involves an **anonymous** survey and participants' identity will not be revealed to any third party. Thus, even though your name will appear on the questionnaire, the information you provide will be treated strictly as **confidential.**
- Your participation in this survey is very important to us and to the study being a success. However, this is a **voluntary** exercise and you may choose not to participate, and you may stop participating at any time without negative consequences.
- Please respond to the questions as honestly, clearly and accurately as possible.
- The results of this study are solely for academic purposes as well as influencing policies that impact on agriculture and may be published in academic journals. If interested, we will provide you with a summary of the results of this study.

- Please sign this questionnaire to indicate that you understand the information provided above and that you are willing to participate in this study on a voluntary basis.

Respondent’s signature……

SECTION SOCIO-ECONOMIC CHARACTERISTICS

Gender: **Male** **Female**

Name of the respondent: **……**

District: **…….**

Highest level of education obtained: **……**

Years in business:…….

Size of your stock:

0-25 **sheep** 25-50 **sheep** 50-100 **sheep** 100-300 **sheep** 300^{+} **sheep**

0-25 **goats** 25-50 **goats** 50-100 **goats** 100-300 **goats** 300^{+} **goats**

Summary:

Competitiveness of an industry or nation does not solely depend on how much such a nation/ industry manages to produce and export. There are other underlying factors that play an important role as drivers/ parameter/ indicators (most qualitative) which basically form a platform or environment for the firms/ industries and nations to compete; which in this regard would be wool and mohair competitiveness drivers.

In the sections to follow, questions that will be asked will be based on such indicators/ drivers that are believed to make nations in their different industries to become competitive over other nations. For the research scope and purpose the structure or groups of such drivers is maintained.

SECTION B Porter's diamond model assessment

The questions under this category are meant to gather your perceptions on the presence or availability and conditions of factors that facilitates competitiveness at the production level upon which decision making on individual business are made.

Instructions:

- *PLEASE **TICK**(X)/ (√) the **ONLY** appropriate answer*

Table: 1

Conditions	Strongly	Disagree	Slightly Disagree	Indifferent	Slightly agree	Agree	Strongly
Factor conditions							
1. The industry role players have at their disposal the adequate amount of water (water supply) for production/industrial purpose.							
2. The current state/ capacity of nutrition (rangelands) for the small stock is adequate							
3. The industry role players (especially farmers) receive the adequate livestock extension services							
4. Farmers have entrepreneurial skills (enough knowledge) for wool and mohair production							

5. The labour (human capacity) absorbed by the industry (especially at the production level) is highly skilled							
6. The farmers easily access live animals (small stock)							
Infrastructure:							
7. The industry has at its disposal the best animal health facilities (veterinary facilities)							
8. The industry uses shearing facilities that are amongst the best in the world							
9. The industry has at its disposal the best warehouses in the world for product storage (storage facilities)							
10. The national physical infrastructure (main roads, feeder roads, bridges, etc) is well developed							

Demand conditions							
11. The local demand for the industries' products (wool and/ mohair) and /or services is high							
12. Local buyers demand high quality wool and mohair from the industry							
13. The local buyers are sophisticated and move in pace with the rest of the world's wool and mohair buyers							

	Strongly disagree	Disagree	Slightly disagree	Indifferent	Slightly agree	Agree	Strongly
Related and Supporting industries conditions							
14. The competitive scientific research organisations relevant to the industry exist within the nation							
15. Competitive credit facilities are available to finance the industry							
16. There are many suppliers of industry's primary inputs within the nation (genetic material, feeds, live animals etc)							
17. There is enough transport and logistics services providers (to move goods & services from one point to the other) for the wool and mohair industry							
18. The industry has at its disposal the relevant skills development and training services							

Firm structure, strategy and & rivalry conditions							
19. Role players within the industry have strong relationships and networks in and across the chain							
20. The national business environment (business regulations) allow domestic competition in the industry							
21. The national business regulations allows role players (farmers) of all sizes (small, medium and large scale) to compete and participate in the industry							
22. The industry has few to no substitutes for wool and mohair at the production level							

23. The entry of new competitors (farmers) almost never occur in the industry (e.g production level)							
24. The competition among farmers is based on producing wool and mohair of inferior quality							

	Strongly	Disagree	Slightly disagree	Indifferent	Slightly agree	Agree	Strongly
Role of government							
25. Administrative regulations in the country are restricting industry growth & development							
26. Government's involvement in the industry is adequate							
27. The nation's tax policies suffocate the industry growth							
28. Trade polices within and beyond national borders hinders the industry's performance							
29. Public funding (money from government) for the industry is inadequate							
30. The level of trust you have in government officials/ politicians is low to none							

Role of chance							
31. In the course of the past 10years, natural disasters have frequently occurred							
32. The natural disasters have impacted heavily on the wool and mohair industry (production)							

33. Change in government (e.g coalition) works in the industry's favour							
34. Changes in government policies regarding the wool and mohair production/ marketing has negatively affected the industry's performance							
35. The rate of crime (livestock theft etc) in the country is detrimental to the industry growth							
36. Climate change has brought negative impact on the industry at the production level							
37. There is high levels of corruption within the nation's ministries							
38. The level of corruption within the wool and mohair industry is high							
39. Global political developments affect the industry trading performance							
40. Fluctuations in exchange rates affect the industry role players proceeds (farmers)							
41. There is high occurrence of disease that negatively affect wool and mohair production							

	Strongly	Disagree	Slightly	Indifferent	Slightly agree	Agree	Strongly
Parameters suggested by experts							
42. The private sector is significantly involved in the wool and mohair industry							
43. Amongst the role players (especially at the production level), the role players depend heavily on government hand-outs, subsidies etc (culture of dependency is a norm)							
44. The role players within the wool and mohair industry work closely together in achieving individual goals (strong collective action)							

45. At the shearing sheds level, the group behavioural rules and regulations are strongly enforced.							
46. Rules and regulations that govern behavioural actions are strongly enforced at the growers' association level							

SECTION C Cost, source & impact assessment

The section will test the **source**, **costs** of accessing or obtaining and or maintaining the conditions mentioned in the previous section and the **impact** each category has on the individual farmer.

47. What is the **MAIN** source of water you use for your business?

Rain (harvested) ○ Stream/borehole (communal) ○ Tube wells (own)○ Other (specify)…….

48. Is rangelands your **MAIN** source of feeding for your livestock?

Yes ○ No ○ If No (specify)……49.

Do you give supplements to your livestock?

No○ Yes ○ If Yes, (specify)……..

50. From which sector(s) do you source your extension services? (***Select all that apply)***

Private ○ Government ○ Parastatal ○

51. Through which channel did you as a farmer obtain the skills to create, innovate and take risk in production decision making*? **Choose more than 1 option if so***

Training (workshops) ○ Experience (self-taught) ○ Formal education ○ Other (specify) …….

52.What is the form of labour absorbed at the following operational levels: ***Choose more than 1 if so***

	Family (unpaid)	Paid labour (Casual)	Paid labour (permanent)	Other (specify)
Herding	○	○	○	…….
Classing	○	○	○	…….
Shearing	○	○	○	…….

53. What is the source for infrastructure? ***Choose more than 1 if so***

	Government	Private	Parastatal	Other (specify)
Shearing facilities	○	○	○	……..
Animal health facilities	○	○	○	……
Storage facilities	○	○	○	……

54. In the past 10 years, how often has economically or financially straining disease outbreaks occurred?

0-3 times ○ 3-5 times ○ 5-7 times ○ 7-10 times ○ 10^{+} times ○

55. What impact has the outbreak caused on the industry (production stage)

Extremely constrained ○ Constrained ○ No impact ○ Enhanced ○ Extremely enhanced ○

Table 2.

56. How do find costs associated with the following factors? *PLEASE **TICK**(X)/ (√) the **ONLY** appropriate answer*							57. State the impact imposed by each factor on the business? *PLEASE **TICK**(X)/ (√) the **ONLY** appropriate answer*				
	Extremely expensive	Expensive	Affordable	Extremely affordable	No cost (free)		Heavily constrain	Constrain	No impact	Enhance	Extremely enhance
Water supply						Cost of water supply					
Nutrition (feeding)						Cost of feeding (nutrition)					
Extension services						Cost of extension services					
Entrepreneurial skills						Cost of entrepreneurial skills					
Labour						Cost of labour					
Warehousing						Cost of warehousing					
Shearing facilities						Cost of accessing shearing facilities					
Veterinary facilities						Cost of Veterinary services (facilities)					

Accessing credit						Cost of accessing credit					
Research & scientific knowledge						Cost of attaining Research & scientific knowledge					
Transport & logistics						Transport & logistics costs					
Training & skill dev						Training & skill development costs					
Buying live animals						Cost of buying live animals					

58. Give your view on the impact imposed by conditions listed below in totality

	Extremely constrain	Constrain	No impact	Enhance	Extremely enhance
Demand conditions	○	○	○	○	○
Firm structure, strategy & rivalry	○	○	○	○	○
Role of government	○	○	○	○	○

59. Are you satisfied with the industry's performance?

Satisfied wholeheartedly ○ Satisfied ○ Indifferent ○ Not satisfied ○ Not satisfied wholeheartedly ○

Support your answer……

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Thank you for your time!!!!!!