A BUSINESS MODEL FOR SUSTAINABLE SMME PIG FARMING IN THE CENTRAL FREE STATE OF SOUTH AFRICA

KINGSLEY NWENENDA ORLU

A BUSINESS MODEL FOR SUSTAINABLE SMME PIG FARMING IN THE CENTRAL FREE STATE OF SOUTH AFRICA

BY

KINGSLEY NWENENDA ORLU

DOCTOR OF BUSINESS ADMINISTRATION

IN THE

FACULTY OF MANAGEMENT SCIENCES
CENTRAL UNIVERSITY OF TECHNOLOGY, FREE STATE

PROMOTER: DR. JOHAN VAN ZYL, PhD

CO-PROMOTER: PROF DENNIS O. UMESIOBI, PhD

2016

DECLARATION

I, Kingsley Nwenenda Orlu with student number [redacted] do hereby declare that this research report titled: *"A Business Model for Sustainable SMME Pig Farming in the Central Free State of South Africa"* submitted to the Central University of Technology, Free State (CUT) for the award of a degree: Doctor of Business Administration, is solely my independent work and has not been previously submitted by me to any other university/faculty, and that all the sources that I have used or quoted have been indicated and acknowledged by means of references in terms of generally accepted and used principles of referencing.

Signed: _____ _____

KN ORLU **DATE**

DEDICATION

This study is dedicated to my parents late Chief Clinton Nyesom Orlu and Mrs. Celine Ihunda Orlu

ACKNOWLEDGEMENTS

The researcher wishes to acknowledge and express a profound gratitude to the following people for their invaluable support towards the actualization of this study:

- Extension officials of the Provincial Department of Agriculture and Rural Development for providing a reliable sample frame of the study population. These officers worked tirelessly to maintain communication between the participants for a successful questionnaire administration and interview.

- Dr. J. van Zyl, my promoter, for his determined efforts, and dedication to see the accomplishment of the study and his considerate manner of constructive criticism.

- Prof D.O. Umesiobi, my co-promoter, for his special interest in my academic progress and his encouragement that propels me to work.

- Dr. Luna Bergh, my language editor, for her useful advice and ensuring linguistic excellence.

- The NRF for providing finance to conduct the study.

- Mrs. Dudu Dlodlo for her distinguished assistance in providing data analysis.

- Prof Crispen Chipunza and Ms. Kgalalelo Maputle, the Faculty Research Manager and Secretary, respectively for providing research guidance.

- Mrs. Dorah Dibolelo Orlu, my wife, for providing clerical support and my children, Yelema and Aleruchi for their graceful comportment during the period of study.

Kingsley Nwenenda Orlu

Abstract

The lack of a reliable organisational approach and dearth of knowledge regarding a more effective business model resulted in cases of phenomenal business failures amongst pig farming SMMEs in the Central Free State Province of South Africa, as empirical evidence show. Therefore, this study develops a Commonage Cooperative Model (CCM) to enhance consistency in performance and sustainability. It expounds on the economics of scale derived through resourcing amongst the alliances of wider stakeholders. Hence, it advances existing models in agribusiness-related strategic management that supports Local Economic Development (LED). Being driven by the government policies on cooperative development, the model encompasses a value chain of small-scale pig farming SMMEs that can cooperate to improve competition.

A sequential application of questionnaire survey and interview approaches was used on 144 pig farming SMMEs across 4 district municipalities and 1 metro. Results justified the acceptance of 4 hypotheses and rejection of 9 others. Findings were based on marketing management activities, innovation management activities, performance and sustainability, and agricultural background of the Province. All null hypotheses were tested to determine if a number of variables were significantly associated with performance and sustainability. $H0_1$ was rejected when test results revealed that there was no significant association in terms of sales growth, and return-on-investment over the past 5 years. Regarding size of operation in terms of enterprise's gross profit (before tax) over the past 1-5 years, the null hypothesis was accepted. $H0_2$ was rejected when test results indicated that, with respect to enterprise diversification as well as enterprise indebtedness, significant associations existed between these variables and performance and sustainability. Existing marketing strategies had a significant impact on the performance and sustainability amongst the pig farming SMMEs; hence, $H0_3$ was rejected when results revealed that there was no significant association. $H0_4$ was rejected when test results indicated that there was a significant association between increasing partners of the business and enterprise performance and sustainability. $H0_5$ was rejected when test results showed that there was a significant association between the use of services of government Agricultural Extension Officers and performance and sustainability. $H0_6$

was rejected when test results showed that there was a significant association between innovation management activities and enterprise performance and sustainability. ***H0*$_7$** was accepted when results indicated that there was no significant association between size categories and enterprise indebtedness. ***H0*$_8$** was accepted given that there was no significant association between form of a business organization and enterprise current indebtedness. ***H0*$_9$** was accepted based on test results indicating that there was no significant association between current life cycle stage and enterprises currently indebted amongst pig farming SMMEs in the Central Free State.

The implications of these results are that the pig farming SMMEs need to adapt to a redefined and result-oriented organisational approach that increases their capabilities in the livestock business. Hence, the Commonage Cooperative Model promotes collective risk and diversity, which was lacking amongst the majority of them, and low resource commitment affected capabilities in many ways. Future research is recommended concerning the dynamics of parameter changes in the model.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

This work titled: A business model for sustainable Small, Micro and Medium Enterprise (SMME) pig farming in the Central Free State of South Africa, emerges from the agricultural cooperative perspective. It is based on the primary principles of user ownership, user control, and proportional distribution of benefits (Zeuli & Cropp, 2004:1), with a view to developing a sustainable business model that will assist the emerging (SMME) pig farmers in maximising profits using the commonage facilities in South Africa. Quests for sustainable farming practices are not new in South Africa, as farmers have had the course to integrate resources for the purpose of farming in the form of cooperatives or other kinds of alliances prior to the government's land reform initiatives. These mid-1990s initiatives include the Settlement Land Acquisition Grant (SLAG) scheme and the Land Redistribution for Agricultural Development (LRAD) scheme, which assisted previously disadvantaged farmers in entering agriculture and enhanced the development of commercial agricultural alliances. The problems of communal land management and the insufficiency of resources were identified by MacLeod et al (2008:71) as responsible for the failure of the majority of these SMME farms to meet their stated aims of commercial self-sufficiency. With an aim of addressing this phenomenon, there is currently a move by the Department of Agriculture and Fisheries and Rural Development in South Africa toward persuading farming entrepreneurs to form groups in order to access sufficient grants from the government for farming purposes (Mmbengwa et al, 2011:39).

A finding from a survey by Mmbengwa et al (2011:40) apparently indicates that SMME famers perceived sole proprietorship to be more profitable and sustainable than group faming, thereby contrasting the above view. Nevertheless, another finding from the same research indicates that the group approach was the ultimate and possible option

given the challenges of asset poverty of potential individual SMME farmers. Mmbengwa et al (2011:40) point out the recognition by emerging farm owners of the difficulty in managing an organization owned by many people whose interests could be very diverse. From the above scenario, management strategy and organizational model of the SMME farmers are two complementary variables that call to be addressed in developing a sustainable co-operative business model.

Ortmann and King (2007:219) emphasize that agricultural co-operatives play an important role in the development of commercial agricultural sector in South Africa. They are avenues through which local communities gain control over productive activities from which they derive their livelihood (Department of Agriculture, Forestry & Fisheries, DAFF, 2012:2). According to the International Cooperative Alliance (ICA, 2009:3), co-operatives are businesses owned and run by and for their members. Whether the members are the customers, employees or residents, they have equal say in what the business does and a share in the profits. Co-operatives are based on the values of self-help, self-responsibility, democracy, equality, equity and solidarity. Co-operatives are driven by values and not just profit; they share an internationally agreed set of principles, which are guidelines by which these values are put into practice (http://ica.coop/en/whats-co-op). The South African Government has acknowledged that co-operatives have potential benefits over other types of enterprises, hence the focus on their development (DTI, 2012:13). In 2004, a Cooperative Development Policy for South Africa was initiated (DTI, 2004:4); the policy statement deals with the promotion and support of developing/emerging co-operative enterprises. The government declared that it will provide and design relevant support through designing specific support measures such as incentives and capacity building for the co-operative sector (DTI, 2004:18).

Ortmann and King (2007:41; 220) raise concern over which co-operative organizational forms are the appropriate vehicle to reduce transaction costs and facilitate access of small-scale farmers in South Africa to input and product markets that could promote their development. They identified the conventional co-operatives and the new generation co-operatives as likely options for SMME farmers apart from the other forms of investment oriented firms (IOF), all of which have their merits and demerits depending on the circumstances under which they are applied.

1.2 PROBLEM FOCUS

The emerging livestock farming enterprises in the Central Free State of South Africa, most of which consist of farming supported Small, Micro and Medium Enterprises (SMMEs), in terms of the Comprehensive Agricultural Support Programme (CASP) of the National Department of Agriculture (NDA), are observed to be challenged by issues around growth from the inception, as many have continued to fail in the industry, hardly ever reaching the stage where they could be self-sustaining and still cluster in commonages (Buso, 2003:40; Atkinson, 2013:3), thus motivating government intervention, even in agricultural research.

There exists many models in strategic management, the application of which have proven ineffectual amongst pig farming SMMEs. The absence of an effective and reliable business model amongst these farming enterprises shows a negative influence on the overall strategies that increasingly jeopardise their core business operations. For the SMME livestock farming enterprises, poor performance that leads to early business turnaround, in terms of diversification, is observed to manifest as a problem associated with lack of a sustainable business model. In the process, the competitiveness of the pig farming enterprises is highly jeopardised where there is absence of sustainability in their business operations. In the absence of a sustainable business model, firms discover inconsistencies in core business process as the business logic does not align with the pillars of sustainability (Osterwalder, 2004:14; Joyce et al, 2016:1474), such as economic profit for the farm families, optimum utilization of the physical resources in the environment, and possible social benefits.

The inconsistency in performance and sustainability amongst these emerging SMMEs demotivate them, and as a result, they tend to be risk-averse in terms of financial commitment to the pig farming business.

1.3 PROBLEM DESCRIPTION

A number of major problems have been identified to be associated with lack of a sustainable business model among the pig farming SMMEs. Among them obviously includes the fact that there is difficulty in coping with frequent changes in government

policies and intervention programmes. This has been a challenge right from the apartheid era to the new democratic dispensation, coupled with the fact that agricultural policies have been dualistic, with the aim of redressing socio-economic imbalances (Oni, 2011:3; Mmbengwa, 2009:13). Some of these policies and interventions are occasionally subjected to reforms due to complexities in application. Government interventions in areas of policies and supports have been highly unsustainable, thereby causing distortions in development of effective business models for farming enterprises. These problems are escalated by the deregulation of the marketing of agricultural products; abolishing certain tax concessions favouring the sectors; reductions in budgetary expenditure on the sector; land reform; and trade policy reform (OECD, 2006:2).

Another major problem has been the wide-spread illiteracy amongst the emerging farming SMMEs and their workers. In the absence of adequate extension services, it is often difficult for them to share and learn about new farming technologies and then apply a sustainable business model. Many are not aware of the programme benefits that are available to them. Consequently, there is low productivity, errors, and accidents attributed to functional illiteracy.

Thirdly, many pig farming SMMEs apply different management principles, styles and marketing orientation that are unconventional and lacking uniformity in management, which also affect the way by which they create and capture value (Mmbengwa et al, 2011:38). Amongst the pig farming SMMEs, there is poor entrepreneurship and business management background, poor human resource management, financial management, marketing management, and so on. Therefore, there is an urgent need for a business model, especially for a sustainable emerging SMME pig farming business in the Central Free State of South Africa.

Problem statement: Amongst the pig farming SMMEs in the Central Free State lies some inconsistencies in performance and sustainability. Owing to the lack of a reliable organisational approach and dearth of knowledge regarding a more effective business model, there exist cases of phenomenal business failures amongst them as empirical evidence show. It is in the best interest of these SMMEs that this study now introduces

and advocates for a new direction toward the use of a *Cooperative Commonage Model*.

1.4 JUSTIFICATION FOR THE STUDY IN THE CENTRAL FREE STATE PROVINCE

The motive that provides the impetus for this study in the Central Free State Province arises based on the acknowledgment of the predominant role agriculture play in the province, as a major employer of labour, source of food security and a primary source of raw materials for industrial activities. Based on the empirical reports on the 2012 Mid-Year Population Estimate, the Province constituted about 5.2% of the total South African population, with an estimated population of 2 753 200 and a density of 21/km^2 (55/sq. mi) (Stats SA, 2013:3). In a Statistics SA 2012 report, the Free State provincial annual economic growth rate stands at 2.2% against a national growth rate of 2.5%. In terms of national GDP, another report has it that the Free State Province contributed about 4.9% and a national employment contribution of 5.5%, respectively (ECSECC Q1, 2013:1). The province has over 30,000 farms, which produces about 70% of the country's grain, a third of the entire province's GDP.

The Free State Province is 129 825 square kilometers, comprising 10% of South Africa's landmass. According to a study in 2003 by the Human Sciences Research Council (Buso, 2003:6), the total size of municipal commonage land in the Free State Province was found to be 112 795 hectares. The province is comprised of 4 district municipalities, 20 local municipalities, including Mangaung Metropolitan Municipality, and 84 towns. The economy of the province is dominated by agriculture, mining and manufacturing. It produces 18% of the national red meat.

According to the AgriSETA Sector Analysis Agriculture (2010:5), the Free State Province contribution to GDP, in terms of agriculture, was the highest among other provinces, amounting to 9.3 percent. It further indicates that 80% of South African land is used for agriculture and subsistent farming, out of which only 12% is arable, and the rest is used for grazing. According to this sectorial analysis, core areas of interest for the Free State province on agricultural development is agricultural diversification and agribusinesses (2010:5).

1.5 MOTIVATION FOR THE STUDY

The drive to embark on this study was stimulated by the need to find a sustainable solution for a practical utilization of the wide-spread commonage centers in the Free State province and across South Africa. Furthermore, this ambition was driven by the need to develop and demonstrate a business model that is capable of jump-starting emerging farming SMMEs which are struggling to survive and advance to some commercial status. A model that assures intending ventures of a possibility of resourcing among the alliances of communities for Local Economic Development (LEC), as well as leveraging on the recent government policies on co-operative development is highly anticipated.

The DAFF – Abstract of Agricultural Statistics (2013:6) reveals that between 2002 and 2007 the number of commercial farming reduced by 12.74%, indicating a continuous downward slope in the number of commercial farming enterprises from 45 818 in 2002 to 39 982 in 2007, which call for the need to grow the SMMEs in the agricultural sector for the interest of providing for food security and local economic development. In spite of this declining trend, from 2002 to 2007 the Free State Province is ranked the highest in the number of commercial farming enterprises in South Africa, with 7 515 in 2007 from a highest of 8 531 in 2002, as figure 14 indicates below. The analysis further reveals that the Free State is one of the three provinces with the largest proportion of households involved in agriculture.

Table 1.1: Commercial farming enterprises by province – 2002 and 2007

Province	2002	2007	Growth / Decline
Eastern Cape	4 376	3 896	- 10.97
Free State	8 531	7 515	- 11.91
Gauteng	2 206	2 378	7.80
KwaZulu-Natal	4 038	3 560	- 11.84
Limpopo	2 915	2 657	- 8.85
Mpumalanga	5 104	3 376	- 33.86
North West	5 349	4 692	- 12.28
Northern Cape	6 114	5 226	- 14.52
Western Cape	7 187	6 682	- 7.03
Total	**45 818**	**39 982**	**- 12.74**

Source: Statistics South Africa, 2008

The South African government recognizes that much can be achieved under the arrangement of the co-operative form of business organization, hence the emergence of the cooperative Act of 2005 (Act No. 14 of 2005), which conforms to the principles and values of the International Co-operative Alliance, following the co-operative development policy of 2004. As a highlight, prior to this policy development, the South African economy was just only emerging from the apartheid era, which saw the interruption in the development of survivalist enterprises, particularly among emerging entrepreneurs in the black communities. Most outstanding observation in such an era was the significant shift in community orientation away from domestic economic subsistence, impacting negatively on economic activities of the vast black population, creating a kind of risk-averse attitude to investment; given the incessant displacements and restrictions faced by the black population and consequent economic instability and uncertainties.

Global entrepreneurship improvement has been a major concern in recent years, particularly in the less developed countries with a natural resource factor-driven economy. The basis of this concern is in view of actions to obviate the incremental depletion of abundant natural recourses and to alleviate the core poor of the world population. The South African philosophy of *Ubuntu,* which is based on the believe in

a universal bond of sharing that connects all humanity and co-operation in communities, provides the principle that advances entrepreneurship and the alliances of people and entities, even in business organisational forms (Mugumbate & Nyanguru, 2013:92).

This ideology promotes partnership, and encourages the working together of members of communities to achieve respective common goals. The ideology promotes a shared vision and understanding that in working together, more can be achieved than when persons venture unilaterally. The philosophy assures government of a secure society in which to commit resources for the benefit of all, which is expressed in the establishment of community infrastructures such as commonages (common pasture land) for the promotion of community agriculture.

Tracing recent government policies and programmes on SMMEs from 2004 to 2013, which were developed to encourage co-operatives associations, indicates these instruments are considered to be veritable means of enabling the proliferation of co-operatives. It is intended to sustain emerging enterprises. The concern expressed in these policies and programmes by government justifies a study that should result in the re-evaluation and improvement of existing business models toward sustainability in order to calibrate the performance of farmers' co-operatives, keep them running, and initiate a new perspective in livestock farming businesses among emerging enterprises.

Models drive business and dictate strategy. It is not uncommon to observe frequent business failure due to trials and errors among practitioners; the grieve consequence remains the associated unimaginable waste in resources and other opportunity costs.

1.6 RESEARCH PHILOSOPHY

A research philosophy is referred to as a system of beliefs or assumptions by which data about phenomena are to be gathered, analyzed and applied. Pragmatism is the research philosophy that underpins the different principles of the research. For purposes of guidelines, standardization, compliance, etc. it is important to understand

the philosophies connecting a research, more so, the assumptions behind the research tools ultimately chosen (http://www.sagepub.com/upm-data/43179_2.pdf).

1.7 RESEARCH PARADIGM

Two distinct paradigms are common in academic research: quantitative and qualitative (Velez-Solic, 2008:1), http://www.unco.edu/ae-extra/2008/9/velez.html). Traditionally, some researchers confine themselves within the boundaries of these two approaches, either as quantitative researchers or qualitative researchers in terms of what Nyame-Asiamah and Patel (2009:1) and Onwuegbuzie and Weinbaum (2016:281) highlighted as "purists". Some researchers, however, choose whether or not to devote attention to paradigmatic justification due to its vagueness and the likelihood of immersing into the cloud of endless philosophies. However, this study sets out with a clear position on the issues of methodological identity expressed in paradigm, as well as recognizing its importance in guiding the flow of knowledge and understanding of the patterns and models applied in the study. Having outlined the problems and questions, the search for an appropriate means of addressing them calls for the choice of a paradigm, which is, a set of rules and regulations that establishes and defines boundaries; and indicates how to behave in those boundaries in order to be successful (Barker, 1992:32).

This work adopts a pragmatic paradigm. According to Ormerod (2006:892) this philosophical doctrine is traceable to Charles Saunders Peirce (1839-1914); following pioneering belief by Kant (1724-1804) and Schopenhauer (1788-1860). For him, it was primarily a philosophy of meaning, i.e. "*meaning of any concept that has application in the real world lying in the relations that link the experimental conditions of application with observable results"*. He reveals that it was William James who in 1898 introduced the term pragmatism to the world, giving Peirce as the philosopher through his ground-breaking book *Pragmatism: A New Name for Some Old Ways of Thinking,* published in 1907.

Pragmatism will serve as an alternative to previous paradigmatic approaches, thereby, providing the underlying philosophical framework for mixed-methods research (Cameron, 2011:99; Robson & McCartan, 2016:183) which gives due respect to apparent believe in both subjective and objective dimensions to knowledge (Laughlin,

1995:69) and promoting the combination of complementary strengths and non-overlapping weaknesses of quantitative and qualitative research methods (Onwuegbuzie & Johnson, 2006:1). This paradigm is based on the assumption that: (1) it will help improve validity and inference quality of the study, and (2) the argument that due regard should be paid to the history and social context, i.e. evidence-based conditions, of ideas is result oriented (Ormerod, 2006:892)

Some researchers promote the use of mixed-methods in research (Kroll & Neri, 2009:34; Robson & McCartan, 2016:176), most of who emphasize the fact that mixed-methods are best employed under pragmatism (Pansiri, 2009:85)

1.7.1 EPISTEMOLOGICAL AND ONTOLOGICAL ASSUMPTIONS

Ontology and epistemology are among the foundations on which a researcher may construct his research, considering their role in influencing the approach to theoretical perspectives and the methods utilized. Following which, Creswell (2009) points out that each paradigm has an epistemology. That is, a set of assumptions about the relationship between the "knower" and the "know(able)". This view was supported by Darlaston-Jones (2007:19) who stated that: "*the ability to identify the relationship between the epistemological foundation of research and the methods employed in conducting it is critical in order for research to be truly meaningful"*. Paradigms thus accommodate some assumptions about methods, by implication, these assumptions do not dictate which specific data collection and data analytical methods are applicable to the research (Onwuegbuzie & Leech, 2005:376).

Apart from the theoretical framework of this study, it seems obvious according to literature, that a gap exists which this research philosophical position fills. That is, the connection between the researcher and the problem area of the research and the assumption that guilds the process of knowing. This position spells out the personal orientation of the researcher toward the field of research that justifies his views. In as much as the research background is important, the philosophical background of the researcher with respect to the field of study is equally important. This goes a long way in understanding the relationship between the researcher's view of reality (ontology) and the meaning attributed to knowledge and its creation (epistemology).

Ontological assumptions are concerned with: what constitute realities, the position regarding how things really are and how things really work (Scotland, 2012:9). A reality can be explained and it's meaning as well. As noted in the argument of the constructionists, who are often referred to as the interpretivists or relativists, a reality is completely subjective, socially constructed and all knowledge derived from it is subject to interpretations. This ontological position is anti-foundationalist. By this ideological position, social phenomena are examined by observation and are not independent of our observation. For them, perception can affect what we observe. In contrast, the empiricist, the positivist or the foundationalist argue that everyone observe things in the same way, i.e. objectively, implying that without human interferences and mediation, knowledge about the world can be acquired. Here, in this study, priority is laid on finding causal statements about social phenomenon based on general laws. Regardless of meanings, explanations of phenomena are more important.

However, the epistemological and ontological roots of this study are fairly in-between (realistic) or pragmatic. In other words, sharing position from both sides of the forgoing philosophical assumptions. In this context, the ontological position therefore presupposes that the truth must be all about what works, as the basis of knowledge. As a complementary position, the epistemological foundation of this paradigm is based on the interest in accommodating and reconciling different perspectives through pluralistic means.

Table 1.2 Quantitative Versus Qualitative Research

Characteristics of quantitative and qualitative research			
	Quantitative		Qualitative
The role of theory in research	Deductive	⟷	Inductive
Epistemological orientation	Naturalitist, Positivist	⟷	Interpretive
Ontological orientation	Realist	⟷	Idealist, Constructivist
Characteristics of research approaches	Objective	⟷	Subjective
	Impersonal	⟷	Personal
	Reductionist	⟷	Holistic
	Generalisation	⟷	Uniqueness
Types of data	Quantifiers	⟷	Describers
	Numbers	⟷	Words
Source: developed from Bryman (2008) and Onwuegbuzie and Leech (2005)			

Table 1.2 (as adapted from Onwuegbuzie & Leech (2005:380), & Bryman (2008)), clearly indicates the major line of divide between qualitative and quantitative approaches for researchers in their chosen epistemological and ontological perspectives. Either approach has its pros and cons. Still, both approaches can possibly be applied.

1.8 OBJECTIVES

1.8.1 Main objective

The primary objective is to develop a business model for sustainable SMME pig farming in the Central Free State of South Africa.

1.8.2 Secondary Objectives

The secondary objectives were to:

1. Determine the key factors that lead to the sudden business failure syndrome amongst pig farming SMMEs in the Central Free State of South Africa.

2. Determine effects of management strategies on sustainable enterprise performance amongst pig farming SMMEs in the Central Free State.

3. Examine the relationship between enterprise size of operation and sustainable enterprise performance amongst the pig farming SMMEs in the Central Free State.

4. Evaluate the relationship between enterprise diversification and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State.

5. Provide marketing strategies that maximize sustainable enterprise performance amongst pig farming SMMEs in the Central Free State.

6. Formulate a business model that maximizes sustainable enterprise performance amongst pig farming SMMEs in the Central Free State.

1.9 RESEARCH QUESTIONS

1. What are the key factors that lead to the sudden business failure syndrome amongst pig farming SMMEs in the Central Free State?

2. Are pig farming SMMEs satisfied with existing management strategies regarding their performance and sustainability?

3. Is there a significant association between enterprise size of operation and sustainable enterprise performance amongst the pig farming SMMEs in the Central Free State?

4. Is there a significant association between enterprise diversification as well as indebtedness and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State?

5. Is there a significant association between existing marketing strategies and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State?

6. Will changing existing business models be supported amongst pig farming SMMEs in the Central Free State in order to maximize enterprise performance and sustainability?

1.10 RESEARCH HYPOTHESES

***H0*$_1$:** There is no significant association between enterprise size of operation and sustainable enterprise performance amongst the pig farming SMMEs in the Central Free State.

***H0*$_2$:** There is no significant association between enterprise diversification as well as enterprise indebtedness and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State.

***H0*$_3$:** There is no significant association between existing marketing strategies and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State.

***H0*$_4$:** There is no significant association between increasing partners of the business and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State.

***H0*$_5$:** There is no significant association between the use of services of government Agricultural Extension Officers and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State.

***H0*$_6$: There is no significant association between innovation management activities and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State.

***H0*$_7$: There is no significant association between size categories and enterprise indebtedness amongst pig farming SMMEs in the Central Free State.

***H0*$_8$: There is no association between form of a business organization and enterprise current indebtedness amongst pig farming SMMEs in the Central Free State.

***H0*$_9$: There is no significant association between current life cycle stage and enterprises currently indebted amongst pig farming SMMEs in the Central Free State.

1.11 DESIGN AND METHODOLOGY

This design involved an integrated qualitative and quantitative, non- experimental approach.

1.11.1 Design science

This research methodology integrates basic aspects of the design science, using its framework to demonstrate the design of our proposed commonage cooperative model. The study recognises the importance of following a scholarly acceptable approach to achieve sustainable model outputs. Design science was pioneered by Richard Buckminster Fuller in 1963 (McHale, 1965:1), whereby he defined a design science as a systematic form of designing. The concept was made popular in 1966 by S. A. Gregory (Gregory, 1966), who drew a distinction between scientific method and design method. Over the intervening period, its meaning as the scientific study of design now predominates. March and Smith (1995:254) see a design science as an attempt to create things that serve human purposes, and therefore provides the following framework with two alignments of coordinates, namely research activities and research outputs (see Table 1.3). Models require integrating interrelated constructs. In fact, Osterwalder (2004:5) considers a model as a set of propositions or

statements expressing relationships among constructs. Business model research is a systematic problem-solution inquiry approach.

The design science research framework shown in table 1.4 below is driven by the distinction between research output or artifact and research activities (De Villiers, 2012:244). According to March and Smith (1995:251), research outputs are made up of construct, model, method and instantiation. On the horizontal dimension lies the research activities, which include build, evaluate, theorize and justify.

Constructs in design science constitute various conceptual elements, typically those considered to be subjective rather than empirical and are used to describe problems and specify their solutions within the domain. They form a system of assumptions and standards within a domain. A *model* in this context is often a set of propositions expressing relationships among constructs. A model is viewed as a description based on simplified conceptual representation of a system. In a utilitarian context, a model serves as a standard by which an output is to be demonstrated or measured. A *method* is a set of steps used to execute a task which is based on a set of underlying constructs. An *instantiation* is the realization of an artifact as it operationalizes the feasibility and effectiveness of the constructs, models, and methods it contains.

Regarding the research activities on the horizontal dimension of the design science framework, March and Smith (1995:254) and De Villiers (2012:244) identify twofold build and evaluate categories. Build refers to the construction of the artefact, demonstrating the feasibility of constructing the artefact. By evaluate, we determine criteria and the assessment of the output's performance against those criteria in order to ensure the extent of progress. Along the same dimension, we finally *theorize* and then *justify* by applying a substantiated explanations about the characteristics of the artefact and its interaction with the environment that results in the observed performance. These activities are captured in table 1.3 below.

Table 1.3: Design science research framework

RESEARCH ACTIVITIES

RESEARCH OUTPUT	Build	Evaluate	Theorize	Justify
Construct				
Model				
Method				
Instantiation				

(Source: Osterwalder, 2004:5)

1.11.2 Non-experimental qualitative design

By means of a qualitative study, detailed empirical evidence about factors responsible for the sudden business failure syndrome amongst pig farming SMMEs in the Central Free State Province were provided. This design required the interview method. These enterprises replicated divergences across the livestock producers in the Free State province with respect to existing business models, which described the rationale of how they create, deliver and capture value (Osterwalder & Pigneur, 2010:2) within a network of producers, suppliers and consumers (Lundy & Macgregor, 2008:1). This component of the research focused on ascertaining contemporary views amongst pig farming SMMEs in the Central Free State Province regarding size of operation and survivability, and the effect of livestock farming diversification on sustainability, business management strategy and marketing strategies. By reason of a dialectical method, generated qualitative data support as complementary perspectives when interpreting the outcome of the investigation that was conducted through a non-experimental quantitative design. This outcome helps to address strategies to be developed to maximize expected annual financial returns on investment. These alternative perspectives can show empirically factors that lead to sudden business failure syndrome amongst pig farming SMMEs in the Central Free State Province.

1.11.3 Non-experimental quantitative design

This design required a survey method. By means of questionnaire, information relating to marketing systems such as the marketing mix strategies, marketing concepts and sales records was gathered.

To support the questionnaire, existing quantitative data for the study, covering for a period of 10-years, the livestock database of the National department of Agriculture, and the commonage database of the Department of Rural Development and Land Reform. Chi-square (X^2) test were used to determine significant difference between results. Data to determine return on investment, sustainability and profitability of pig farming SMMEs were generated by means of the Statistical Package for the Social Sciences (SPSS 16.0).

1.12 POPULATION OF THE STUDY

Singleton Jr., Straits and Straits (2010) emphasize that defining a population is a two-step process, in which, first, one must clearly identify the target population, and (2), the practical requirements of drawing a sample. The study identifies a population size of 223 pig farming SMMEs, basically, smallholder pig farmers including those in the commonages, all in the Free State Province that evolved from one stage of a historical life cycle to another.

1.13 SAMPLE SIZE AND SAMPLING TECHNIQUE

A population element of pig farming SMMEs was selected by means of sampling (Onwuegbuzie & Collins, 2007:281). Convenience sampling was applied. A 2012 sampling frame of the South African Pig Producers Organisation (SAPPO) Free State membership was applied. Sampling frame provides access to the individual elements of the population under study (Sapsford & Jupp, 2006:28). Apart from the SAPPO sampling frame, the livestock database of the National Department of Agriculture, and the commonage database of the Department of Rural Development and Land Reform, the existence of commonage centres, as a common pasture land (Anderson & Pienaar, 2003:2) and smallholder farming, as the backbone of African agriculture and

food security (Dixon et al, 2004:Internet; Gollin, 2014:8) all across the Free State Province was considered significant in improving confidence in the study sample. Thus, a total sample size of existing 144 pig farming SMMEs was recruited from a population size of 223 in seven municipalities, namely:

- Kopanong
- Setsoto
- Letsemeng
- Masilonyana
- Nala
- Mangaung, and
- Mantsopa.

The following influences on the sample size were considered: 1) the extent of precision desired, 2) the size of the population, 3) relative homogeneity and heterogeneity, 4) available resources, and 5) type of sampling design (Singleton Jr et al., 2010); (Strydom & De Vos in A. S. De Vos, 1998:191). According to Fowler (2009:44) “a sample of 150 people were described as a population of 15,000 or 15 million, with virtually the same degree of accuracy, assuming that all other aspects of the sample design and sampling procedures were the same”.

1.14 DATA COLLECTION TECHNIQUES

1.14.1 Qualitative data collection technique

The interview method of data collection was applied for qualitative data collection (Creswell, 2009:6). The person-to-person approach was applied. Predetermined structured questions and open-ended conversational format supported the gathering of in-depth information about the participating enterprises and their operating environment. Same questions are considered of all participants. The use of digital recorder ensured data storage and easy analysis. Note-taking during interviews was be done.

To conform to the principles of validity and reliability, survey items were piloted on study participants to test the reliability and validity of the instruments. This was administered to 10% of respondents not included in the sample and pretested. According to Gray (2004:194), this helps to reduce the incidence of non-response to the questionnaires.

1.14.2 Quantitative data collection technique

Survey method of data collection was applied for quantitative data collection by means of a semi-structured questionnaire. Survey items were piloted on 10% of pig farming enterprises not included in the sample to test the reliability and validity of the instruments. According to Gray (2004:194), this helps to reduce the incidence of non-response to the questionnaires.

The questionnaire contained a variety of questions. Firstly, open-ended questions were used, specifying expected response. Closed questions with a set of pre-designed replies such as ‘Yes/No, ‘True or False’, multiple-choice responses complemented those, and few other kinds were category questions, ranking questions and the Likert-scale questions. Cannell (1985) in Gray (2004:194) argues that using a variety of such formats adds interest and can even help increase questionnaire response rates.

Priority was given to a thorough use of existing internal secondary data before turning to external sources to facilitate numerical representation of observation and statistical analysis (McQuarrie, 2012:53). A descriptive quantitative non-experimental design was used to establish associations between variables (McMillan & Schumacher, 2006:150). Internal sources included reported annual financial records and general reports on marketing and management. External sources included data from existing periodicals and literature from provincial and national departments and other institutions.

Data from the experimental protocols were then translated into numbers, which could then be displayed and statistically analysed. Systematic attempts were made to collect measurable data in relation to agricultural co-operatives, commonages and support

systems, pig production system input and output, and agriculture market indicators. Four (4) trained field workers were assigned to administer questionnaires.

1.15 DATA ANALYSIS TECHNIQUES

The research design provides for two approaches in the data analysis. Both the quantitative and the qualitative approaches will be demonstrated. Based on the qualitative approach, the results will be presented with consideration that the data are subjective, interpretative, descriptive, and ample. Responses will be subjected to descriptive categories using short labels represented in coded themes. The qualitative analysis will simply adopt a thematic coding analysis according to Trochim (2006:Internet).

In terms of the quantitative data analysis approach, an analysis that will help in the overall understanding and operationalization of a sustainable co-operative model will equally be guided by the research paradigm and will involve the use of descriptive and inferential statistics. According to Gray (2004:297) descriptive statistics involves the creation of a summary picture of a sample or population in terms of key variables being researched; and on the other hand, with respect to accepting and rejecting hypotheses, inferential statistics are used to make inferences from the sample chosen to a larger population (Gray, 2004:301).

To comply with statistical requirement in testing hypotheses, since ordinal data were generated from category, ranking and Likert-scale questions; a non-parametric statistic were used, hence the choice of Chi-square (X^2) test were used for hypothesis testing. Generated data were condensed and made manageable; displayed and described by the use of means, frequency distributions, pie charts and bar charts in a systematic way (Frankfort-Nachmias & Leon-Guerrero, 2011:21). Chi-square (X^2) tests were used in testing hypotheses and to determine significant differences between results. Data to determine return on investment, sustainability and profitability of pig farming SMMEs were generated by means of Statistical Package for the Social Sciences (SPSS 16.0).

The data were collected in other forms and subsequently converted into ranks. Co-relationship between variables were measured. The Chi-square was used to determine significant difference between expected and observed frequencies in one or more categories (McHugh, 2014:143).

1.16 ASSURANCE OF CREDIBILITY

1.16.1 Reliability

Draft questionnaire were subjected to a demonstration of reliability test. In this context, reliability refers to the repeatability, stability or internal consistency of a questionnaire (Bird, 2009:1310; Heale & Twycross, 2015:66). Three popular methods of measuring reliability of a questionnaire are 1) test re-tests, 2) split-half method and 3) internal consistency method (Cohen et al., 2012:15). By means of Item-total Correlations, internal consistency was evaluated. In this context, items found to be measuring similar concepts formed the basis for the total score in a particular section. Reliability tests finally went through a Test-retest stage to ensure stability. The same questionnaires were used during the pilot study for selected respondents to yield some degree of correlation in responses.

1.16.2 Validity

Validity is one of the most important characteristics of a good research instrument, such as questionnaire. This is the degree to which a questionnaire reflects reality, in other words, is the questionnaire measuring what it is purported to? (Rattray & Jones, 2007:238). There is a continuum of standards which may require a demonstration of validity over a draft questionnaire to a certain degree according to given circumstances. Various tests of questionnaire validity were taken into consideration, especially those relevant for questionnaire methods, which according to (Brinkman, 2009) were:

Content validity: whether the measure captures the full content of the construct which are relevant to the basic research questions and objectives or are some dimensions left out? There was an agreement among experts consulted regarding the fullness and

richness of the content of the questionnaire at the draft stage. Thus, the questionnaire content include essential variables addressing the research questions and objectives.

Face validity: whether the measure look valid; a combination of two approaches were used, draft questionnaires were first sent out to both experts in the field of study and potential respondents through the pilot arrangement to evaluate the measurement criteria in terms of the reality in livestock enterprise operations.

Criterion validity: this involved correlating test scores with other established test standards that also measure the same subject matter to confirm whether the result of a measure agrees with another valid sources. This test measure was concurrently divided to serve a predictive role in the questionnaire validity test, whereby, a significant correlation was found.

Construct validity: whether the measure measures the unobservable, theoretical construct being hypothesized. This involved using a measure as an index of a variable that is not itself directly observable (e.g., diversification, life cycle, etc.) (Westen & Rosenthal, 2003:608).

1.17 TRIANGULATION

Triangulation is the act of employing a mixed-methods approach for a deeper understanding of findings and increased confidence in their accuracy in a research design (Essink, 2013:27 & Nicdao, 2015:4). The pros and cons of various research methods are believed to be mitigated when the methods were triangulated. Supporting the results of one method by another improves assurances of findings in research studies rather than exclusively relying on one method over the other. Triangulation in research implies a demonstration of methodological complementarity, whereby a mixed-methods design defined the triangulation technique at the point of integration of at least two or more theoretical perspectives, methodological approaches, data sources, or data analysis methods (Thurmond, 2001:253).

This study demonstrates a mixed-methods approach that constitutes triangulation. The intent of applying triangulation in this study was to counterbalance the deficiency

associated with handling complex questions, dissimilar data, poor quality data, insufficient data, trend data, rapid response etc. (Yeasmin & Rahman, 2012:158). The study applied triangulation for the interest of cross-validation across data sets and to enrich, refute, confirm and to explain the model.

1.18 LIMITATIONS OF THE STUDY

The interview schedule and administration of questionnaire materials did not attract a 100% response rate, which may have had a certain influence on the degree of confidence in the reliability of the findings of the research. Nevertheless, a precautionary arrangement was made to mitigate any lapses by reaching out to an outstanding sample size of population of pig farming SMMEs.

1.19 ETHICAL CONSIDERATIONS

The study was done in line with the following ethical considerations:

1. The principle of voluntary participation: this work considers the fact that respondents must not be forced into participating in this research in order not to violate the rights of individuals and entities.

2. The principle of confidentiality: the research must be carried out taking into consideration respect for respondent's privacy; facts and private details about respondents will be kept within the research and will not be exposed to another respondent.

3. The principle of informed consent: this can be achieved by soliciting the acceptance and integration of those being observed about possible expectations of the research in order to eradicate pretence and risk.

4. The principle of reflexivity: this is intended to be in line with mitigating the limitations associated with methodology by ensuring that it is self-evaluated through a 'test run' before commencement of the true research so that any

ethical issues that may occur can be altered or minimized, Phelps and Hase (2002:516) maintain this view.

1.20 BUSINESS MODEL FOR THE STUDY

Sustainable Commonage Co-operative Model (SUCCOM) was the model used for the study as developed by the researcher. This model is community-based and applicable to pig farming SMMEs. This SUCCOM emphasises the need to increase the level of private and public investment in pig production, thereby promoting government integrated food security initiatives and smallholder cooperative development based on a sustainable holistic system of approach. In line with the reports of Sullivan (2003:1) and Halog and Manik (2011:472) the model meets three simultaneous objectives of sustainable farm business management dimensions, namely: 1) economic profit for members or investors, 2) social benefits to the farm family and the community, and 3) environmental conservation. Interestingly, the business model proposed by Vermeulen and Cotula (2010:88) that includes smallholders would seem to support this model in terms of providing more effective local livelihood options.

The SUCCOM is motivated by the need to obviate sudden business failure syndrome among pig farming SMMEs in the Central Free State. It was driven by cooperatives that allowed smallholder pig farmers to survive based on the BBBEE Transformation Charter for Agriculture (RSA Gazette, 2008: 30886) and the recent Codes of Good Practice on BBBEE (RSA Gazette 2012, 35423), a government agribusiness policy that provides agricultural investment incentives and necessary capacity for smallholders and rural/local communities, and supports an upstream vertically integrated pig production value chain. The 2010 National Department of Agriculture Guidelines for Establishing Agricultural Cooperatives exists to support this model (www.nda.agric.za/doaDev/AgricDevFinance/).

1.20.1 Advantages

1. The model promotes collective investment actions of members of a community or commonages through cooperative pig farming enterprises.

2. The model requires minimum investment capital for prospective pig farming and excludes government subsidies as a necessity.
3. The model assures pig farming investment growth, security and continuity in a value chain.
4. The model provides for a reduced risk, transaction costs and easier financing.

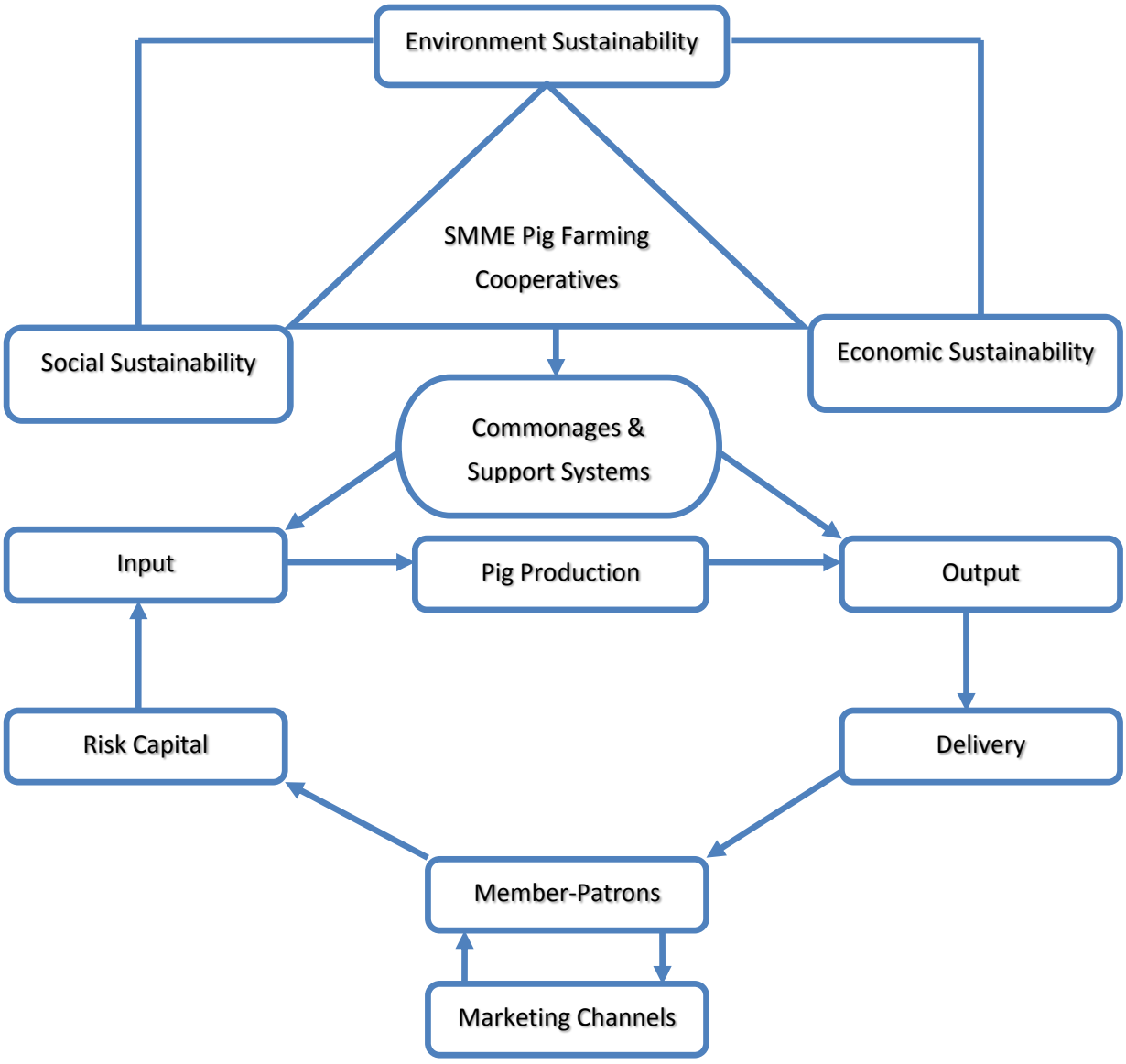


Figure 1.1: *Sustainable Commonage Cooperative Model (source: Author, 2016)*

Figure 1.1 shows that the choice of a cooperative business organisation in this model is considered by the pig farming SMMEs based on the concept of the non-traditional co-operative; basically, the new generation co-operative business organisational formation (Chaddad & Cook, 2004:349), as an exit from the traditional, which must be

justified by the three dimensions of economic, social and environmental requirements of sustainability. This formation rests on existing commonages and support systems for pig production, resulting in a sustainable output being delivered to members/patrons for marketing. Risk capital represent disposables from financial return on investment, generated from the marketing management system, and then become some commitments made by members/patrons as input to the pig production system.

A production system results in output, possibly relying on a general, efficient operations management system. In the same direction, commonages and support system in terms of the existing common pasture land and infrastructure, extension facilities of concerned government departments; policies and programmes incentives to the pig farming SMMEs result in sustainable output variables, which is the bedrock of the research objectives and questions.

The above assumptions, parameters and values form an abstract of *The Sustainable Commonage Cooperative Model*. The model can be illustrated using a mathematical linear programming method whereby an enterprise budget is constructed on the selected pig farming SMMEs.

1.20.2 Criticism

1. The model assumes that all the pig farming SMMEs in the Central Free State Province are homogenous in terms of constraints, whereas in reality it is not so due to their different historical life cycle background and resource capabilities.
2. The model requires intensive and extensive data support, which was relatively uneasy to gather.
3. The Model assumptions, parameters and values may not be a perfect representation of the actual system.

1.21 PILOT STUDY

A pilot study was conducted on ten of the entire respondents not to be included in the sample, during which survey items were displayed to test for conformity. This process took into account the principles of validity and reliability of test instruments. A pilot study was essential in terms of its use in:

- Determining of the feasibility of conducting a large-scale study.
- Informing the investigator on the strength or weakness of the proposed study.
- Pretesting questionnaire instruments in survey research.
- Identifying adverse effects caused by the adopted procedure, and the effectiveness of actions applied to mitigated them.
- Evaluating the appropriateness of interventions.

1.22 OUTLINE OF THE THESIS

The study addresses the issues of performance and sustainability by providing and advocating for the use of a business model for sustainable SMME pig farming in the Central Free State of South Africa. It consists of six chapters. Chapter 1 formed the introductory aspect of the thesis. It served as a synopsis of the background and research context, problem statement, relevance and research objectives, research questions, and methodology- which also included the research epistemological assumption and paradigmatic approach that inform the research. Finally, it refers to the pilot study and the limitations of the study.

In Chapter 2 an attempt is made to present a thorough literature review. The chapter is divided into four categorical sections addressing key objectives of the study. In Section A, business models and organisational sustainability are carefully reviewed. It presents the conceptual framework of the study. It examines contemporary business management models for SMME pig farming, keeping in view financial management and marketing management. The role of business models in agribusiness was considered, with respect to livestock farming enterprises in South Africa and enterprise value chain. Section B takes a look at literature bordering on the agricultural background of the Free State. It also reviews the Agricultural policy development,

policy implication for sustainability and implementation strategy in South Africa as well as perspectives on South Africa's livestock production. In Section C, a review of attributes of business model typology is presented. The contingency of business model typology for livestock cooperatives is presented. The section also includes constraints on diversification amongst pig farming SMMEs and some literature on entrepreneurship. Enterprise organizational forms are equally considered in this chapter with specific attention to the effect of farm sizes on productivity. Next in order are the prospects and challenges amongst pig farming SMMEs with particular reference to commonages and support system in the Central Free State Province. Factors contributing to productivity amongst the pig farming SMMEs are examined alongside developments in cooperatives, with a support by literature review. It also includes the effect of these factors on financial return on investment.

Chapter 3 elaborates on the research methodology that includes the introduction, key variables in the study, research design, and methodology and relevant methods applied in the study.

Chapter 4 presents a validation and analysis of generated data. It describes the data sources. This chapter is divided into three sections having to do with aspects such as descriptive statistics (Section 4.3) with displays of sample characteristics and the procedures applied in refining it. The second section deals with the inferential statistics (Section 4.4) whereby associations between two unmatched samples are presented. The third section focuses on qualitative data analysis Section 4.5) whereby themes are formulated and responses outlined.

The conclusions and findings of the study are presented in Chapter 5. It argues for the main findings by drawing together the results from previous chapters in alignment with the proposed Commonage Cooperative Model. It provides findings from the literature study, empirical findings and findings from questionnaires. Other aspects include findings on marketing management, innovation management activities, performance and sustainability, agricultural background of the Free State as well on research questions. Finally, this section presents the study recommendations, which consists of policy recommendations, recommendations for model development, and recommendations for further study.

Chapter 6 presents the Commonage Cooperative Model for pig farming SMMEs in the Central Free State. In the first section of the chapter, a mathematical and entity-relationship approach of the model is presented. The last section of this chapter aimed at verifying and validating the proposed model by demonstrating that the model is a reasonable representation of the actual system considering its assumptions, parameters and values. Mathematical methods will be applied in substantiating its underlying claims.

Having introduced the proposed commonage cooperative model, this last chapter demonstrates the assumptions, characteristics and applicability of the proposed model amongst the pig farming SMMEs. The model approach is justified in this chapter as well as constraints, calibration and validation. This chapter is concluded by x-raying the SMMEs' pig farming functional strategies for increasing business performance and sustainability with respect to the proposed model. The thesis ends with a bibliography.

1.23 SUMMARY

This introductory chapter served as a synopsis of the background of the study in the context of the SMME pig farming as well as providing justification for the study in the Free State. It presents the research problem in three orders, namely, problem focus, problem description and problem statement. The relevance of the study is to both the government, in terms of supporting local economic development and to the pig farming SMMEs in terms of improved productivity. Six research objectives and six research questions were stated in the chapter. The methodology included the research epistemological assumption and the paradigmatic approach that inform the research. It provided that a mixed methods research should be applied, hence, the sequential integration of the quantitative and qualitative research approach, both in data collection and analysis. Nine null hypotheses were stated. The chapter presented the *Sustainable Commonage Cooperative Model (SUCCOM)*.

CHAPTER 2

LITERATURE REVIEW

SECTION A: BUSINESS MODEL AND ORGANIZATIONAL SUSTAINABILITY

2.1 INTRODUCTION

Performance and sustainability have remained growing challenges amongst emerging enterprises in the South African livestock sector. Existing business models in this sector is duly requiring revolution. This alarming situation is now in the spotlight of researchers in the field of business modelling. A number of research studies have emerged in recent times to echo the need for more attention to address these challenges. This chapter aims to excavate theoretical and empirical exhibitions in literature on business models, evident sustainability owing to livestock enterprise performance as well as deconstruct related concepts. This review will be mindful of livestock existing business models and for reasons of space, focus less on the inexhaustible number of other types of business models.

2.2 THE COOPERATIVE ORGANISATION

2.2.1 Theoretical framework

In 1844, a cooperative named the Rochdale Equitable Pioneers' Store was opened in the town of Rochdale, England. Because its formula, principles and ideals for success was explicitly laid out, it was widely regarded as the starting place of the "modern cooperative" (http://cultivate.coop/wiki/Rochdale_Pioneers). Thereafter, formal economic modelling of the farmer cooperative did not begin until the 1940 (Hendrikse, 2004:66 & Staatz, 1987:75). Staatz (1987:75) revealed that Ivan Emelianoff, in 1942, was the first to analyse formally the cooperative as a form of vertical integration and

since then, theoreticians have looked at the cooperative in following three distinct perspectives:

Staatz (1989:2) points out that Emelianoff (1942), Robotka (1957), and Philips (1953) are credited as original formal modellers pioneering the view that cooperatives are a form of vertical integration, i.e. independent firms. They argue that because a co-operative operated at cost; it did not incur profits or losses itself, rather only its member firms do. Therefore a cooperative was not an acquisitive unit and, hence, not a firm. According to them, another line of argument extending this perspective was about the cooperative representing independent member firms that jointly owned and operated it.

The next theoretical perspective looks at a cooperative as an independent business enterprise, i.e. as a firm. Steven Enke in 1945 was the first to analyse the cooperative as a separate type of business firm in his writing on consumer cooperative (Staatz, 1989:3). According to Cook et al., (2004:66), Enke's theory posits that the welfare of cooperative members and society was maximized if a cooperative maximized the sum of the cooperative's producer surplus and the members' consumer surplus. Thirdly, some other theoreticians in this perspective consider the cooperative as a coalition of firms, each of which had its own objectives and participated in the organization as long as they felt their objectives were being met (Staatz, 1989:8).

According to Ortmann and King (2007:45), the first co-operative in South Africa was a consumers' cooperative, which was established in 1892 under the Companies Act. In the course of time, 1908 recorded the enactment of the first cooperative Act. This was followed by the Cooperative Society Act of 1922 (Act No. 28 of 1922), which was focused mainly on agricultural activities, followed by another Cooperative Society Act of 1939 (Act No. 29 of 1939). Nevertheless, the application of these Acts never went beyond the domain of agricultural activities and was subsequently repealed by the Cooperative Act, 1981 (Act, No. 91 of 1981) which also provided for trading cooperatives.

According to Ortmann and King (2007:45), as indicated in (RSA, 2005a:3), until the Cooperative Act of 2005 (Act No. 14 of 2005), the government did not consider the

1981 Act a suitable vehicle for the development of cooperatives because of inadequate definition of cooperatives, non-conformity with cooperative principles, mandatory interventionist or paternalistic role of the state toward cooperatives, a primary focus on agricultural cooperatives, organizational forms, etc. Therefore, the Cooperative Act of 2005 (Act No. 14 of 2005) was subsequently initiated to align with the International Cooperative Alliance principles and values.

Sustainability challenges faced by agricultural cooperatives and competitive strategies pursued in response to environmental and structural changes have driven agricultural cooperative to the point of using organizational innovations to adapt to agricultural industrialization (Chaddad & Cook, 2004:349). In this section, the study provides a framework built on the non-traditional cooperative models out of the traditional cooperative models to produce a cooperative model for business sustainability amongst emerging livestock enterprises that can be adaptable to the commonages for livestock production and enhance the development of small-scale livestock business.

Drawing from the property right theory of the firm, Chaddad and Cook (2004:350) attribute the traditional cooperative structure as having a restricted ownership rights to member-patrons; non-transferable, non-appreciable and non-redeemable residual return rights; and distribution of benefits among members in proportion to patronage. From the non-traditional cooperatives model perspective, which is more innovative and alternative cooperative organizational forms, they identified five cooperative models with organizational variation in the ownership rights structure, three of which are characterised by ownership rights restricted to member-patron, such as the proportional investment cooperative, member-investor cooperative, and the new generation co-operative.

As a departure from the traditional cooperative organizational model, this framework builds upon the new generation cooperative model. Chaddad and Cook (2004:355) point out that the major advantage of the new generation cooperative model is the improvement of members' incentives to contribute risk capital to the cooperative, since in addition to appreciable residual claim; restriction on residual claim transferability is relaxed while still maintaining the user-ownership right principle. This model in itself

intends to operate in a way that there is improved incentive plans for more determined member-patrons.

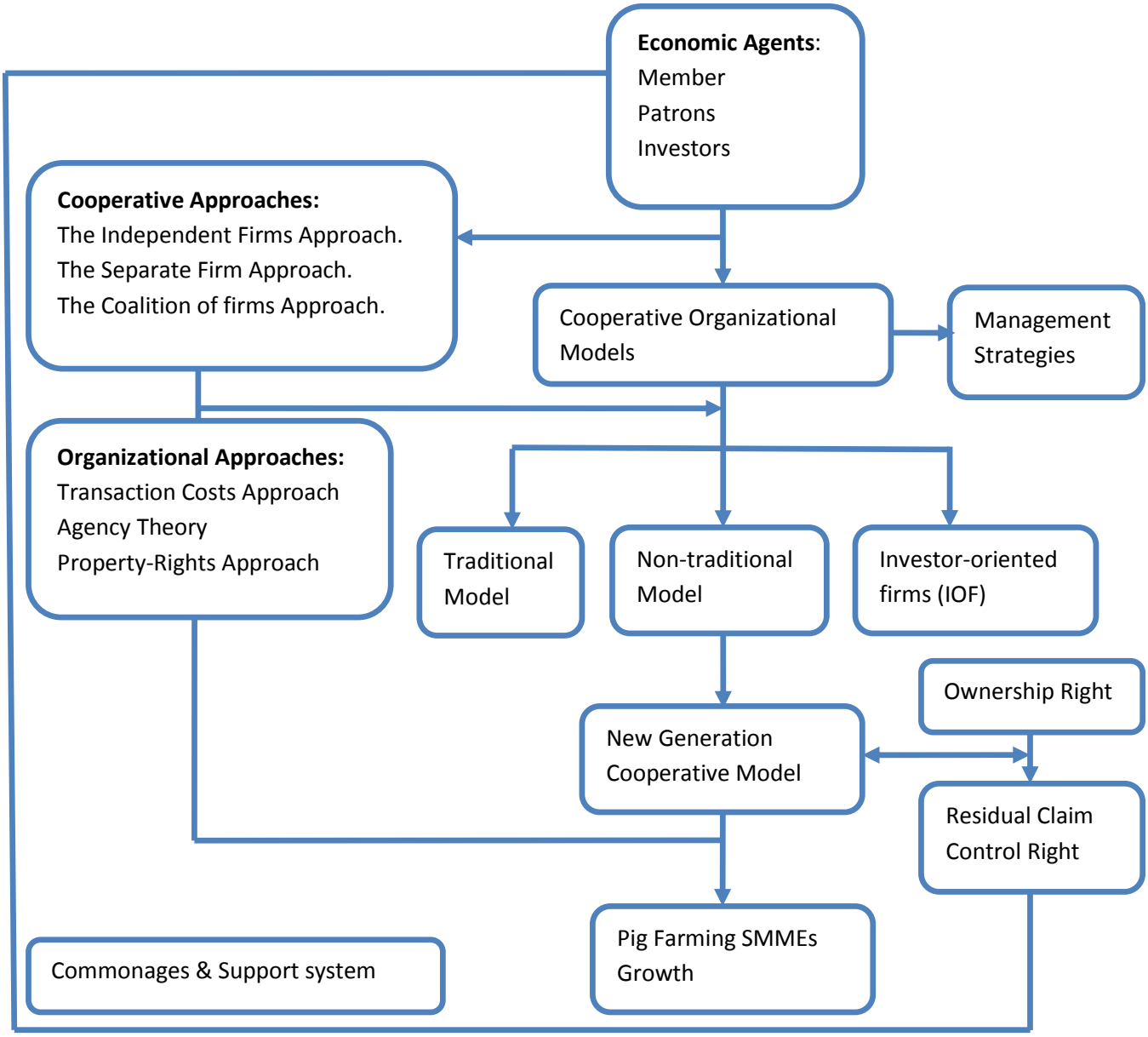


Figure 2.1: A Framework for Commonage Cooperative Model (Source: Author, 2016)

Figure 2.1 describes the pig farming SMMEs and the need for a sustainable business model using a cooperative organizational model. Three different cooperative theoretical approaches by Staatz (1989:2) are applied: the independent firms' approach, the separate firm approach and the coalition of firms' approach, which address *how* it will be organized. The next stage justifies why the pig farming SMMEs

need a cooperative as an organizational approach for growth using Chaddad, Cook & Illiopoulos (2004) Transaction costs theory approach, Agency theory approach and property-right theory approach. Based on the cooperative approach and the organizational approach, the emerging farmers have a choice to choose between three organizational models, which are the traditional, the non-traditional and the investor-oriented firms (IOF).

Since most of the failed cooperatives operated by the traditional cooperatives, the non-traditional cooperative is therefore proposed; the IOF by design is suitable as a last resort. Chaddad et al (2004:350) illustrate three types of non-traditional models: Proportional investment cooperative, member-investor cooperative and new generation cooperative. The framework builds on the new generation cooperative in the sense that in addition to the appreciable residual claim principle; restriction on residual claim transferability is relaxed, while still maintaining the user-ownership right principle for pig farming business sustainability in the commonages.

2.3 LIVESTOCK FARM BUSINESS MODELLING

Kemm (1976:159) raised a concern that continued pig production in South Africa will in future be dependent on the progress made in increasing production efficiency. Improvement in pig production can be linked to improvement in management and the implementation of modern systems and research findings among other factors. Recent developments around instability in the agricultural sectors and policy reforms indicate a high level of uncertainty amongst the emerging livestock farmers, thus, generating attention over the sustainability of existing business models of the livestock enterprises, since a business model describes the rationale of how an organisation creates, delivers and captures value (Osterwalder & Pigneur, 2010:2). Same models seem to reflect the way by which a business creates and captures value within a market network of producers, suppliers and consumers (Vorley et al, 2008:1). With a view to developing a business model for sustainable SMME pig farming, as applicable amongst cooperatives in commonage settings, the desire to enforce sustainability in every aspects of the firm has been a growing trend.

Vorley et al (2008:1) reiterates that a business model is the way by which a business creates and captures value within a market network of producers, suppliers and consumers. In other words, according to Vermeulen and Cotula (2010:3), it is what enables a company to make money. Vorley et al (2008:10) categorised three drivers of a business model to be: a) those that are producer-driven, models aimed at developing and supporting producer organisations; b) those that are buyer-driven, models aiming to enhance the efficiency of processing and retail in the value chain; and, c) those that are intermediation-driven, which are models that work with specialized intermediaries in the value chain. Vorley et al (2008:7) and Vermeulen and Cotula (2010:20) advocate for a more inclusive business models encompassing a value chain of small-scale farmers that can co-operate to compete as one single supplier and large-scale farmers, but, with closer involvement of local landholders. Smallholder farmer involvement in the business decision making process by adding their voices is identified as having the ability to reduce risks of doing business and maximise profitability (Sulle, 2010:75).

2.4 CONCEPTUALISING INCLUSIVE BUSINESS MODELS

Gleaning from the definitions of inclusive business model as found in the work done by UNDP, Creating Value for All: Strategies for Doing Business with the Poor (UNDP, 2008:2); WBCSD & SNV, Inclusive Business- Profitable Business for Successful Development (2008:2); Endeva, Inclusive Business Guide (2010:3), and IFC, Accelerating Inclusive Business Opportunities (2011:2), it recurrently indicates that an inclusive business model is a corporate socio-economic drive seeking to build bridges between business and low-income communities for mutual benefit in commercially, viable and scalable ways.

In 2011, the Partnership Resource Centre (PRC) presented a special contribution to Fourth High Level Forum on Aid Effectiveness in Busan, Korea, titled: Inclusive Business through Partnerships. In the presentation, their paper argue that from the forgoing, *managers of multinational enterprises as well as academics are in need of more sophisticated business models that can establish the link between the micro level of corporate strategies ('inclusive business') and macro models of development ('inclusive growth') (PRC, 2011:4)*. The paper aimed *to link the macro concept of*

'inclusive growth' and the micro concept of 'inclusive businesses at the firm level, with special attention to the role of cross-sector partnerships.

The Partnerships Resource Centre (2011:7) traced back the gestation period of inclusive business to 1988, *when a number of non-governmental organisations initiated the first labelling for fair trade*, though lacking specificity and business relevance, which gradually fade away. It rather re-emerged from another quarter about the same time by the World Business Council on Sustainable Development (WBCSD), in there sustainable livelihoods business' concept, where they demonstrated a pro-poor business model in the form the *base* of the pyramid- ultimately, involving poor people as consumers; whereas, in the inclusive business strategy, low income communities are involved as both consumers and producers and the enterprise takes the lead in the chain.

The concept of an inclusive business model formally became a subject of academic focus in an early United Nations report titled "*Creating Value for All: Strategies for Doing Business with the Poor,"* published by Growing Inclusive Markets in 2008. These business models foster mutually beneficial linkages between enterprises and low-income communities, by caving a niche for them in the enterprise's value chain, according to the status of clients and entrepreneurs respectively; at the same time, in a sustainable way. For business, it is a vital instrument for the fulfilment of basic socio-economic responsibilities, which goes beyond immediate maximization of return on investment (ROI) (Dzansi, 2011:5711). According to the report, it certainly entails businesses combining complementary capabilities with the poor; by this initiative, opportunities to create value for all is assured; opportunities for business and for poor people.

The report highlights on the one hand, that opportunities for business, which are basically profits and growth, include:

- Generating profits
- Developing new markets
- Driving innovation
- Expanding the labour pool

- Strengthening value chains.

On the other hand, it shows that opportunities for the poor are basically advancing human development in the areas of:

- Meeting basic needs
- Enabling the poor to become more productive
- Increasing incomes
- Empowering the poor.

Other concepts that have been associated with the inclusive business were outlined by Gradi and Knobloch (2010:13) to include:

1. Business linkages
2. Pro-poor value chain development
3. Responsible supply chain management
4. Base (or Bottom) of the Pyramid (BoP)
5. Making markets work for the poor/MMW4P/M4P
6. Social enterprise/social business
7. Corporate social responsibility

According to the 2014 PLAAS Policy Brief, four types of inclusive business models were identified among smallholder cane growers in Mozambique, namely:

- ***Plantation/Estate model***: where agriculture is now been driven by modernisation and commercialisation; the need for all production, processing and marketing activities to be carried out under an estate becomes necessary. This model has been most preferred by larger corporations and government institutions.

- ***Out-growers scheme (contract farmers***): this model is unanimous with contract farming system, where growers have control over their resources, but enter into a contractual agreement with processing enterprises on conditions of sales of the products.

- ***Block Farming***: the collective integration of small plots by interested farmers to form a block. The economics of scale accruing to members, in terms of reduction in operational costs due to single packaging, transportation, etc., makes this model more attractive.

- ***Hybrid Business Model***: this model is considered a sustainability driven model, encouraging mutually beneficial linkages between businesses and farming community. It requires the formation of an estate. However, it does not address the marginalisation of smallholders in decision-making.

2.5 STRATEGIC PARTNERSHIPS FOR SUSTAINABLE AGRIBUSINESS

Another persective on inclusive business models in the Agricultural sector is found in the case studies from South Africa's Limpopo Province by Lahiff et al (2011). Their emphasis on strategic partnership in South Africa's land reform indicate that after the restoration of land to the historical owners since 1994, a large tribally-based community claimants organised themselves in a communal property association for agricultural projects. These projects took off with high expectation and a handfull of them eventually collapsed soon after.

Consequently, the South African Government then decided to impose 'commercial' arrangements involving partnerships with private sector which is considered to be the 'strategic partners'. According to these commercial arrengment, the partners are expected to provide investment, strategic management and market know-how for up to 20 years under lease or shareholder's agreement, while the state provide funds for land purchase and start-up capital for communities (Lahiff et al 2011:2). Fig 2.2 illustrates the above analysis and show key elements of a typical strategic partnership/joint venture:

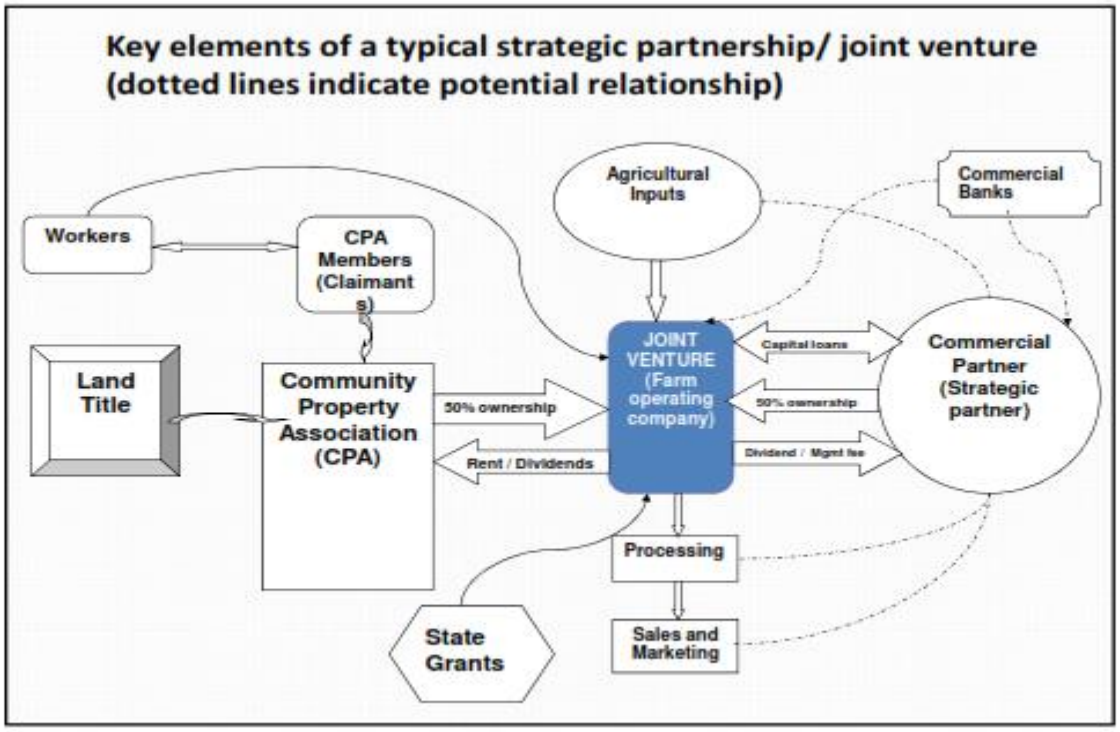


Figure 2.2: Key elements of a typical strategic partnership/joint venture
Source: Lahiff, Davis & Monenzhe. PLAAS, Cape Town. 2011

McDermott et al (2010:96) argue that an increase in public and private investment in smallholder livestock systems would enhance the effectiveness of livestock enterprises both as instrument of poverty alleviation and sources of alternative livelihood in a more sustainable way.

2.6 CORRELATING BUSINESS MODEL AND TECHNOLOGY INNOVATION

From yet another approach, Chesbrough (2010:354) examines the relationship between a business model and technology, in his exploration of barriers to business model innovation. He points out that technology in itself requires a business model to make commercial sense. In some cases, an enterprise may have less knowledge of what to do with extant technology, until they innovate in their business model. He argues for the above point by stating that, "*a company has at least as much value to gain from developing an innovative new business model as from developing an innovative new technology"*, (2010:356).

It is widely accepted that the business environment is dynamic, i.e. having an attribute of changing fairly predictably; equally so, that business performance in most cases is dependent on business models. In other words, a business model meets the criteria for an independent variable. Essentially, for a business to survive in a trendy environment, it requires a dynamic business model; in other words, it is rather ideal to drive for a more sustainable enterprise performance than a sustainable business model, taken business model disruptive impacts into consideration. Schaltegger et al (2011:18) in their discourse on *the role of business model innovation* were careful to dissociate it from issues of corporate sustainability with regards to economic environment and social entrepreneurship.

Rather, the enterprise goal is to ensure a sustainable business performance that is better achieved using a more dynamic cocktail of models, contingent upon its typical environment.

However, due to the propensity for innovation in the business environment and competitor's responses to changing market forces, model innovation can either be inhibited or rendered ineffectual by three key actors: the entrants, the incumbents and the customers (Habtay & Holmen, 2012:4). Chesbrough (2010:358) identified two asymmetric concepts, acting as barriers (disruptions) to model innovations, namely, 'disruptive innovation' and "disruptive technology".

Disruptive innovation: that is, an innovation that makes a complicated and expensive product simpler and cheaper and thereby attracts a new set of customers (Christensen, 2008:43), which offers more value preferences for customers than those of the established markets and can be viewed as a business model problem (Habtay & Holmen, 2012:2). In like perspective, Simmons et al (2013:744) define disruptive innovation as discontinuous, generational or breakthrough product and technology innovation that can create new paradigms; indicating that it deviates and threatens existing market conventions and orders, incumbents and dependents; and seemingly threatening the dominant logic.

Disruptive technology: on the other hand, according to Christensen (2008), is described as a new technology that unexpectedly displaces an established

technology. It is perceived as the undoing of established technology and/or markets and a threat to the status quo. According to him, two categories of new technologies exist: sustaining and disruptive. Sustaining technology implies merely incremental improvement upon extant technology.

It goes without saying that these disruptive impacts appeal to the incumbent's extant customers; consequently, triggering the need for transformation (Govindarajan et. al., 2011:121). This particular view challenges the need for model sustainability in a dynamic business environment. Interestingly, it questions the likelihood that a sustainable business model will yield to a sustainable enterprise; specifically, does the concept of business model sustainability conform to the reality of current jet-age of business scenery?

Kun-Huang Huaring (2013:2102) identifies two major types of business models: static and evolving models, a view shared by Demil and Lecocq (2010:227/8). According to them, the static models are considered non-evolutionary, describe the target market and capture key components of a business plan. They based the evolutionary models on the perspective of how a business evolves from one static model to another, an insight demonstrated by Applegate et al (2003:52) in their four approaches for evolving a business, namely:

- Enhancing
- Extending
- Expanding, and
- Exiting.

Kun-Huang Huaring (2013:2102) proposes a two-tier business model to assist entrepreneurship, consisting of a conceptual model (first tier), which specifies the relationships between key components: innovation, resources, market, and value. On the other hand, a financial model (second tier) which reflects the financial conditions in a business (Osterwalder & Pigneur, 200:42), hence, the cost, revenue, and profit.

2.7 CONTEMPORARY BUSINESS MODELS FOR LIVESTOCK ENTERPRISES

There exists different business models for livestock enterprises. The following business models and their implications for emerging livestock enterprises are considered:

(1) Pastured Livestock Value Chains Model:

According to Pirog (2004:2), the Pastured Livestock Value Chain Model (LVCM) avails the farmer the opportunity of playing the role of a business partner rather than an input supplier and allows the sharing of risks and rewards across a network of partners who work together to satisfy market demands for a particular product or service. By way of vertical integration, farmers could focus on raising livestock, for instance; and other partners do the processing, distribution and marketing. In certain circumstances, the farmer could have the opportunity of investing in another part of the business chain (Pirog, 2004:5). According to Conner, Campbell-Arvai and Hamm (2007:62), the LVCM model requires lower initial investment and debt; offers opportunity for beginning and diversifying farms, and the ability to earn a living on a relatively small scale.

Limitation of LVCM

Conner et al (2007:64) identify pasture management, consistency of supply, production cost, among others as challenges in this model. Conner et al (2005:10) identify pricing, volume and quality, capitalization, competent management, standards, and certification mechanisms as critical issues confronting this model.

(2) Integrated Farming System Model:

The integrated Farming System Model (IFSM), as practiced by the pig farming SMMEs refers to a more integrated agricultural system of approach to livestock and crop farming (Ugwumba et al, 2010:1); integrating livestock production with crops is possible in a more coordinated framework (IFAD, 2010:2) . The Caribbean Agricultural Research and Development Institute (CARDI) (2010:8) view it as part of a strategy to ensure sustainable use of the natural resources for the benefit of present and future

generations. For the IFSM to be sustainable, the system must be profitable (European Institute for Sustainable Development in Agriculture, EISA (2010:8).

According to Ugwumba et al (2010:1), the IFSM is confirmed to reduce cost of production; and increase productivity, income, nutrition, overall welfare and employment. According to Bradely (2010:34), the IFSM creates a buffer against economical and biological risks. Figure 2.3 illustrates the above concept:

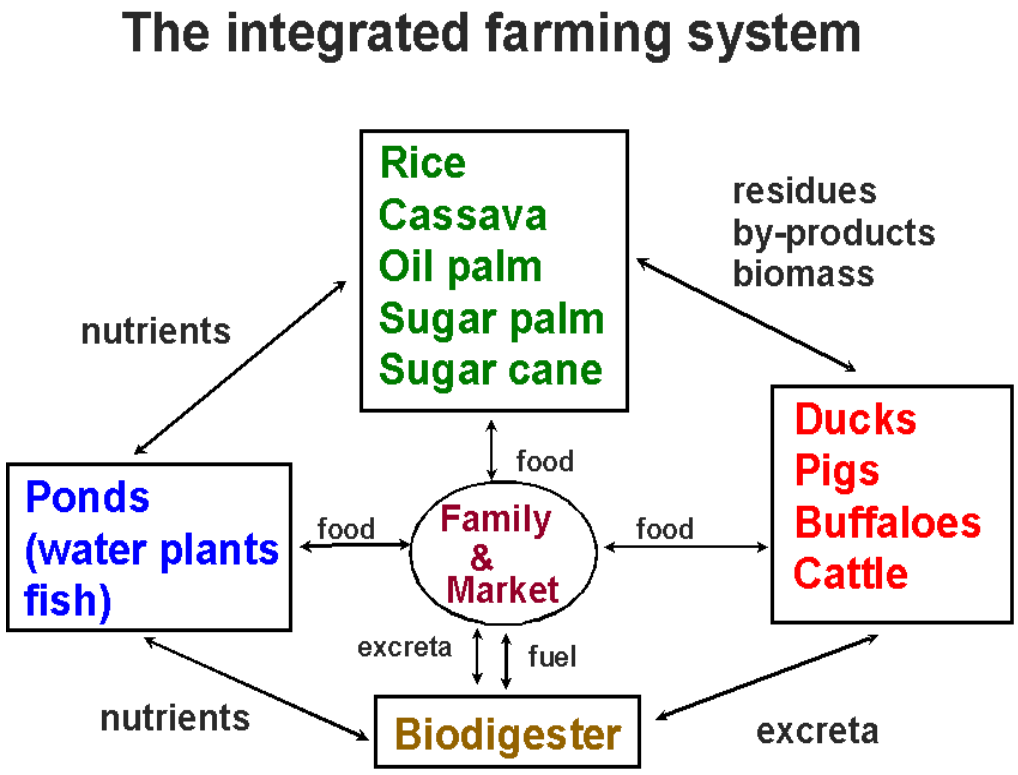


Figure 2.3: A conceptual model of IFSM (Preston, 2000, http://www.mekarn.org/sarpro/preston.htm)

The IFSM is the concept of Diversified Farming Systems (DFS). The DFS is a contemporary farming practice at its development stage, apparently advancing the tenets of IFSM (Bacon et al 2012:41; Alastair & Marsh 2012:42; and Bowman & Zilberman 2013:33). Although DFS had in some advanced countries dominated agricultural practices before being displaced by industrialised agriculture (Alastair, 2012:42). Diversified Farming Systems is defined by Kremen et al (2012:44) as *"agricultural practices and landscapes that intentionally include functional biodiversity at multiple spatial and/or temporal scales in order to maintain ecosystem services that*

provide critical inputs to agriculture, such as soil fertility, pest and disease control, water use efficiency, and pollination".

According to FAO (2001:Internet) as contained in IFAD (2010:3), Diversified systems consist of components such as crops and livestock that coexist independently from each other. In this case, risk minimization rather than resource recycling is the primary target of integration. Whereas, in an integrated system, crop and livestock interact to create a collective effect. IFAD (2010:3) outlined the overall benefits of IFSM to include:

- Agronomic, through the retrieval and maintenance of the soil productive capacity;
- Economic, through the reduction of crop pest (less pesticide used and better soil erosion control); and
- Social, through the reduction of rural-urban migration and the creation of new job opportunities in rural areas.

These farming systems support the deliberate actions of farmers toward the application of methods grounded in traditional and agro-ecological knowledge (Iles and Marsh, 2012:42). However, according to Kremen (2012:44), these systems of farming intentionally include functional biodiversity managed by farmers to generate critical ecosystem services to agriculture; this view is supported by Zhang et al. (2007:254).

Another extension of this concept, according to AgriSETA (2010:5), is agriculture diversification, which is conceived to involve identifying farm produce with a defined market in line with new and innovative agricultural practices.

Limitations of IFSM

Bradely (2010:34) identifies the margin on each unit of product grown to diminish as terms of trade tighten. High start-up costs and the long transition duration in developing other farm units for resource integration may constrain farming business cash-flow (Tipraqsa et al, 2006:86). IFAD (2010:4) indicated that the IFMS is constrained by soil nutrient losses due to intensive recycling; there is more likely to be

high utilization of fertilizer, if manure nutrient use efficiencies are not improved or properly applied, thereby resulting to high costs. Nevertheless, farmers' preference for the reliance on chemical fertilizer makes the system less acceptable.

(3) Precision Livestock Farming Model:

The Precision Livestock Farming Model (PLFM) is relatively new and is driven by technology, which according to Berckmans (2004:29) involves the measurements, predictions and data-analyses of animal variables. This model improves recognition of individual animals. It promotes the possibility of continuous and automatic collection and analysis of livestock data using on-line automatic monitoring sensors and other sensing systems which support livestock management tasks without imposing additional stress on livestock. According to Banhazi et al (2012:1) the main purpose of the PLFM is to improve the efficiency of production, while increasing animal and human welfare, via applying advanced information and communication technologies (ITC), targeted resource use, precise control of production process and traceability.

Limitations of PLFM:

Availability of required tools can be a setback to this system and replacing farmer's physical presence/ surveillance over the animals with technological devices reduces the reliability of the model. Banhazi et al (2012:5) identify a limitation factor of commercialization on the basis of the lack of a consistent service offering for farmers, the lack of co-ordination between researchers, developers and technology suppliers.

(4) Contract Farming Model:

Agriculture production by means of contract is old practice, yet the complexity associated with the mechanisation and scale of production necessitated the modernization of farming contract relationship, as agribusiness organization is increasingly value-chain dependent, at all levels of production.

Contract Farming advanced into a new perspective and development following a workshop of the general assembly of the World Farmers Organization (WFO) held in Buenos Aires, Argentina, from 25 to 28 March 2014. The workshop produced an

outstanding framework, a set of guidelines on Contract Farming, which was subsequently adopted and being developed by UNIDROIT (an intergovernmental organization on harmonization of private international law and highly credited for drafting of international conventions and production of model laws), in collaboration with the Food and Agriculture Organization (FAO), the International Fund for Agriculture Development (IFAD), and other multilateral organizations, farmers (WFO) and industry representatives (UNIDROIT, 2014:4).

From the contract law and the agriculture perspective, a definition of contract farming, according to the proceeds of the above-mentioned workshop, indicates that: *contract farming operations are based on an agreement, an " agricultural production contract," whereby an agricultural producer undertakes to engage in production and deliver at a future time goods meeting designated specifications, while the purchaser – typically a food processor, an exporter or a retailer – commits itself not only to acquire the product for an agreed price, but also to provide a certain level of control during the production process, typically by supplying inputs, technology or supervision.*

According to Prowse (2012:5), the Contract Farming Model (CFAM) is a form of vertical integration within the agricultural commodity chain, which can be understood as a lending "input" such as seed, fertilizer, credit or extension to a farmer in exchange for exclusive purchasing rights over the specified crop. Singh (2005:251) states that CFAM basically involves four agreeable prerequisites: pre-agreed price, quality, quantity or acreage (minimum/maximum) and time; Singh (2005:251) further identifies three types of contract farming models: 1) procurement contracts, 2) partial contracts, and 3) total contracts.

According to Singh (2005:253), the contract farming models fall into four categories: 1) corporate-led contract farming such as the Bi-partite Contract Farming Model and Tri-partite Contract Farming Model, 2) The Consortium Approach, such as The Quad-partite Contract Model, 3) State-led Contract Farming, and 4) The Franchise Model, such as The Six-Partite (networking/franchisee) CF Model. However, Vermeulen and Cotula (2010:50) proposed the replacement of the CFAM with the lease and management contract model involving the possible options of fixed cash rent, profit-sharing scheme and sharing of crop or livestock produced, or a combination of all.

Advantages of this model are market development, market possibility, and farmer risk reduction (Eaton & Shepherd, 2001:8).

In the context of a 2009 report by SNV, a Netherland Development Organization, Contract Farming is defined as an agreement reached between a company and farmers for the supply of agricultural products to the company, p10. The report indicates that the frequency of this farming practice has significantly increase crop production in Zimbabwe between smallholder farmers and commercial companies (Dawes et al, 2009:7).

Murota et al. (2009:24) and Eaton and Shepherd (2001:44) identify the following five broad models by which contract farming can be operated based on product type, resource capability of the sponsor and the intensity of the relationship between farmer and sponsor:

The centralized models: The involvement of a centralized processor that garters produce from farmers to feed through a processing procedure; most often, this is organized in terms of a vertical arrangement, quota allocation and tight quality control.

The nucleus estate model: A variation in the centralized model gives rise to the nucleus estate model, in which the company is represented locally by a centralized estate or plantation. Here the central estate becomes the feeder into the central processing plant. This model provides some economics of scale to the central estate that contracted farmers enjoy. The central estate serves as a throughput for the processing plant. The nucleus model was first introduced by the Commonwealth Development Corporation (CDC).

Multipartite model: This model accommodates more than one organization in the contract who may be statutory bodies undertaking different functional aspects of the operation. This type of contract farming model can emerge out of the centralized or nucleus estate models.

The informal model: This model is best suited for emerging enterprises seeking to be established in the market. It usually involves simple, informal production contracts

with farmers, especially on a seasonal basis, with a minimal processing. It requires government support services such as research and extension.

The intermediary model: This model involves intermediation in the form of subcontracting linkages whereby companies (sponsors) seeking to avoid direct contact with farmers have the option of subcontracting production to intermediaries. Below is a contract farming framework that illustrates the above concept.

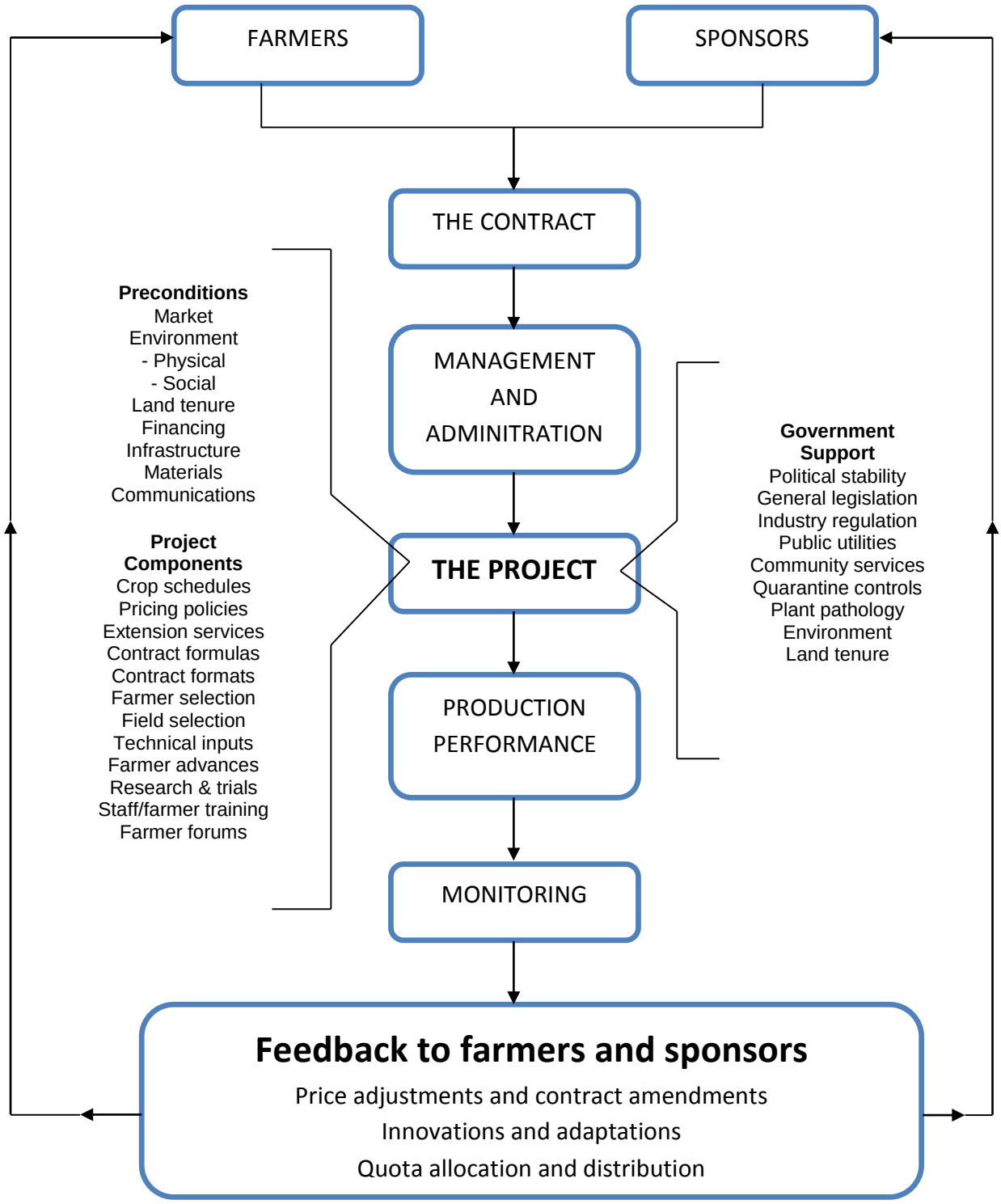


Figure 2.4: Contract farming framework (*Source: based on Eaton, C.S., 1998b: 274)*

Limitations of CFAM

Disadvantages of the CFAM are associated with fears of market failure, corruption and monopolistic tendencies. According to Vermeulen and Cotula (2010:88), the CFAM

propositions can also be exclusionary, as better-resourced farmers tend to capture the contracts, while poorer farmers work as labour on the contracted farms.

2.8 CONCEPTUAL ANALYSIS OF BUSINESS MODEL INNOVATION

Innovations in business models are becoming increasingly critical in practice (Bucherer et al, 2012:183). Studying the business model, as a concept in strategy (Baden-Fuller & Morgan, 2010:156), has taken a systematic approach steered by researchers and practitioners who emphasise the need for firms to continuously develop novelty business models to remain effective (Casadesus-Masanell & Ricart, 2010:196) and the crucial role strategizing play in changing business models (Achtenhagen et al, 2013:427). Bucherer et al (2012:183) maintain that as a new strategic imperative for competing firms, seeking for better positions in the market, conceptualizing business model innovation requires firms to establish specific demarcations between the components (aspects or parts) of a business model, strategies applicable in a business model, and more importantly, the whole of a business model, in terms of definitions, dimensions and significant indicators of a model. Another dimension of this demarcation extends to two lines of views of a business model by researchers and commentators. For some, it is viewed as part of a strategy lexicon, intertwined with technology; others see it as potentially separable from technology and strategy (Baden-Fuller & Haefliger, 2013:420).

As part of attempts in developing the business model concept, researchers such as Achtenhagen et al (2013:427) demonstrate the practical insight that the *sine qua non* to achieving a sustained value creation lies in how firms change and develop their business models over time. According to the authors, this assertion reveals why a company which remains successful, continuing to do for too long what used to be right, without reinventing and adapting their business model to pre-empt their competitive environment, eventually becomes vulnerable to failure.

In achieving the management of a successful business model change for sustained value creation, Achtenhagen et al (2013:430) offer a framework enabling the identification of necessary strategic actions, capabilities and activities. Their theoretical background was drawn from the combination of two different perspectives:

dynamic capabilities perspective and the strategy-as-practice perspective, which are needed to successfully achieve a business model change. According to this illustration, dynamic capabilities perspective focuses on recurring situations of adaptable difficult-to-replicate capabilities, from which a firm derives the strength to change according to the requirement of a given environment. They maintain that these *dynamic capabilities enable a company to shape, adapt and renew business models to create value in a sustainable way*. In their analysis, value creation for customers, i.e. continuous success, is a function of the deployment of different capabilities on critical activity areas that maximises opportunities.

Contrary to the current dominant view of strategy as something organizations possess, designed by senior-level managers and to be implemented across the lower levels, strategy-as-practice, a perspective pioneered by Richard Wittington in the late 1990s, is concerned with the strategic contents of the actions of people in organisations (Whittington, 2006:613), rather than what organisations possess. Strategy he affirms to be what people do in organisations. This line of thinking bridges the long-established gap between micro- and macro-level view of strategy (Varyani & Khammar, 2010:7), upon the foundation of a more sociological and less managerial dimension to the study of business strategy, a practice-based view of strategy, i.e. an activity-based view of strategy in the form of practice. Achtenhagen et al. (2013:439) agree with Regner (2008:565) in using this approach in complementing the dynamic capabilities perspective to achieve a business model change; and more so, on how business practices impact on enterprise optimal performance (Neneh & van Zyl, 2012:121). Fig. 2.5 illustrates this construct.

Figure 2.5: A conceptual framework for strategy as practice analysis (Jarzabkowski, 2005:11)

Brettel et al (2012:85) attribute a business model design to *'the architecture of a firm's boundary-spanning transactions with other business model participants'*, and they corroborated in clarity that the business model as a construct is different from strategy. Casadesus-Masanell and Ricart (2009:1), in line with other scholars and practitioners, recognise the growing need for business model innovation for firms desiring to compete differently and remain ahead on the fast lane in a competitive environment. They revelled, according to IBM's Global CEO Studies for 2006 and 2008, that industry wide, top management are actively seeking guidance on how to innovate in their business models, with a focus to improve their ability to both create and capture value.

The notion of business models resonates with some experience of models (Baden-Fuller & Morgan, 2010:157). A semantic analysis of the concept business model reflects a combination of the meaning of both business and model, and reveals many of its possible applications. Osterwalder et al (2005:4), based on WordNet 2.0, interpret a business as:

"the activity of providing goods and services involving financial, commercial and industrial aspects" and a model as:

"a simplified description and representation of a complex entity or process".

According to them, representation implies conceptualization. They point out that authors do not necessarily mean the same thing when they write about business models, and can be classified into three hierarchical categories:

1. Authors that describe the business model as an abstract overarching concept that can describe all real world businesses.
2. Authors that describe a number of different abstract types of business model (i.e. a classification scheme), each one describing a set of businesses with common characteristics.
3. Authors presenting aspects of or a conceptualization of a particular real world business model.

In their literature, the first category of authors (level 1) associates their definitions with the overarching business model concept, i.e. consisting of definitions of what a business model is in content and context; in other words, the model itself and its embedded meta-models. The second category of authors (level 2), refers to model taxonomies, which have a restricted domain application. It consists of several types or meta-model types of business models that are generic but contain common characteristics. Finally, the third category of authors (level 3) refers to the instances (view of company) of business models such as the concrete real world business models or its conceptualization, representation, and descriptions.

Schaltegger et al (2011:18) note that Zott, Amit and Massa (2011:5) find in their literature review, unanimity on some core issues of research regarding business model innovation to the effect that scholars tend to agree that: apart from a business model facilitating technological and organizational innovations, it is subject to strategic innovation in order to influence resource optimization. In line with Casadesus-Masanell and Ricart (2009:3), Morris et al (2005:726), Baden-Fuller and Morgan (2010:157) and Brettel et al (2012:87), they agree that there is still a lack of consensus among scholars on what a business model is, as they observe that researchers frequently adopt idiosyncratic definitions that fit the purpose of their study and inconsistently reconcile with others (Zott, Amit & Massa, 2010:1). Achtenhagen et al (2013:428) note the

finding that business models cannot be static, as these changes are been influenced by the changes created by interactions of the different building blocks of business models, which deserves a keen attention by researchers, specifically to understand how, over time, such dynamics are been driven by enterprise capabilities and activities to success.

Schaltegger et al (2011:18) succinctly view a business model as a strategic asset to improve a firm's performance. Holloway and Sebastiao (2010:86) contextualize a business model as a key dimension in developing and analysing entrepreneurial strategy in emerging markets, the development and execution of which requires interaction and alignment between collective interests, and of those of the entrepreneur. According to them, these interactions and alignment influence the definition and structure of the market.

A remarkable frame of reference that seems to contribute to business model innovation research, linking a resource-based view (possession of valuable resource capabilities) and knowledge-based theories (knowledge development and deployment) of the firm, was contained in the literature by Siguaw et al (2006:560/1). According to their literature, the level of innovation orientation was considered significant to firm innovation capabilities that facilitate a firm's sustainable competitive advantage. The framework of Siguaw et al (2006:556) indicates that '*an appropriately developed innovation-enabling competencies lead to innovation outcome, specifically ideal innovation form, type, and rate that, in turn, affect firm performance'.* They consider business models as inclusive in a number of outcomes of a systematic organizational innovation orientation.

In their quest for '*Why New Business Models Matter for Green Growth',* Beltramello, et al (2013:17) share a similar view with Scrase et al (2009:15) and Freeman and Perez (1988:39) when they distinguish between four types of innovations:

- *Incremental innovation*: which aims at modifying existing technologies, without fundamentally changing the underlying core technologies. It is continuous and enables a firm to improve performance.

- *Disruptive innovation*: also considered as transformative innovation, which demonstrates a new method or functioning of certain technologies, without fundamentally changing the underlying technologies; they are known to drive further innovation among users.
- *Radical innovation*: which involves a discontinuation in events, which inhibits growth of new markets; a shift in the technological regime of an economy and can lead to changes in enabling technologies.
- *Changes in the 'techno-economic paradigm'* affecting the entire economy.

Existing definitions of a business model indicate a diversity of perceptions; mystifying the context. Osterwalder et al (2005:5) provide a broad-based definition that embraces this diversity. They reflect a business model as a '*conceptual tool expressing the business logic of a specific firm'*, thus, departing from the concept of a business model being simply referred as 'the logic of the firm for creating value' (Linder & Cantrell, 2000:2). Sako (2012:23) concurs that a business model defines the overall business logic of a company at the strategic level. Casadesus-Masanell & Ricart (2009:17) argue that a '*business model is a reflection of the firm's realized strategy'*, while carefully separating and relating the concepts of business model, strategy, and tactics, they defined strategy as a contingent plan of action designed to achieve a particular goal, and tactics as the residual choices open to a firm by virtue of the business model that it employs.

Bucherer et al (2012:184) attempt to synthesize different extant definitions of a business model in such a way that it *'abstracts the complexity of a company by reducing it to its core elements and their interrelations, and thus specifies the core business logic of the firm'.* They emphasise that it is not an invariable, but rather a dynamic system; in order words, it is subject to a form of contingent adaptation for firms to remain viable. According to them, this constant process of change can be referred to as business model innovation. Holloway and Sebastiao (2010:88) connect a business model with a firm's strategic instrument in terms of its attributes in responding to their environment.

In an attempt to examine the fit between product market strategy and business model implications for firm performance, Zott and Amit (2008:1) express this diversity of

perceptions by describing the business model as a structural template or construct that describes the organisation of a focal firm's transactions with all of its external constituents in factors and product markets. In this perspective, they introduced the firm's business model as a new contingency factor that captures the structure of a firm's boundary-spanning exchanges. Contingency theory is widely discussed in strategic management.

This theory suggests that the optimal strategy of all organizations is contingent (dependent) upon the internal and external situation. These situations are mostly uncontrollable variables for management, interacting with strategy variables to determine firm performance. Extant business models are not easily adaptable by competitors (due to resource type and capabilities) in order to remediate dynamic opportunity costs, considering an enterprise's long-term strategy, corporate culture and core competences (Bucherer et al, 2012:183). Depending on type of organization, the following are some contingencies:

- Government
- Suppliers and distributors
- Consumer interest groups
- Customers and competitors
- Technology
- Unions

The contingency perspective originated in the 1950s by Joan Woodward, as a way of formulating broad generalizations about the effects of strategies on firm performance. Zott and Amit (2007a:2) drew a distinction between a product market strategy and a business model, as well as maintaining that a business model enhances or complements a firm's competitive advantage. Bucherer et al (2012:183) concur that business model innovation is a different type of innovation that is distinct from product innovation (successful exploitation of a new knowledge, Tohidi & Jabbari 2012:821) and process innovation (redefining the scope of functional business activities, Khurana, 2013:Internet).

Casadesus-Masanell and Ricart (2009:2) found no distinctive features of superior business models, claiming reasons to be due to a lack of clear distinction between

perceptions around strategy, business models and tactics. Thus, they provide an integrated conceptual framework by which to separate and relate all three concepts. They identify important contingencies, based on which all three operate, indicating their key differentiators, even though the concepts are different constructs. They introduce a *generic two-stage competitive process framework* to facilitate this integration, thereby providing the following conceptual references as illustrated in figure 8 below. According to them:

- *Business Model refers to the logic of the firm, the way it operates and how it creates value for its stakeholders; and*
- *Strategy refers to the choice of business model through which the firm will compete in the marketplace; while*
- *Tactics refer to the residual choices open to a firm by virtue of the business model it chooses to employ.*

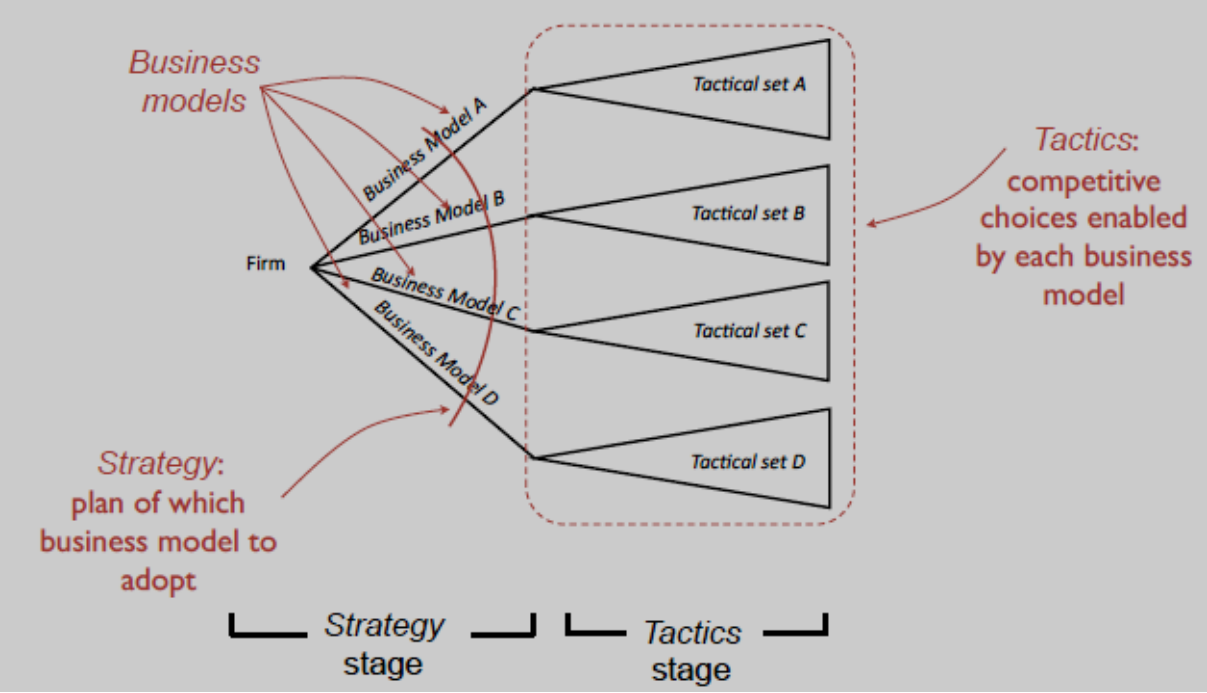


Figure 2.6: Strategy, business model and tactics (Casadesus-Masanell & Ricart, 2009:19)

In turn, Osterwalder (2005:10), Osterwalder and Pigneur (2009, 2010:6) identify the following nine basic building blocks of a business model as illustrated in figure 2.7:

1. Customer Segments

2. Value Proposition
3. Distribution Channel
4. Customer Relationships
5. Revenue Stream
6. Key Resources
7. Key Activities
8. Key Partnerships
9. Cost Structure.

The nine basic building blocks of a business model mentioned above cover the following four main areas of a business:

1. Customers
2. Offer
3. Infrastructure, and
4. Financial viability.

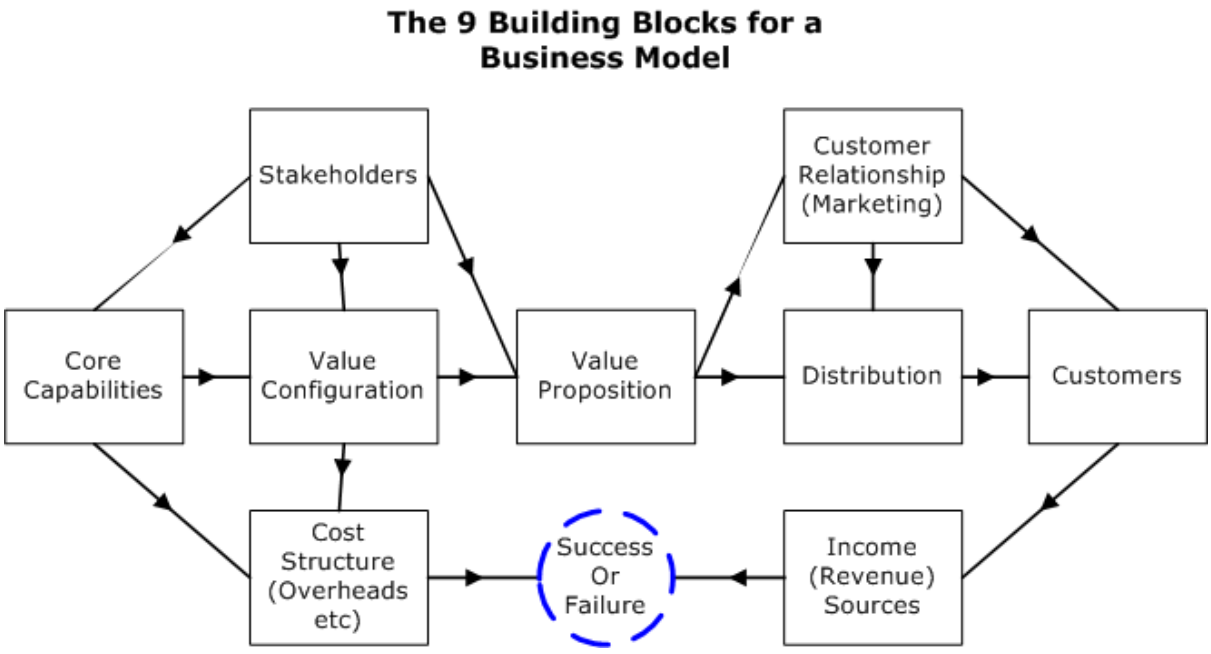


Figure 2.7: The 9 building blocks for a business model (Source: Osterwalder, 2004:44 with adaptation)

On the other hand, the question regarding what 'parts' are business models made of was answered by Casadesus-Masanell and Ricart (2009:6), who contend that they are composed of two different elements, namely:

a. The concrete choices made by management about how the organisation must operate, and
b. The consequences of these choices.

They distinguish three types of choices made by management: policy choices, asset choices, and governance structure choices, and indicated that every choice has some obvious implications.

2.9 THE ROLE OF BUSINESS MODEL IN ENTERPRISE VALUE CHAIN DEVELOPMENT

Business model literature is consistent with a fundamental assumption indicating that business models represent a strategic response to clearly identified market opportunities and boundaries, seeking to achieve an optimal arrangement of a firm's resources with those of its value chain (Holloway & Sebastiao, 2010:87, 88). Holloway and Sebastiao (2010:87) maintain that the requirements for the application of a business model construct has been restricted to emerging markets; according to them, in the sense that its definitions rely upon existing market structures, known customer preferences, and established competitors. Baden-Fuller and Morgan (2010:157) view the '*role of a business model as one that provides a set of generic level descriptors of how a firm organises itself to create and distribute value in a profitable manner'*. Their analysis indicates that models are used to address and help solve one basic problem, which is, a lack of knowledge. They caution that business models should not be presumed to be recipes or scientific models or scale and role models; rather, an all-time role player for different firms and for different purposes (Baden-Fuller & Morgan, 2010:168). Sako (2012:23), Chesbrough (2010:355), and Chesbrough and Rosembloom (2002:533) demonstrate that the functions of a business model are to:

- articulate the value proposition; that is, the value created for users by the offering based on the technology;

- identify a market segment; that is, the users to whom the technology is useful and for what purpose; and specify the revenue generation mechanisms for the firm;
- define the structure of the value chain within the firm required to create and distribute the offering, and determine the complementary assets needed to support the firm's position in this value chain;
- estimate the cost structure and profit potential of producing the offering, given the value proposition and value chain structure chosen; in other words, it specifies the revenue generation mechanisms;
- describe the position of the firm within the value network or ecosystem, thereby, linking suppliers and customers, including identification of potential complements and competitors;
- formulate the competitive strategy by which the innovating firm will gain and hold advantage over rivals.

Osterwalder (2004:19) categorizes five functions of a business model as:

1. understanding & sharing the business logic,
2. analysing the business logic,
3. improving management,
4. fostering and increasing innovation and readiness for prospect, and
5. facilitating patenting.

The integration of resources, partners, suppliers, customers and other agents into cooperative networks that evolve with market conditions remains a requirement for successfully implementing a business model (Holloway & Sebastiao, 2010:87). The integration of these variables in the emerging market context, according to Holloway and Sebastiao (2010:86) is considered as a co-evolution, which simultaneously influences each other. They, furthermore contend that this process begins by means of a firm's *hypothesized* business models, which define strategic actions that enable them to create value. This construct is synonymous with the process theory (of a business model design).

Holloway and Sebastiao (2010:88) associate the foundation for nearly all business model definitions to the theory of transaction cost economic (TCE), which emphasizes

on-going interactions needed to complete a transaction (Tadelis & Williamson, 2010:1), which is in the form of a vertical integration and a useful lens for understanding the potential benefit a firm stands to reap for venturing with its resource capabilities (O'Brien et al. 2014:26). According to this ideology, business models are designed and executed with the aim of enhancing transaction efficiency among value chain partners. This conceptual instrument representing transaction interrelationship directs the maximisation of transaction efficiency in a business ecosystem.

The review of Casadesus-Masanell and Ricart (2009:4) and Amit and Zott's (2001, 2006, 2007 & 2011) contributions of several theories in business model conceptualization include: Schumpeterian innovation; value chain analysis; the resource-based view of the firm; dynamic capabilities; transaction cost economics; and strategic network. According to them, none of these theoretical perspectives sufficiently and directly explains a business model as a concept. Despite these advances, Achtenhagen et al (2013:428) agree with Mäkinen and Seppänen (2007:743) about the inconsistencies in the underlying assumptions and propositions displayed by the theoretical foundations of the business model concept; despite its usefulness in a variety of ways (Baden-Fuller and Morgan, 2010:156).

2.10 PERSPECTIVES ON SOUTH AFRICA'S LIVESTOCK PRODUCTION

The pig farming SMMEs are on the smaller scale, and like other emerging farming enterprises, this sector struggles to survive and achieve commercial success (AgriSETA, 2010:8). Kemm (1993:3-135) identifies the South African Landrace, the Large White, the Duroc and the Pietrain as the predominant pig breeds, while Umesiobi (2000:111, 2008:83, 2010:473-474) identifies Mukota, Windsnyer and Kolbroek as the South African indigenous pigs that are commonly reared by the commonage farm co-operatives, arguably because of their relative resistance to diseases and harsh climatic conditions compared to the exotic pig breeds. According to Antwi and Seahlodi (2011:38) the commercial sector of pig production co-exists with the subsistence sector; pig farming is more intensive than the extensive sheep and cattle production, involving high capital intensity, high levels division of labour and seek both local and international markets.

The DAFF Profile of the South African Pork Market Value Chain 2015 (DAFF 2015:3) shows that the South African pork industry contributes around 2.05% to the primary agricultural sector, with a steady rise in gross value from 2005/06 to 2013/14. The profile shows that pork is produced throughout South Africa, as indicated in figure 2.8. It also reveals that as of 2011, the industry is estimated to employ about 10 000 workers.

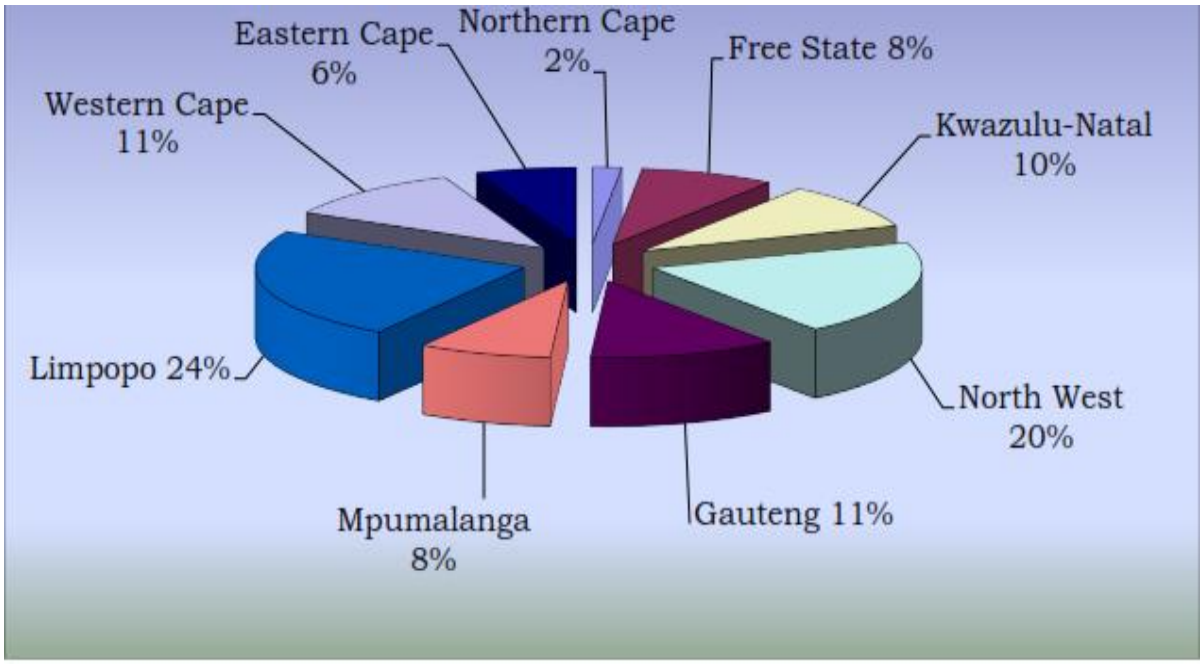


Figure 2.8: Distribution of Pigs per Province in 2014 (DAFF, 2015:4)

South Africa produced over 2 million tons of pork during the 2010/11 season. Local consumption of pork has remained lower than production, as figure 2.8 shows, indicating self-sufficiency in terms of pork. The report reveals that due to a high need for processed pork, South Africa still exports less pork than it imports. Table 2.1 below gives us a comparative picture of five sub-Sahara African countries with the highest pig populations.

Table: 2.1
Pig sector indicators in five sub- Saharan African countries with the highest pig populations, 2007

Country	Number of pigs (million heads)	Pig meat production (1,000 t)	Pig meat consumption (kg/person/year)
Nigeria	6.6	209	1.4
Burkina Faso	2.8	40	2.7
Uganda	2.1	105	3.4
South Africa	1.7	174	3.5
Cameroon	1.4	18	1.0

Source: FAOSTAT FAO Statistics Division 2010

2.11 CHALLENGES MILITATING AGAINST PIG FARMING SMMES IN SOUTH AFRICA

Vermeulen et al (2008:216) identify the inability of emerging pig farmers to comply with stringent specifications by large abattoirs, as one of the factors that lead to high-entry barriers. Phengsavnh and Stür (2008:57) and Lekule and Kyvsgaard (2003:113) identify disease epidemics and low animal productivity due to lack of feed, both quality and quantity, as the main constraints to pig production. Furthermore, Antwi and Seahlodi (2011:37) identify marketing, financial, technical, economic, land, social and cultural aspects as additional factors that influence the phenomenal collapse of pig production enterprises. Dietze (2011:51) identifies technical know-how and training, market knowledge, market access, quality and safety at smallholder level, resource availability and supportive structure as factors militating against the pig farming SMMEs.

Ramaila et al (2011:9) identify low productivity in the agricultural sector, a situation directly influenced by input and output factors on the one hand, and on the other hand, indirectly influenced by some radical developments in the sector, aspects such as a decreasing number of farmers (who are commercially established), and complexities in the land reform initiative. Drawing inference from a study conducted in Botswana by Montsho and Moreki (2012:1161), it was identified that the main challenges in commercial pig production include: 1) high feed prices, 2) inadequate slaughter facilities, 3) unorganized marketing, 4) breeding stock of inferior quality, 5) high piglet mortality due to poor husbandry management practices, improper housing facilities, feeding and healthcare procedures 6) underserviced land which lacks requisite

infrastructure that facilitates livestock production, such water works, electricity grid, etc. 7) weak linkages among major stakeholders in a collaborative effort, such as public and private institutions, 8) inadequate extension service due to lack of transport and personnel and extension delivery approaches, 9) the threat of trans-boundary diseases on pig industries and the community, 10) lack of research to support the industry, and 11) lack of access to capital.

In the DAFF Profile of the South African Pork Market Value Chain 2012 (DAFF 2012:24), it was revealed that pig production in South Africa is susceptible to world conditions and cheap import, stiff competition both nationally and internationally, health and safety issues, phyto-sanitary issues and the outbreak of diseases such as swine fever. Other challenging weaknesses range from the shortage of water in areas of operation to intensive labour utilization comparable to the red meat industry.

The concept document of the DAFF (2011:75) South African Agricultural Production Strategy, 2011 – 2025 identified key challenges faced by South African agriculture to include:

South Africa Agriculture Challenges:

- *An unregulated market environment;*
- *A growing retail supermarket sector;*
- *Increasing farmer to retail price differences;*
- *Growing food insecurity due to increasing food prices;*
- *Increasing input costs;*
- *Poorly defined economics of scale which leads to poor farm management, and local agricultural economic planning;*
- *Lack of, or poor agricultural spatial economic planning;*
- *Poor information and knowledge management for improving farming practices among smallholder farmers;*
- *Inadequate alignment between research and practices; and*
- *Little impact of research and development on growth and development of South Africa's agricultural economy.*

Figure 2.9: South Africa's agriculture challenges (Source: DAFF, 2011:75)

2.12 PROSPECTS OF PIG FARMING SMMES IN SOUTH AFRICA

The emerging pig farmers have the opportunity to resource through the established commercial farming enterprises who according to Vermeulen et al (2008:215) have their own breeding studs, artificial insemination units and feed mills. Dietze (2011:27) identifies prospects of additional nutritional value to the diet, easy entry with fast returns, low input cost, diversification, enterprise integration: pig, aquaculture and processing, moving on along the supply chain.

Lekule and Kyvsgaard (2003:113) identify sustainability of the traditional sector to be better than that of the intensive sector, thus indicating a lower fixed cost of traditional pig production compared with intensive production. As reported by Umesiobi (2008:79, 2010:471) and Lekule and Kyvsgaard (2003:111) the use of indigenous pig breeds which adapt to local conditions and household generated feeds; cross-breeding reproductive approach; availability of institutional support; development of feed strategies for low income communities based on cheap feed stuffs locally; and affordable pig housing design suited for poor rural population are advantages presented.

The existence of structures such as Women in Agriculture and Rural Development (WARD) and Youth in Agriculture and Rural Development (YARD) stands as an initiative giving rise to improved opportunity to promote rural agricultural activities and the use of livestock husbandry as the first port of call to advance local economic development and into enterprise status due to the ease of accessing available local resources and other infrastructures such as commonage centres (http://www.fs.agric.za/WARD.html).

In the DAFF Profile of the South African Pork Market Value Chain (2012:24), it was noted that:

- The turnaround production time for pork is quicker than red meat production.
- Piggeries can be established in relatively small areas.
- Feed costs are much lower than other meat production costs.
- The demand for pork meat has increased significantly over the years due to the prices and unavailability of red meat substitute.

SECTION B: AGRICULTURAL BACKGROUND OF THE FREE STATE

2.13 INTRODUCTION

This chapter touches on various aspects of the Central Free State agriculture and its natural endowment. Perspectives on antecedents of the present agricultural policy dispensation prior to the present democratic era is reviewed. The chapter examines relevant rural economic development policies in connection to agriculture as is the case with the Central Free State. In this chapter, a number of legal frameworks which provided backings to agricultural entrepreneurship is illustrated. Relevant national statistics bordering on the South African agricultural background is also presented.

2.14 TOPOGRAPHY OF THE FREE STATE

The Free State Province was originally the Orange Free State Boer Republic, which later became Orange Free State Province. The province is situated as the central province of South Africa; it borders six other provinces, namely, KwaZulu-Natal on the east, Northern Cape on the west, Eastern Cape on the South, North-West on the northwest, Gauteng on the north, and Mpumalanga on the northeast. The Province is typically flat and plain grassland, which provide ultimate conditions for various kinds of animal flocks; it has a spread of occasional hills. The Province is locally known to be the breadbasket of South Africa, claiming to produce over 70% of national grain. Mineral deposits such as gold and diamonds are commonly found in the northern and western part of the province.

Its area rank 3rd in South Africa, with a total land area of about 13 million hectares (about 129 825 square kilometres), and is divided into one metropolitan municipality and four district municipalities, which are in turn divided into nineteen local municipalities as indicated in figure 2.10. The Province is typified by warm to hot summers and cool to cold winters with occasional snowfalls experienced in some parts.

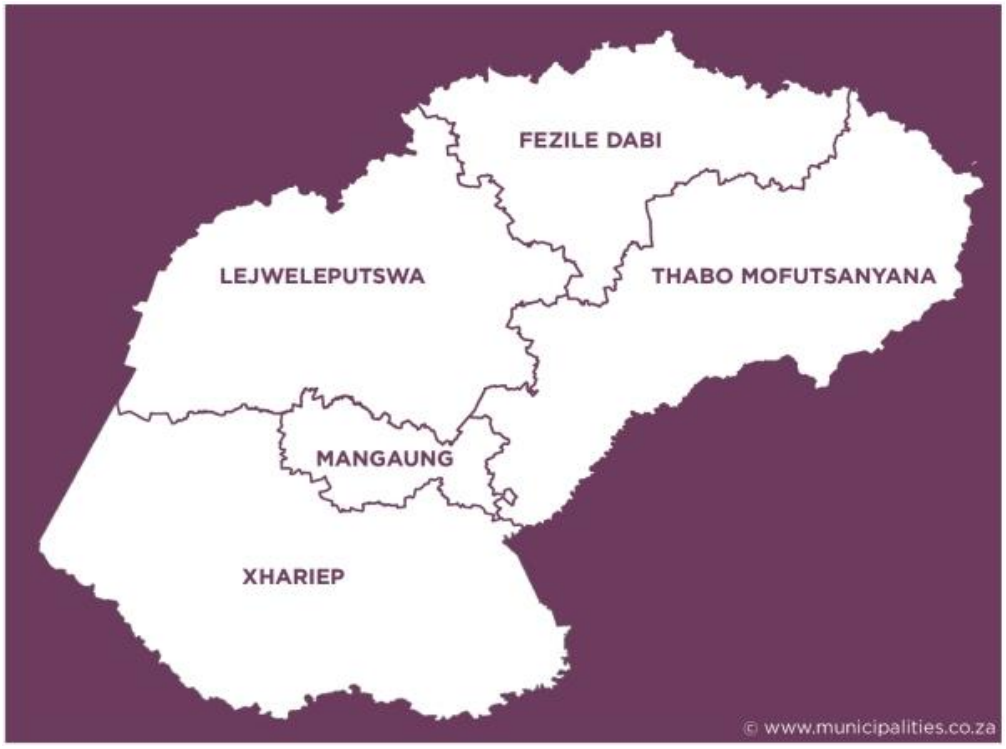


Figure 2.10: District Map of the Free State (Source: www.wikipedia.org)

2.15 DEMOGRAPHY OF THE FREE STATE PROVINCE

The mid-year (2015) population estimate of the Free State indicates a population of about 2.8 million, consisting a 5.1% of the total population of South Africa (54 million). In the Province, Motheo district ranks the highest population with 27.2%, followed by Thabo Mofutsanyana 26.8% and Lejweleputswa 23%. About 88% of the total population of Free State is black, followed by whites at about 8.8%. The coloured population makes up about 3.1%, whereas 0.1% comprises the Indian and the Asian population.

According to the report of the Statistics South Africa General Household Survey (2015:55), asset poverty as an economic condition is more persistent and prevalent in South Africa than income poverty, this a statement which is attributable to the Free State. The survey shows that 13.4% of household source of income is from business venturing. A proportion of 52.4% of households depend on social grants, 24.2% of households have social grants as their main source of income. The province experienced large migration outflows between 2011 and 2015. The unemployment

rate stood at 33.9% in the first quarter of 2016 (Stats SA, 2016:12). Table 2.2 below shows the municipal and provincial data of the 2011 Free State labour market situation. The province rate of urbanisation stands at 79.2%. (Stats SA, 2011). The Free State economy is based on the primary sector of agriculture and mining; this combined sector contributed about 18.5% to the Gross Value Added (GVA) of the province.

Table 2.2: Free State labour market situation 2011

Municipality	Employed	Unemployed	Not economically active	Population 15-64 years old	Labour force	Labour participation rate	Labour absorption rate	Unemployment rate
Xhariep	**32 900**	**12 032**	**47 070**	**92 002**	**44 932**	**48,8**	**35,8**	**26,8**
Letsemeng	9 164	2 624	13 263	25 051	11 788	47,1	36,6	22,3
Kopanong	11 336	4 193	15 703	31 232	15 529	49,7	36,3	27,0
Mohokare	7 672	3 518	9 771	20 961	11 190	53,4	36,6	31,4
Naledi	4 729	1 697	8 333	14 759	6 426	43,5	32,0	26,4
Lejweleputswa	**143 154**	**82 254**	**189 185**	**414 593**	**225 408**	**54,4**	**34,5**	**36,5**
Masilonyana	11 406	7 227	22 144	40 777	18 633	45,7	28,0	38,8
Tokologo	6 618	2 504	9 115	18 237	9 122	50,0	36,3	27,5
Tswelopele	9 694	5 174	14 090	28 958	14 868	51,3	33,5	34,8
Matjhabeng	99 650	58 524	118 450	276 624	158 174	57,2	36,0	37,0
Nala	15 786	8 825	25 386	49 997	24 611	49,2	31,6	35,9
Thabo Mofutsanyane	**144 129**	**77 939**	**239 128**	**461 196**	**222 068**	**48,2**	**31,3**	**35,1**
Setsoto	21 493	11 918	36 476	69 887	33 411	47,8	30,8	35,7
Dihlabeng	33 843	13 653	36 356	83 852	47 496	56,6	40,4	28,7
Nketoana	13 406	5 855	18 070	37 331	19 261	51,6	35,9	30,4
Maluti-A-Phofung	52 867	38 002	117 427	208 296	90 869	43,6	25,4	41,8
Phumelela	10 681	3 624	15 461	29 766	14 305	48,1	35,9	25,3
Mantsopa	11 838	4 888	15 338	32 064	16 726	52,2	36,9	29,2
Fezile Dabi	**117 732**	**60 344**	**143 132**	**321 208**	**178 076**	**55,4**	**36,7**	**33,9**
Moqhaka	36 040	19 554	51 074	106 668	55 594	52,1	33,8	35,2
Ngwathe	25 635	13 920	35 688	75 243	39 555	52,6	34,1	35,2
Metsimaholo	44 261	20 948	38 154	103 363	65 209	63,1	42,8	32,1
Mafube	11 796	5 922	18 216	35 934	17 718	49,3	32,8	33,4
Mangaung	**211 746**	**81 225**	**213 951**	**506 922**	**292 971**	**57,8**	**41,8**	**27,7**
Free State	**649 661**	**313 793**	**832 466**	**1 795 920**	**963 454**	**53,6**	**36,2**	**32,6**

Source: Stats SA, Free State Provincial Profile

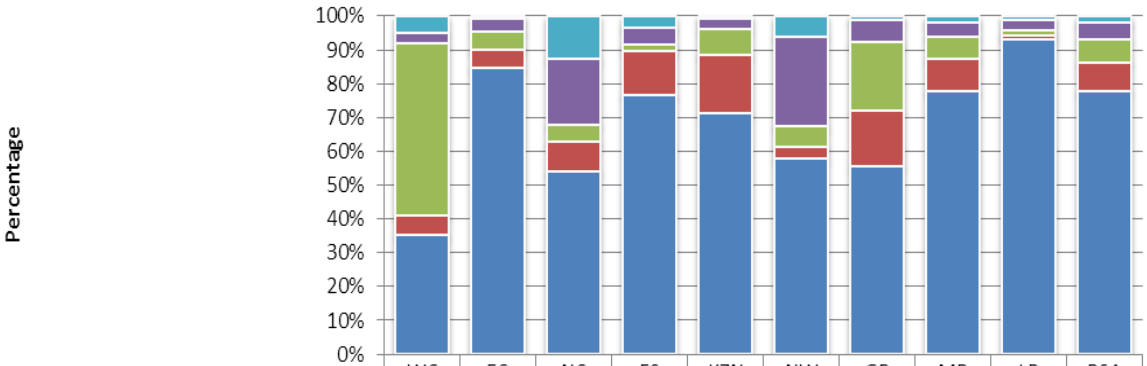
2.16 FREE STATE AGRICULTURE

In terms of provincial agricultural involvement, the same Survey shows that 20.6% of households in the Free State Province are involved in agriculture, of which 5.1% of the land is utilized for farming operations. Agriculture is a main source of income for 0.8%

of households, extra source of income for 3.2% of households, leisure activity for 1.5% of households, main source of food for 16.6% of households, and extra source of food for 77.9% of households, as indicated in table 2.3 below. Almost two-thirds of the gross agricultural income is generated from yield of field crops. The province is ranked 1st in the production of biofuels. Animal production, which is predominantly cattle and sheep, contributes 30% of the province's agricultural income (Stats SA, 2007). Other major agricultural produce of the province include cherry crops asparagus (both white and green varieties), soya, sorghum, sunflowers, wheat and potatoes. The production of flowers is lucrative and export oriented.

The total farming debt as at the end of December 2014 is estimated at R116 576 million, from R102 508 million in 2013, which is an increase of 13,7%. (DAFF, 2014:17).

Table 2.3: Main reasons for agricultural involvement by province, 2015



	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
Main source of income	4,9	0,8	12,7	3,6	0,7	6,3	1,1	2,0	1,2	1,8
Extra source of income	3,2	3,9	19,5	4,9	3,1	26,4	6,5	4,2	3,1	5,1
Leisure activity	50,8	5,3	5,1	1,8	7,6	6,0	20,3	6,5	1,5	6,8
Main source of food for the household	5,9	5,5	8,9	13,3	17,2	3,4	16,5	9,7	0,9	8,3
Extra source of food	35,2	84,5	54,0	76,5	71,4	58,0	55,5	77,6	93,2	77,9

Source: Stats SA. General Household Survey 2015

2.17 AGRICULTURAL POLICY DEVELOPMENT IN SOUTH AFRICA 1994 - 2016

2.17.1 Policy background

Over the decade, the South Africa agricultural sector has witnessed series of shifts in policy reforms. On the one hand, it is however undoubtable that these reforms were motivated by the desire to bridge the gap created due to the structural inequality characterising the agricultural sector, while it remained the mainstay of rural economy and indeed the entire economy, and on the other hand, according to the report of Agricultural Marketing Policy for South Africa 2010 (DAFF, 2010:3) these policy shifts were mainly guided by advances in globalisation policies in the context of multilateralism, bilateralism and regionalisation processes.

Greenberg (2010:2) reveals that agriculture was accorded less priority by the post-apartheid government as reflected in its budgets until around 2003 when the sectorial allocation, once again, started rising; nonetheless, the provincial budget allocation deficiencies toward the agricultural sector remained a challenge to the sector. Budgets are potent policy instruments of government on the fiscal perspective (Schick, 2005:109).

According to Olubode-Awosola (2006:19), previous agricultural policies and development strategies were implemented under different legal frameworks that affected access to and use of production resources and marketing of agricultural products. Generally, self-sufficiency in food, fibre, beverages and raw material for local industries remained one of the objectives of previous agricultural policies and development strategies. The following legal frameworks were enacted to enforce these policy objectives:

i. *Natives' Land Act 27 of 1913*: the year 2013 marked the centenary of this Act, which provided the bedrock for laws that enforced the systematic land dispossession by the state. Consequently, restricting the Black majority to owning land only in the 'native reserves' of 8 to 13% of the total land of South Africa, compared to 82 to 87% owned by the Whites. A legacy, the government, since 1994 has tediously and equitably been reversing (Dodson, 2013:29). Under such circumstances, most smallholders of which most were impoverished, were converted into farm labourers (Olubode-Awosola, 2006:20).

ii. *Export Subsidies Act of 1931*: this Act provided for a 10% subsidy on the value of all primary products exported, on discovering that this percentage subsidy did not meet farmer's expectation, in terms of export volume. The government then increased it to 25% in the next year, across the agricultural value chain. The benefits of these subsidies were off-set by a downward slope in the value of the South Africa currency. Rather, the policy was also intended to keep consumer prices as low as possible.

iii. *Agricultural Marketing Act 26 of 1937*: this Act gave the government control over domestic market and trade (OECD, 2006:10) and was replaced by the 1968 Marketing Act, which was subsequently replaced by the 1996 Marketing Act (Marketing of Agricultural Products Act, Act No 47 of 1996) providing for the formation of the National Agricultural Marketing Council (NAMC) in 1997 as the main government body intervening in marketing of agricultural products, with a mandate to administer the Act. The benefits of these Acts, *inter alia*, were to: (1) organize an industry, (2) grow the industry, (3) have funds to pay for important functions, and (4) increase the competitiveness of an industry www.namc.co.za/upload/NAMC-20-YEARS.PDF

iv. *Cooperative Societies Act of 1922, 1939*: these Acts marked the creation of the Marketing Board. No one of these Acts neither aligned with, nor encouraged cooperatives to align with the seven principles of the international Cooperative Alliance. The homelands' black-owned co-operatives were promoted by the government in the 1970s and 1980s (DTI, 2012:25). However, cooperatives thrived through substantial government support in the following mechanisms, *inter alia*:

- Land Bank access to finance
- Marketing Boards
- State subsidies and tax exemptions to agricultural co-operative.

v. *The Agricultural Product Marketing Act 41 of 1941*: the mains objective of this Act were:

a. To promote stability in the prices of agricultural products;

b. To narrow the gap between the producer price and the consumer price by means of rationalisation; and
c. To increase the productive efficiency of farming.

vi. *Import and Export Control Act of 1963*: this Act was promulgated for the purpose of applying stiff control and regulation on imports and exports of manufactured products, granting the minister of Trade, Industry and Tourism or any person authorised by him, powers to make prescriptions and grant permissions regarding classification of goods to be imported or exported according to source or origin or intermediate or final destination of goods, or according to the channels along which or manner in which goods are imported or exported, or according to the purposes for which goods are intended to be used. (http://www.cidb.org.za/Documents/PDM/Comp_Leg/act45of1963.pdf)

vii. *The Marketing Act of 1968*: this Act was promulgated following extensive amendment of the Agricultural Marketing Act of 1941; it came about with the intension of increasing the productivity of the farming industry and to support the efficiency of allied marketing, processing and distributive industries in order for producing and consuming communities to derive more benefits. The Act provided for the following types of marketing schemes:

- Single-channel fixed-price schemes
- Single-channel pool schemes
- Surplus-removal schemes
- Supervisory schemes
- Sales promotion schemes.

viii. *The Marketing of Agricultural Product Act of 1996*: this Act was a replacement of the Agricultural Marketing Act of 1937; it provided for the substantial reduction in state intervention in agricultural marketing and product prices. The Act aimed to provide free market access for all participants in the market; improve opportunities for export related earnings; promote agricultural product marketing efficiency; and promote a more viable agricultural sector (OECD, 2006:67).

Another exposure that seems interesting is a chronology of South African agricultural policy reform as contained in Sandrey and Vink (2006:2); their work traced the economic recessional consequences of the political crisis during the apartheid era, across, when the regime of PW Botha applied possible measures to protect the sovereign existence of the state against international interests. These measures prompted a drastic shift toward budget priority on defence and education, doubling it from 2.4% of GDP in 1971/2 to 4.8% in 1977/78, initiating a perpetual setback on the agricultural sector budget, which asymmetrically experienced a budget reduction from 1,5% to 0,6% of the GDP. According to them, this action triggered the following implications on agriculture:

i. Unimaginable perennial reduction in statutory funding on white (commercial) farmers.
ii. A significant rise in the price of farm products as competition among farmers and market forces swayed.

Some other features that characterised the economy partly as a result of these measures include:

i. Rise in inflation rate (basically cost-push) in the 1970s.
ii. Increased pressure on food production in the homelands.
iii. Tight control over the marketing of agricultural products under the consolidated Marketing Act of 1968.
iv. Unfriendly small-farmer policy in commercial agriculture.
v. Emphasis on environmental consequences of agricultural policies.
vi. The extensive liberalisation of the financial sector beginning from the 1970s.
vii. Depreciation in the value of the currency.
viii. A rise in the interest cost of borrowing.
ix. The gradual abandonment of the native Abolition of Passes & Coordination of Document Act of 1952, which was finally repealed on 23 July 1986, consequently triggering a mass movement of farm labour away to the rural and urban areas of South Africa.
x. Deregulation and liberalisation of the agricultural sector in the 1980s.

2.17.2 POLICY JUSTIFICATION

This policy took into consideration whether government policy tools are sufficient intervention mechanisms for addressing smallholder agribusiness challenges, with respect to issues around growth and sustainability among pig farming SMMEs in the Central Free State province of South Africa; furthermore, whether other intervention approaches are likely to be more appropriate for a pro poor agricultural growth possibility (Birner & Resnick, 2005:1450), given that over 90 percent of the world's 1.1 billion poor depend on small family farms (Lipton 2005:1).

Birner and Resnick (2010:1442, 2005:183) recall Karl Kautsky (1899), who raised and analysed a question in his book, *The Agrarian Question*, which remains important today: Is there a need and justification for agricultural policies that specifically support smallholder agriculture? According to them, *Kautsky was convinced of the technical superiority of the large farms and saw no justification for agricultural policies designed to support small farmers*, he based his argument on grounds that peasant producers persisted due to self-exploitation and under-consumption (Birner & Resnick, 2005:283).

Birner and Resnick (2010:1442; 2005:284) posit that policies as instruments to support the economic development of small farmers have proved to be a particularly successful strategy to address the above questions, which is evident in the experience of the twentieth century, and instances of these development abound in the Western industrialized countries and some other countries. Nevertheless, the same twentieth century experience still show challenges of identifying and implementing agricultural policies in addressing the above questions. They assert that the political power of large-scale landowners made a development strategy focusing on small farmers politically difficult in many Latin American countries, likewise sub-Sahara Africa. They share the same view with Chen and Ravaillon (2004:20) that the number of poor people in the sub-Sahara Africa has doubled during the last two decades, even as we reiterate the *"agrarian question"* today.

They recounted on the controversy over the future of small farms, as complicated by the following policy issues which seem repellent to smallholders:

- Globalization and related fundamental changes in the global food system, characterized by the rise of supermarkets.
- The increasing importance of private standards and labels,
- The emerging concerns for ethical and environmental aspects of food production.

Furthermore, Birner and Resnick (2005:306) maintain that *'experience has shown that policies that support small farmers by correcting for the market failures inherent in the different phases of agricultural development can be a particularly successful strategy to achieve pro-poor growth'*; and that policy intervention is also justified if the market fails to produce socially desirable outcomes due to other reasons (2005:286). They adapt the following policy phases in supporting agricultural transformation:

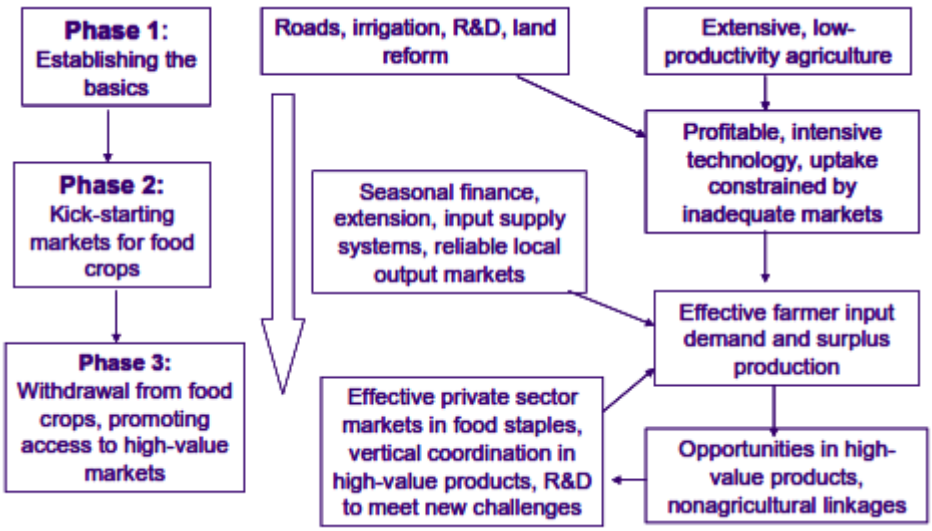


Figure 2.11: Policy phases in supporting agricultural transformation (Source: Adapted from Dorward et al., 2004)

2.17.3 POLICY FRAMEWORK

Since 1994, the agricultural sector in South Africa has emerged by means of a number of policy documents, which mainly include: Broadening Access to Agriculture Thrust (BATAT) 1995, the Agricultural White Paper 1995, the Agricultural policy in South Africa (discussion document) 1998, the Strategic Plan for South African Agriculture 2001 i.e. the Sector Plan; and Accelerated and Shared Growth Initiative for South Africa (ASGISA) 2005. Livestock improvement programme, formalisation of land

tenure, and the development of cooperatives (Tregurtha & Vink, 2008:1). Some more recent effort of government toward agricultural policy development include the drafting of South African Agricultural Production Strategy, concept document 2011-2025, the Agricultural Marketing Review Report of 2006 and the 2006 Organization for Economic Co-operation (OECD) Report on agricultural policy reform in South Africa.

2.18 AGRICULTURAL POLICY OBJECTIVES IN SOUTH AFRICA 1994 – 2016

2.18.1 The Broadening Access to Agriculture Trust (BATAT) 1995

As the earliest post-apartheid attempt to address the endemic dualistic imbalance in the agricultural sector, the Department of Agriculture having set out its support strategy mandate for the Reconstruction and Development Programme (RDP) of 1994: *to promote the contribution of agriculture to the development of all communities, society at large and the national economy, in order to enhance income, food security, employment and the quality of life in a sustainable manner* (Nduli, 1995:Internet) initiated BATAT as both short-term and long-term RDP implementation strategies, as well as the execution of the provincial and national budget on agriculture.

BATAT aimed to design and establish mechanisms for broadening access to agriculture for the historically excluded farmers in terms of their needs for financial support requirements, human resource development, technology development, delivery systems and marketing (Nduli, 1995:Internet).

2.18.2 The Agricultural White Paper of 1995

This was meant to become a statement of an extensive set of guiding principles for the agricultural sector policy development, rather than a traditional policy, though, influenced by the vision of the Reconstruction and Development Programme (RDP).

Specific policy goals of the Agricultural White Paper (The 1995 White Paper) included the following:

i. Developing a new order of economically viable, market-directed commercial farmers, with the family farm as the basis of that economic activity.

ii. Broadening access to agriculture via land reform, with enhancement from adequate agricultural policy instruments, and supported by means of the provision of appropriate services.
iii. Providing financial trade in and the marketing of agricultural products that reflect market tendencies.
iv. Undertaking agricultural production based on sustainable use of natural agricultural and water resources.
v. Developing and enhancing agriculture's important role in the regional development of South Africa and other countries.

2.18.3 The agricultural policy in South Africa 1998

This became an outcome of a discussion document for policy reform, referencing the desire to produce a clear and coherent agricultural policy framework, with the intention of outlining the role of the agricultural sector toward the realization of the Reconstruction and Development Programme (RDP) objectives, as well as the roles and responsibilities of other sectors of government and the private sector toward the sector's vision. Three major goals for this policy reform included the following:

i. Building an efficient and internationally competitive agricultural sector.
ii. Supporting the emergence of a more diverse structure of production with a large increase in the numbers of successful smallholder farming enterprises.
iii. Conserving agricultural natural resources and implementing policies and institutions for sustainable resource use.

2.18.4 The strategic plan for South African agriculture 2001

A Presidential working committee on agriculture was established as an attempt to foster closer collaboration between government and other stakeholders in the Agricultural sector, such as the Commercial Farmers' Union, Agri South Africa (AgriSA), and the emerging black farmers' union, the National African Farmers' Union (NAFU). This collaboration was intended to foster a joint commitment of effort and resources in the implementation of the *strategic plan*. The strategic objective of *The Strategic Plan* was to "*generate equitable access and participation in a globally*

competitive, profitable and sustainable agricultural sector contributing to a better life for all." Three Core Strategies of the Plan are:

i. *Equitable access and participation*: this strategy takes into consideration the enhancement of equitable access to and participation in agricultural opportunities; the de-racialization of land and enterprise ownership; and unlocking the full entrepreneurial potential in the sector, using programmes such as:
   a. Land Reform (and restitution)
   b. Empowerment and Participation
   c. Agricultural Support Services.

ii. *Competiveness and profitability*: this strategy takes into consideration the alleviation of the competitive status of the Historically Disadvantaged Individuals (HDI) in agriculture and agribusiness as indicated in the Agri-BEE Charter. The following indicators were helpful:
   a. Competitiveness index
   b. Agricultural Business Confidence Index
   c. Agricultural Trade Trends
   d. Employment Trends
   e. Profitability index.

iii. *Sustainable Resource Management*: This strategy recognises the importance of the sustainability principle "*to enhance farmers' capacities to use resources in a sustainable manner and to ensure the wise management of natural resources.*" Furthermore, it is designed to address issues of conservation, climate change awareness, clean development mechanisms, the deteriorating water quality, increased pollution, soil degradation, etc.

2.19 AGRICULTURAL POLICY IMPLEMENTATION STRATEGY IN SOUTH AFRICA 1994 – 2016

***2.19.1 Policy interventions and instruments*:** according to Tregurtha and Vink's (2008:8) review of agricultural policies and support instruments of 1994-2007, two

main categories of policy interventions were identified, namely: policy interventions and instruments aimed at stimulating output markets, which covers trade liberalization and market deregulation; and, policy interventions and instruments aimed at strengthening the performance of factor markets, such as land and capital input.

According to the report of Agricultural Marketing Policy for South Africa 2010 (DAFF, 2010) the most common agricultural marketing intervention support measures required by players across the agricultural value chain, including smallholder farmers, are the following:

a) Agricultural marketing,
b) Agricultural marketing infrastructure,
c) Agro-logistics,
d) Agricultural marketing skills,
e) Agricultural marketing institutions,
f) Agricultural export facilitation, and
g) Protection against unfair external competition.

Policy interventions and instruments aimed at stimulation output markets are articulated in the following:

a) The *White Paper on Agriculture* (1995);
b) Broadening Access to Agriculture Thrust (BATAT) report of 1995;
c) The marketing of Agricultural Products Act, No. 26 of 1937 and Act, No. 47 of 1996;
d) Water Act;
e) Trade Policy;
f) Labour Market Policy Reforms (Labour Act, No. 147 of 1993, Labour Relations Act of 1995, the Basic Conditions of Employment Act of 1997, the Skills Development Act of 1998, and the Employment Equity Act of 1998);
g) The Extension of Security of Tenure Act 1997;
h) The Strategic Plan for South African Agriculture of 2001;
i) The Agricultural Marketing review Report of 200;, and
j) The 2006 Organisation for Economic Co-operation and Development (OECD) report on agricultural policy reform in South Africa.

SECTION C: ATTRIBUTES OF BUSINESS MODEL TYPOLOGY

2.20 INTRODUCTION

A considerable body of literature on strategy demonstrates the dynamic nature of the business environment and its resultant evolution and revolution regarding business models. Other literature have succeeded in advancing the typology of business models for successive environments in which a business operates, recognising that these advances in models come about by some means of effectuation (Holloway & Sebastiao, 2010:87). Interestingly, integrating contemporary business model typologies in sync with environmental contingency to drive enterprise sustainability is yet another concern amongst emerging enterprises.

In this major concern lies the issue regarding the overhauling of existing business models, which have components that are not up-to-date with emerging environments, so that an industry specific model with peculiar model components faced with a destructive attack by competitors, ought to be evaluated in light of its validity in justifying whether any one of such components will be counter-productive for specific enterprise strategies. For example, an innovation-driven resell enterprise in the livestock business may have to use a variety of unconventional strategic approaches, with a blend of offerings, including customers' saving schemes designed to create and capture values, because the environment of its target market justifies it. This is possibly so because the environment of its target market justifies it and this automatically alters its revenue (generation) component, apart from some systemic effects.

Model adaptation and model innovation will herein be addressed. This chapter will further attempt to examine those suitable for application in livestock farming, keeping in view, business model components and particularly revenue/financial models and marketing strategies.

2.21 CONCEPTUALISING TYPOLOGY

This section of the chapter attempts to configure continued development of business models in relation to the concept of typology. Typology is popularly considered to

imply: '*the study of types'* (http://en.wikipedia.org/wiki/Typology); nevertheless, its concept also includes, among other meanings, '*the systematic classification of types that have characteristics or traits in common*' (http://www.thefreedictionary.com/typology). Popular examples of what is generally considered to be typology abound in literature, such as those of Weber (1946) and Mintzberg (1979, 1983). The word originates from '*typos'* (Greek) and '*logy'* (English). In this context, the concept extends to provide unique 'impressions' on defunct and extant business models, which will be used to set out the framework for our analysis. The concept is restricted to idealized impressions. Furthermore, complex cause-effect relationships can be organised by mean of typology (Fiss, 2011:393).

The work done by Harold Doty and William Glick in 1994 was remarkable in demonstrating a different paradigm that embraced the concept. They consolidate on the ground that typology meets the criteria for a theory and, in fact, a form of theory that is often misunderstood (Doty and Glick, 1994:231). They maintain that typologies are differentiated from classification systems, as popularly perceived. The primary basis of their argument was that *"typologies are complex theoretical statements that should be subjected to quantitative modelling and rigorous empirical testing"* (p231).

To substantiate the above construct, we quickly review the attributes of a theory by its definition according to literature. But, first a number of definite statements must be kept in mind: Doty and Glick (1994:231) indicate that a theory is a series of logical arguments that specifies a set of relationships among concepts, constructs, or variables; many other definitions are mimicries of the above statements. However, according to Gay and Weaver (2011:24) what is a theory is often confronted by conflicting points of view, little agreement, a lack of consensus on its definition, its quintessential nature, the criteria for establishing a "good" theory, the definitive purpose of theory, and the best methodology for theory-building.

2.22 TYPOLOGICAL THEORY

Doty and Glick (1994:232) are distinct regarding the use of the concept of typological theory, even though according to them, the meanings of both variables seem interrelated. In the same work, they indicate that there are at least three primary criteria

that theories must meet, and on which theory-building experts seem to agree: 1) constructs must be identified, 2) relationships among these constructs must be specified, and 3) these relationship must be falsifiable. This section of the study aims to link typological theory with the quest for a typology of modelling cooperative business organisations in support of SMME livestock farming businesses. However, Whetten (1989:491) maintains that he does not distinguish between a model and a theory. Furthermore, another aim of this section includes an attempt to identify and describe the ideal type of cooperative organisational form of business or strategy. The attributes of this ideal type is expected to form the parameters of our proposed commonage cooperative model. Using a statistical model, these parameters are often expressed in a mathematical concept and language in describing a system for the purpose of prediction, extraction of information and description of possible stochastic structures (Konishi & Kitagawa, 2008:1). This is so that if adapted for livestock farming businesses, should improve performance and sustainability amongst pig farming SMMEs in the Central Free State as it will serve as a prescriptive design guideline for new and existing cooperatives.

This work takes cognisance of complications associated with theoretical modelling, since, according to Doty and Glick (1994:236/7), “three factors which complicates modelling a typological theory must be considered: 1) the ideal types unique to each theory must be modelled, 2) the relative theoretical importance of the first-order constructs used to describe the ideal types must be included in the model, and 3) any assumptions about contingency factors and hybrid types must be modelled”.

2.23 THE CONTINGENCY OF BUSINESS MODEL TYPOLOGY FOR LIVESTOCK COOPERATIVES

The growing trend and development in business strategies as practiced (Jarzabkowski, 2005:1) in the industries indicate that as society evolves business models follow suite or vice versa. It is notable in recent times that innovations in business models have increased: as a result, more business models have emerged. We question the rationale for business model designs aiming to remain sustainable for improved performance in organizations, in the face of a growing culture of competitive innovation among firms in industries. Therefore, one classification set of

business models in a given industrial regime may become heterogeneous with respect to another industrial regime, based on contingency.

Contingency in business model typology has been considered based on two approaches: theoretical and empirical, as applicable to the organization. Contingency theory of organizational structure is used as a major framework for the study of organizational design (Donaldson, 2006:19). Donaldson (2006:20) was specific on the concept of 'fits' when he stated that *"the most effective organizational structural design is where the structure fits the contingencies",* recognising that the theory is dynamic, with a process of specifying which structure fit any given circumstances an organization finds itself. By implication, it demonstrates how organizations change over time, in terms of structures due to their contingencies (Donaldson, 2006:37). Klaas (2004:1) took a uniform position in this perspective on the concept of dynamic fit in contingency theory, using System Dynamics (SD) methodology in explaining structural adaptation with respect to organization and environment in a bid to improve organizational performance based on efficiency, effectiveness and viability. This concept of 'fit', from both Donaldson (2006:37) and Klaas (2004:2), assumes to fall in line with process ontology- which aims to become a useful methodological tool in enhancing transformation from static to dynamic analysis (Klaas, 2004:14).

The rationale for a considering the contingency approach as a consequence of business model typology was extended to address improvement in performance outcomes, as well as its relationship to the formation of organisation. An ontological attempt to conceptualize typology was based on the contingency approach; this attempt will serve as a response to the call for further research on the impact of business model innovation on performance and sustainability (Hartmann et al, 2013:13; Zott & Amit, 2007b:1). The foregoing perspective was equally extended further by Zott et al (2008, 2010) when they acknowledged the interaction between product market strategy and the performance shown by most enterprises included in their research, as a contingent effect of business model dynamics. According to them, positive performance was associated with businesses whose business models are novelty-centred among other factors.

In Chapter 1, a fair number of existing business models for livestock farming enterprises was identified. In this section, efforts will be devoted to systematically classifying prominent business models in contemporary trends. In view of the aforementioned definitions of a business model, this study therefore considers literature on criteria for classifying existing business models. In contemporary time, existing business models are apparently innumerable. A quick review of the *MIT Business Model Archetypes* (BMAs) gives an inkling that a business model typology can be based on two fundamental dimensions of what a business does; and how a business makes money doing these things (Weill et al, 2005:5). Weill et al (2005) indicate that there are two dimensions of what a business does: firstly, what type of rights are being sold, such as the right of *ownership* and the right of *use* of asset, which points to business models in relation to:

- Creator
- Distributor
- Landlord, and
- Broker.

According to them, another dimension to what a business does, which is a key distinction used to classify business models, is basically what types of assets are involved. They therefore identified four important asset types, such as:

- Physical
- Financial
- Intangible, and
- Human.

In terms of how a business makes money, company revenue was used as a guide. They conjecture that, whereby, a company can at the same time have more than one business models, in such a case, every business model is classified separately for each revenue stream the company report. However, according to them, multiple revenue streams does not necessary indicate that a company operates using multiple business models.

Christensen and Johnson (2009:7) identify three types of business models to include: Solution shops, value-adding process businesses, and facilitated network business.

In the publication of Chron, Small Business, George Root III indicated that most businesses operate under the basic categories of manufacturer, distributor, retailer or franchise, of which a company must determine which model to follow (http://smallbusiness.chron.com/types-business-models-79.html). In another publication of Chron, Kyra Sheahan considered it as an underlying principle for how a firm choose to conduct its business, three types of business model was identified: Bricks and Clicks Model, Bait and Hook Model, and Subscription Business Model (http://smallbusiness.chron.com/three-types-business-models-838.html).

2.24 CONSTRAINTS ON DIVERSIFICATION AMONGST LIVESTOCK ENTERPRISES IN THE CENTRAL FREE STATE OF SOUTH AFRICA: A LIFE CYCLE PERSPECTIVE

2.24.1 Background

South African emerging livestock SMMEs face relative uncertainty, which results in frequently changing strategic directions (Ramaila et al 2011:19; Leclère et al 2013).. The majority of existing emerging livestock enterprises, which form the vast population of the food industry, display attributes of unsteadiness as symptoms of internal weakness. A critical examination of the dynamic strengths, weaknesses, opportunities and threats associated with these enterprises, as they operate in a globalising industrial system, suggests a need for improvement in management training and development of personnel responsible for enterprise performance. The agriculture sector has been a catalyst in the economy as well as remaining more active, partly due to government support. This SMME decision to redirect resources and activities into something new may be faced with constraints. Yet the gain of diversification among this sector is relatively inconsistent, which, despite volumes of activities, failure and short enterprise life cycle seems very likely.

Regardless of whether or not livestock enterprise diversification will yield a premium or discount to firm value, at any given stage along life cycle continuum, issues of sustainability among livestock enterprises continue to attract attention. The survival of emerging livestock enterprises is important to the South African economy. Equally so is the need for regulatory authorities and enterprises to understand the relational

influence of life cycle stages on product, enterprise and/or industry, such that it can be a tool for policy and strategy formulation; and to support the identification of life cycle stages. Furthermore, this will generate knowledge as to what life cycle stage is most favourable for diversification decisions among livestock enterprises, having exhausted other strategies open to them in their product/market mission.

The number of livestock enterprise life cycle stages varies among scholars, thereby making it difficult to indicate as to which stages are likely to be most favourable of livestock enterprises, given the fact that enterprise characteristics differ. Our survey is domestically bound to the Free State province. Domestic dimensions of diversification may take the form of industry or geographic dimension. A firm can choose to relocate operational activities across industry or geographic area with the same or a new product line/new market. Alternatively, it might opt for a departure from the present product line and its present market structure. Yet, a firm should understand the life cycle of its deliverables. In this section of the study, a distinction was drawn between firm-specific product life cycle and industry-specific product life cycle. The role of government by way of policy to enhance a favourable local product/industry life cycle is hardly underestimated, especially with respect to the protection of small businesses.

Following available life cycle models in the research, there is a consistency that terminal stages are more likely to be considered less favourable, if actions are not taken to reverse the trend. This study assumes that the imminent progression to a declining stage is a potential danger. In most cases, among livestock enterprises, diversification is often prescribed as the best bet for the worst scenario in a product/market mission. Consideration ought to be given to issues of post-diversification discount or premium to firm value as a consequence. An empirical model to guide emerging livestock enterprises decision for diversification is necessary to address questions as to *when* and *how* livestock enterprises diversify.

2.24.2 OVERVIEW

Apparently, a number of typical challenges are likely to confront existing livestock enterprises: first, marketing management, operations management, and as a matter of national economic concern, there also lies the challenge of sustainability of

employment generation. Interestingly, for the purpose of management skills and techniques, emerging livestock ventures have access to leverage existing development institutions in South Africa, such as Small Enterprises Development Agency (SEDA), Free State Development Agency (FDA), just to name a few. In the absence of a fundamental structure of sustainability, employment generation suffers.

It is in the best interest of government to realize that the cost of compliance requirements has increasingly impacted negatively on livestock enterprises, as many small businesses freely enter into and exit from business, they dissipate seed capitals accumulated from other sources to government by way of compliance; rather, government remains the ultimate end-point in which survivalist venture capital dissipate. Furthermore, we find that the sole proprietorship which was a primary focus of government institutional efforts has not been a reliable catalyst for sustainable employment generation in our present industrial environment.

Therefore, the responsibility is of government to ensure that, apart from having a regulatory system that aims on generating government revenue through industrial activities, sustainable SMME development is uppermost for the interest of enterprise actualization and competitiveness. More scrutiny is required to ensure that enterprise governance structure is improved as a step in this direction, starting with entrepreneurship business management training and education for emerging SMMEs. Emerging livestock enterprises need a clear sense of focus and strategic directions in their market offerings to avoid failure in an environment characterized by a high entry and exit rate.

2.24.3 Problem focus

Livestock enterprises in South Africa are likely to resort to diversification due to the aim of prevailing or sustaining pressure over a number of dynamic factors. A Department of Trade and Industry (DTI) 2008 annual report confirms that the rate of liquidations further corroborates the evidence that enterprise performance is less than satisfactory. However, the rich diversity of the economy remains a strong reason to some for diversification regardless of any pros and cons. On the contrary, Bhana (2006:19) theoretically claims that managers doubt the benefits that flow from

diversification and are likely to rationalize their growth strategies, initiate divesture and restructuring.

However, in spite of recurrent constraints bordering on diversification as some livestock enterprises progress along their life cycle continuum, diversification is considered a prescriptive antidote to issues regarding product-market mission failure (Ansoff, 1957:114). The ultimate aim of entrepreneurial diversification is to achieve enterprise growth, hence, the diversification decision as an approach to enterprise life cycle management. Many livestock enterprises acknowledge the value of diversification in solving problems of external growth and tend to apply the diversification approach, yet, find inconsistent results as some achieve undesirable consequences due to the problem of inability to:

- Identify and link appropriate choice of diversification dimension to a given enterprise life cycle stage for an actual scenario among livestock enterprises in the Free State Province.
- Establish whether factors other than diversification for external growth are responsible for undesirable consequences of external growth among livestock enterprises in the Free State Province.

Undesirable consequences of the above problem are as follows:

- Loss of Investment**:** opportunity cost of investment and the frustration associated with it can be devastating, for it is rather unfortunate to have an investment lost due to an enigmatic situation that indicates that there has been an incorrect application of diversification approaches; where the gap is between knowledge of diversification theories and a practical demonstration of theoretical principles and a prescribed model.
- High rate of Unemployment: Government is continually increasing its social welfare cost toward the less privileged who are mostly unemployed in our society. The adage that practice makes perfect entail that in the absence of practice, experience is lost and this is synonymous with the unemployed in our society - who become so due to the undesirable consequences of lack of enterprise growth.

- Stakeholder's Disillusionment: persons who influence or are influence by business activities, who expect to derive satisfaction and fulfilment through the existence of certain businesses in some way might be disappointed finding that such businesses no longer operate due to the above-stated problems. The spiral effect of these problems on supplies, customers, employees, government and other stakeholders is nevertheless sensitive.

- Economic Instability: It goes without saying that individual wealth creation ability and buying power will be hampered, all of which lowers confidence in the economy due to problems associated with diversification among emerging enterprises in South Africa and it is evident in available indicators such as GDP per capita, CPI, and PPI.

2.24.4 Theoretical consideration

Three basic concepts exist in the background: diversification, enterprise life cycle and constraints, two of which encapsulate in organisational growth theory. Both diversification (as an external growth strategy among the grand strategies) and enterprise life cycle (that explains growth process) are variables operating within the framework of the research problem to be investigated among the livestock SMMEs in the Free State.

Diversification theory was made prominent when postulated by Igoh Asoff in a ground-breaking work in 1958 and followed by explicit attention in the works of Gort (1962) and Rumelt (1974, 1982). The theory was aimed to be applied in addressing the challenges of long-term growth of an enterprise. The theory as a final growth alternative suggests a simultaneous departure from the present product line and present market structure of an enterprise as a product-market strategy for a mission. According to Ansoff (1958:114), diversification generally requires new skills, new techniques, and new facilities. He further maintains that "as a result of diversification, changes in physical and organisational structure of the business are bound to occur representing a departure from the past".

The theory underpins two concepts of note, such as: product-market mission, and product-market alternative strategies, of which diversification is the final alternative. A theoretical principle underlying diversification can be described in terms of enterprise resources; hence, the basis of Resource Base Theory (RBT) of diversification, which proposes that "*a firm's level of diversification and its performance are significantly influenced by its resources and capabilities*" (Wan et al, 2010:1336). Penrose, in 1959 emerged with a seminal work *The Theory of the Growth of the Firm* which stands as a significant intellectual lineage for RBT. This theoretical perspective illustrates the link between resources and growth as a theoretical basis for enterprise growth in the form of enterprise diversification from the perspective of enterprise resource and capabilities (Wan, et al, 2010:1336). This resource-based assumption of diversification was corroborated by Santalo and Beccera (2009:56), and Eukeria and Favourate (2014:192) in their explanations of motives for diversification, pointing out the market power motive, the agency motive and the resource motive.

This theoretical principle was originally provided to underpin enterprise orientation to diversification in contrast to contemporary practices. Wan et al (2010:1339) illuminates on this strand and posits, first, that the RBT offers a strong theoretical logic that can explain and examine diversification in general and related diversification in particular. Second, firms formulate and implement strategies to create and extract value from the resources they possess. Third, firm's executives as organizational stewards create synergistic value from firm resources as one of the hallmarks of good management. Figure 2.12 portrays the above assumption by Wan et al (2010): corporate life cycle, and firm life cycle.

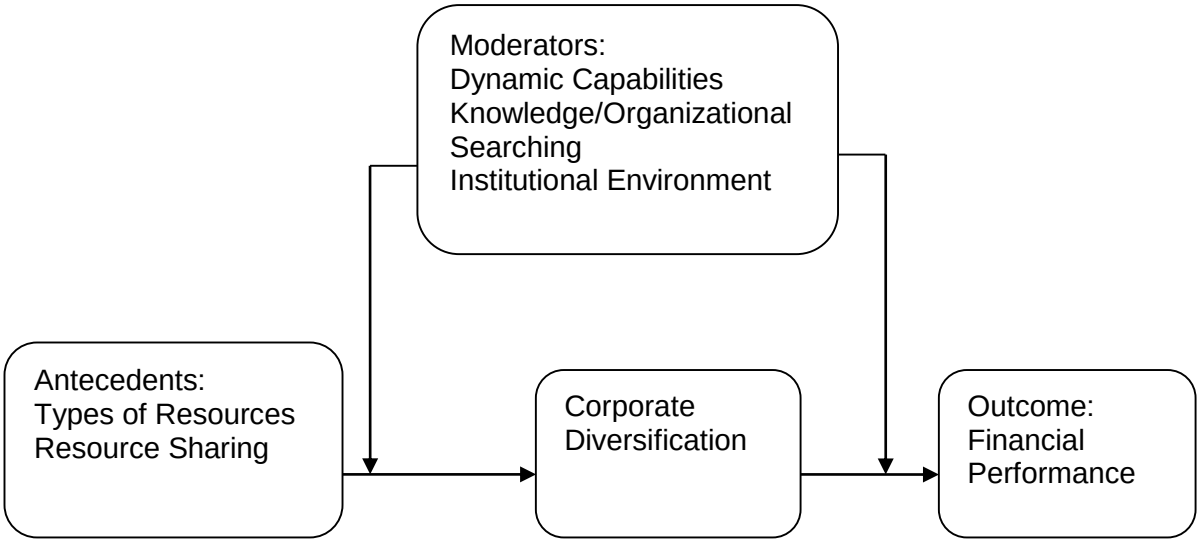


Figure 2.12: A Conceptual Map of Diversification Research Integrating the Resource-Based-Theory (Source: Wan et al, 2010, with adaptations)

Enterprise life cycle is the next concept describing the major variables in operation within this framework. The concept is used interchangeably with organisational life cycle,

This variable is conceptualised on the basis of three highly recognised Organisational Life Cycle (OLC) proponents: Haire (1959), Greiner (1972), and Jones (2010). Their connection to this framework is on the basis that Haire (1959) is the earliest OLC model, Jones' (2010) OLC model is an extended modification of Greiner's (1972) OLC model which gives relative impetus to this logical structure. This entire growth model, like some others, is based on a biological metaphor for organisational growth, typifying organisational growth patterns by those of living organisms.

Haire in 1959 emerged with his work *Modern Organisation Theory,* based on his 'Biological Models and Empirical History of the Growth of Organization' with a hypothesis that an organization follows a definite and predictable pattern of growth similar to that followed by individuals, inducing the proliferation of stage models of organizational growth. According to him, "an organization has bodily properties and growth characteristics typical of the biological world" (Gergen and Joseph, 1996:360).

Essentially, it served as a useful metaphor in terms of developing the framework outlining the five traditional stages of SME growth.

Greiner's (1972:398) OLC model was the foundational work on the theory of firm growth to "identify a series of developmental phases through which companies tend to pass as they grow". The model is characterized by evolutionary and revolutionary growth periods based on five critical growth dimensions, namely: (1) organisational age, (2) size, (3) stages of evolution, (4) stages of revolution, and (5) the growth rate of the industry. On the other hand, the growth phases identified in the model contain a relatively calm period of growth characterized by management crisis at the end of each, and are in the order of: *"(1) growth through creativity, followed by a crisis of leadership, (2) growth through direction, followed by a crisis of autonomy, (3) growth through delegation, followed by a crisis of control, (4) growth through coordination, followed by a crisis of red tape and (5) growth through collaboration, followed by a crisis of psychological saturation among employees".* According to him, *"this crisis can be solved by new structures to periodically rest, reflect, and revitalize themselves".* All five phases begin with a period of evolution having a driving force (also considered as a dominant management problem). According to Greiner (1972:398), it is essentially a management task to ensure progression through the period of revolutions. Figure 2.13 illustrates Greiner (1972) OLC model:

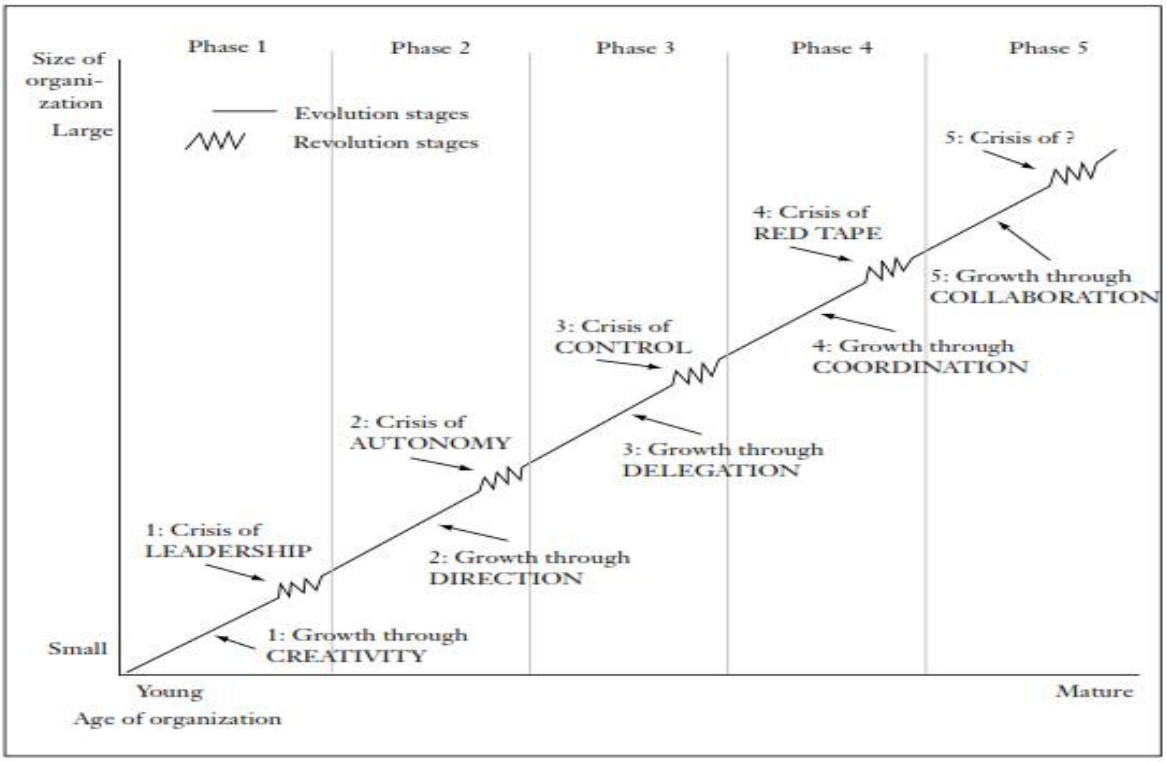


Figure 2.13: The Five Phases of Organisational Growth (adapted from Greiner, 1972:402)

Jones' (2010) OLC model is an outstanding theoretical perspective in support of the study framework. His work considered four key phases to SME start-ups, and each of these phases comes to an end with a defining moment, which he called a 'plateau stage', requiring an important decision to be made; in other words, each of the four stages consists of a phase and a plateau. Jones' (2010:1) OLC model is unique in the sense that unlike many of the traditional models, it is suitable for small entrepreneurial businesses, because not all such businesses must go through the typical stages of development or risk failure, the same position which is maintained in this study. This model is in contrast to the theoretical assumption that growth process is linear; in other words, the plateau at each stage indicates that the development of small firms does not necessarily follow a linear process, thus given justification for the 'plateau'.

Jones (2010:6) is of the view that in order for SMMEs to fit into one model, all can best be narrowed down to four phases of life cycle, each characterised by a potential and actual crisis requiring management. The following figure illustrates Jones' (2010) OLC model:

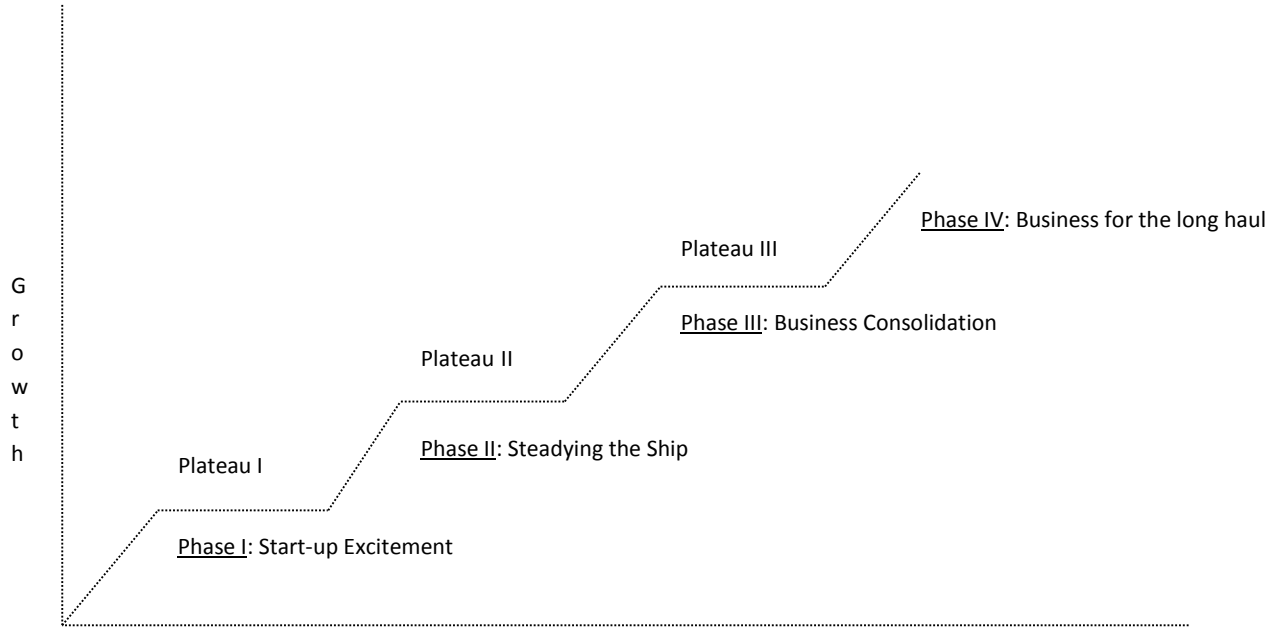


Figure 2.14**:** SMME growth-time graph with phase and life cycle plateaus (Source: Jones (2010) with adaptations)

Jones (2010:8) highlights that poor practice (management) leads to SME mortality, indicating the phenomenal business failure at an early stage of existence and in order to account for this high level of failure, he rather considers company life cycles as an approach.

In a study by Shyu and Chen (2009:57) in which they investigated the relationship between the extent of diversification in firms and their performance at different life cycle stages by treating both variables as endogenous, using a simultaneous equation system, they corroborate contemporary views as empirically initiated by Lang and Stulz (1994:1251) and Berger and Ofek (1995:49) that show that firms that diversify are bound to incur significant value destruction. They, however, differ in some cases regarding the ages of firms in their samples and order of diversification. This was followed by other studies questioning this phenomenon in different dimensions.

Shyu and Chen (2009:57) offer a theoretical perspective that shed light on this framework. Like Ansoff (1958), first, they posit that *"diversification is one of the strategies for reducing firm risk or seeking growth opportunities to sustain the firm's*

life" (p.57). They investigate what bearing corporate diversification and performance holds across life cycle stage and the effect of diversification on performance with respect to related and unrelated dimensions. They confirm thus far that no study has attempted to examine what role corporate diversification play at the various corporate life cycle stages.

Following the work of Shyu and Chen (2009), the current study connects environmental influences constraining diversification and examines its implications and corporate philosophy propelling or inhibiting the stages of growth through development in the context of SMMEs in the Free State. The following is a figurative depiction of the above theoretical framework and logical structure:

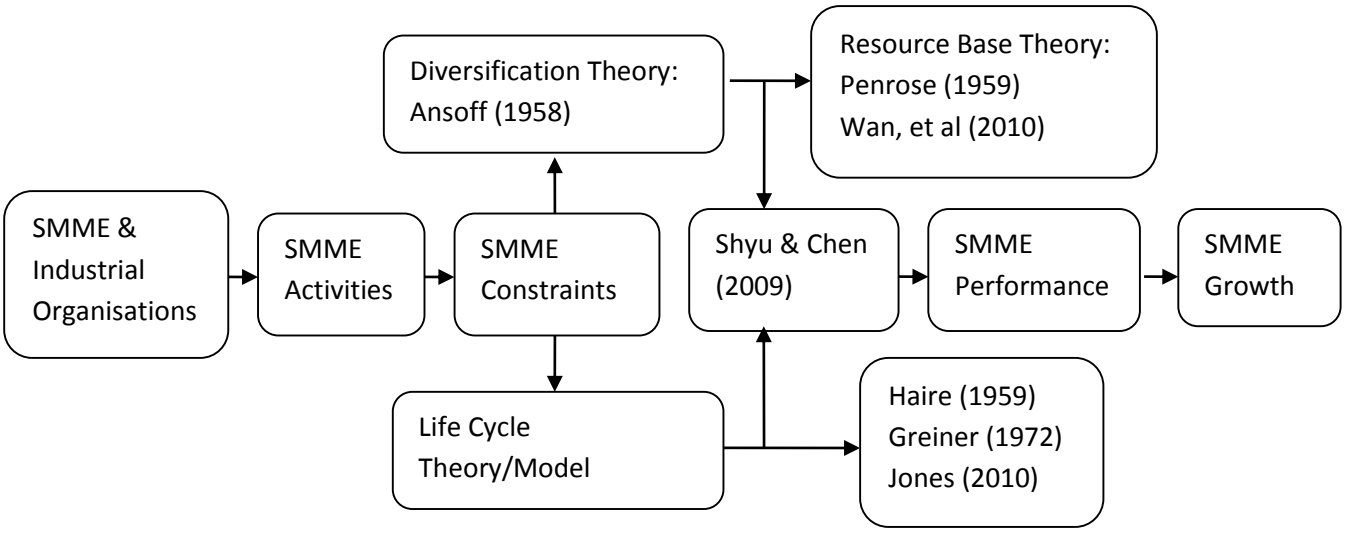


Figure 2.15: Theoretical Framework and Logical Structure (Source: Author, 2016)

The above model describes a connection between SMME's activities and growth. It identifies the existence of constraints bordering on two complementary concepts: enterprise diversification theory and life cycle theory, using the Resource Based Theories of diversification illustrated in the works of Penrose (1959) and Wan et al (2010); and the life cycle theory by Haire (1959), Greiner (1972) and Jones (2010). Both concepts connect the work of Shyu and Chen (2009) to corporate diversification and life cycle to justify SMME's performance towards growth.

2.25 ECONOMIC GROWTH THROUGH A SUSTAINABLE SMALL BUSINESS SECTOR

There is a growing argument as to the extent to which the proliferation of SMMEs forms the basis of economic growth in South Africa. This is premised on whether or not its volume of activities is comparatively far more effective than those of established enterprises, with respect to national economic growth. This scholarly debate raises concern that may inspire confidence amongst policy makers in government over SME policy directions. The need for a stronger SMME is acknowledged, alongside phenomenal fundamental challenge of poverty, unemployment and inequality in South Africa, as a result an improved effort is required by the state to prioritise and protect the SMME sector. This draws attention to whether a stronger SME sector is more likely to demystify poverty, unemployment and inequality in South Africa than the foregoing established enterprises as a whole. This section will review literature on the implication of economic growth though a sustainable small business sector in South Africa.

According to Carree and Thurik (2002:3), “The re-evaluation of small firms is related to a renewed attention to the role of entrepreneurship in firms”. They emphasize the role of ownership and management as a major difference between the organization of a large firm and a small firm. Such a role according to them is described with the term ‘entrepreneurship’. Acs (1992:38) sees small firms as agents of change by their entrepreneurial activities and identifies the importance of small firms to have four consequences: entrepreneurship, routes of innovation, industry dynamics and job generation.

Tengeh et al. (2011:362) concur with the argument of Chandra et al. (2001:12) that having a huge SMME sector forms the basis for job creation and poverty eradication which contribute to the fundamental indicators of economic development. According to them, this belief motivates many national governments to consciously put in place policies aimed at promoting the SMME sector. In spite of the developing condition of the South Africa’s SMMEs sector, their data indicate that the sector accounts for over 70% of the GDP and consist of over 80% of the total enterprises in the country. Carree and Thurik (2002:4), on the other hand, maintain that the concept of economic growth

is relevant at every level of the economy, while supporting entrepreneurial contribution to macro-economics.

The relationship between unemployment and entrepreneurship is an area of analytical concern in issues of economic growth and development. According to Carree and Thurik (2002:5), one strand holds that unemployment stimulates entrepreneurial activity; another holds that higher levels of entrepreneurship reduce unemployment. However, the implication of these strands on economic growth is inconclusive, regardless of other fundamental factors determining economic growth.

2.26 THE EFFECT OF ENTREPRENEURSHIP ON SMME GROWTH

In *The Theory of Economic Development by J*oseph Schumpeter (1934) we recognize the role of the entrepreneur as a prime cause of economic development, and we understand the concept of creative destruction whereby innovating entrepreneurs challenge established firms through new inventions. In relating entrepreneurship and SMME development, this study distinguishes the entrepreneur as to ascertain its position as a major character and determining factor in the SMME growth and development, as well as its impact on economic growth. Holcombe's (1998:46) assertion that entrepreneurship is "*the engine of economic growth"* suggests its importance in SMMEs development in South Africa. On the other hand, Wennekers and Thurik (1999:29) assert that 'Small firms are the vehicle in which entrepreneurship thrives'.

According to Carree and Thurik (2002:4), entrepreneurship as a behavioural characteristic of persons is an ill-defined, multidimensional concept; they maintain that the measurement of their impact on economic performance is complicated by the difficulties in defining and measuring the extent of entrepreneurial activities. They further state that linking entrepreneurship to economic growth means linking the individual level to aggregate levels. They also clarify the notion that entrepreneurship is not all about small businesses, but rather an outstanding means through which persons display their entrepreneurial ambitions. According to Welter (2005:5), whereas entrepreneurship can take many forms, it can as well be defined in many

ways. The sense is that a person must be careful to avoid the error of narrow conceptualization as the process is complex.

It seems impossible to advance a single definition of entrepreneurship, especially as most theoretical approaches yield operational difficulties, according to Karlsson, Friis, and Paulsson (2004:4), who distinguish between theoretical and operational definitions of entrepreneurship. According to them, theoretically, the definitions are wide, covering a number of entrepreneurial activities, whereas, operationally it covers a singular aspect of activities and these activities vary. At the very least the entrepreneur has been associated with enterprise start-ups of any kind of size, either, by setting up a new business or buying an existing one (self-employment). Entrepreneurship is *"at the heart of national advantage"* (Porter, 1990:125). Baumol (1993:198) gives an interesting description of entrepreneurship, as an invention and ideas into economically viable entities, whether or not, in the course of doing so they create or operate a firm.

Arguments as to the effect of entrepreneurship on economic growth and development cannot be disconnected from the entrepreneurial role in SMME development. According to the Global Entrepreneurship Monitor (GEM) Report (2006-2010), South Africa is found to lag behind in terms of new venture creation, when compared with other countries' entrepreneurial activities as captured in the GEM survey. Nevertheless, in the 2010 GEM Report, it was captured that "every person engaged in any behaviour related to new business creation, no matter how modest, is regarded as having an impact on the national level of entrepreneurship"; this was followed by a distinction between those who are motivated primarily by a lack of options for making a living (necessity entrepreneurship) and those who are starting a business to take advantage of an opportunity (opportunity entrepreneurship).

Definitions restricting entrepreneurship to small-firm creation is incomplete, and a disregard for large firms. Karlsson et al (2004:3) share the same view. They conclude that entrepreneurial activities range from creative destruction and innovation to dealing with uncertainty and spotting profit opportunities. This has to be attributed to firm start-ups, innovative and competitive behaviour. However, they found no empirical link between entrepreneurship and economic growth, as essentially its benefits are more

subjective. Wengenroth (1999:131) identifies the small business as a catalyst of industrial growth.

Entrepreneurial activities are regarded imperative in a given economy and conventionally carried out under enterprise settings. Key players in the SMMEs are the entrepreneurs. However, the importance of the entrepreneur in an economy cannot be underestimated. According to Acs and Audretsch (1990) the entrepreneur has been identified to positively affect economic growth in the following of ways:

a) By being innovative
b) By increasing competition
c) By introducing variations of existing products and services.

Surprisingly, many factors apart from entrepreneurship have been identified to influence economic growth according to Stel et al (2004:317). Some, they classified to be economic and others may be non-economic. Some other factors they considered to be climate, education, property rights, saving propensity, presence of seaports, etc.

Other evidence of non-entrepreneurial factors contributing to economic development abounds in communist economies. They find difficulties in concluding with an empirical measurement of entrepreneurship contribution to economic development as other factors of production. Comparatively, according to them the impact of entrepreneurial activities in developed economies and in developing countries are not homogeneous; in other words, they do not play similar growth-stimulating roles. Using a *Global Entrepreneurship Monitor*, GEM database for analysing the impact of Total Entrepreneurial Activity (TEA) rate on economic growth, they truly found there are some impact and that entrepreneurship matters, but that TEA is less favourable to poor countries than to rich countries.

2.27 THE EFFECT OF ENTREPRENEURIAL ENVIRONMENT ON SOUTH AFRICA'S ECONOMIC GROWTH

The environment is generally known to characterize the nature of most things within it. In the case of an enterprise, activities can be stimulated and supported by the

condition of its environment. According to the 2010 GEM Report, the concept of the Entrepreneurial Framework Conditions (EFC) is inclusive of underlying fundamental conditions necessary for fostering the functioning of the enterprise environment. The EFC, which is a relatively new model, encompasses nine fundamental conditions which have a significant impact on the enterprise; in order words; these conditions either foster or constrain the enterprise climate. The GEM report states the following motivating conditions:

a) The entrepreneurial finance
b) Entrepreneurial education
c) Entry regulations
d) Government policy
e) R&D transfer
f) Physical infrastructure
g) Government entrepreneurship programmes
h) Commercial and legal infrastructure
i) Culture and social norms.

These framework conditions, according to the 2010 GEM Report, influence individual's decisions to pursue entrepreneurial activities and are also dependent on the social, political and economic context in which they exist. The importance of these framework conditions may vary according to a country's level of economic development (Bosma et al., 2008:10).

In another survey that was included in the 2010 GEM report, when assessing the national conditions influencing entrepreneurial activity in South Africa, it was found that the following categories according to their mean scores form the entrepreneurial environment:

Table 2.4: National conditions influencing entrepreneurial activities in South Africa

Categories	Mean score
Access to physical infrastructure and services	3.03
Access to professional and commercial infrastructure	2.95
Internal market dynamics	2.85
Concrete government policies: entrepreneur: entrepreneurial priority and support	2.7
Cultural and social norms	2.5
Vocational, professional & tertiary-level entrepreneurship education	2.44
Internal market openness	2.49
Financial environment and support	2.48
Government policies: taxes bureaucracy	2.15
Government programmes	2.12
Research and development transaction	2.08
Primary and secondary level entrepreneurship education	1.75

(Source: 2010 GEM Report SA on the Assessment of the Entrepreneurial Environment)

However, the 2010 GEM Report SA specifies the following basic requirements which are the underlying fundamental conditions that must be present for a well-functioning enterprise environment:

a) Macro-economic stability
b) Institutions
c) Infrastructure
d) Health
e) Primary education.

All five are usually the focus of development efforts in factor-driven countries.

2.28 THE EFFECT OF ENTREPRENEURIAL ACTIVITY ON SOUTH AFRICA'S ECONOMY

The Total Entrepreneurial Activity (TEA), which is seemingly the most widely used measure of entrepreneurship or 'early stage entrepreneurial activity' index, synonymous with the *Global Entrepreneurship Monitor* (GEM), measures entrepreneurial activity by looking at the percentage of the active population, people between 25 and 64, who are entrepreneurs in any given country, prior to a new GEM framework in 2016.

Justo, Alberto and De Castro (2005) provide an alternative measure of entrepreneurial activity, which includes entrepreneurial social environment in various entrepreneurial propensities, contrary to classifying individuals as entrepreneurs or non-entrepreneurs as the GEM reports prior to 2010 provides. They based their investigation on two aspects:

a) Measuring the likelihood of entrepreneurial behaviour or entrepreneurial propensity, and
b) Using the social network theory approach.

They were very much concerned with an assessment of a country's relative propensity for entrepreneurship rather than which country has the highest rate of entrepreneurs, considering that entrepreneurs according to Davidson (2004:70) "are not a well-defined population but a hazy and moving target".

Justo et al. (2005:41) maintain that the TEA index should be qualified with a measure that captures a country's actual and future entrepreneurial potential. This is the same as the complexities in capturing irregular ventures. They further stress that "the TEA national index is captured as the proportion of respondents classified as nascent entrepreneurs in a representative national sample. Each individual in the sample is classified as either an entrepreneur or non-entrepreneur, based on his or her responses to the questions Q1 to Q3 in the GEM survey. According to the premise of their argument, this classification ignores the fact that individuals can show a varying propensity of degree of entrepreneurship.

Concluding their argument, Justo et al. (2005:51) maintain that "entrepreneurship activity is not a clear-cut reality that can be easily extrapolated, rather, entrepreneurship is a potential that people have in certain degree and that, combined with specific circumstances, can give birth to actual venture creation. Nevertheless, Bosma and Levie (2009:10) emphasize that other factors apart from economic development are qualities capable of determining entrepreneurship rates. According to them, factors such as attitudes and perceptions play an important role in creating entrepreneurial culture.

In line with the categories used in the *Global Competitiveness Report, 2010-2011*, taken into consideration, the level of GDP per capita and country's factor-driven extent in terms of share of exports of primary goods in total export, countries participating in GEM are classified according to the following Global Competiveness Report model:

a) Factor-driven economies (middle-to low-income)
   More preoccupied with basic requirements such as:
   - Institutions
   - Infrastructure
   - Macroeconomic stability
   - Health and primary education.

b) Efficiency-driven economies (middle-to low-income)
   More preoccupied with efficiency enhancer such as:
   - Higher education and training
   - Goods market efficiency
   - Labour market efficiency
   - Financial market sophistication
   - Technology readiness
   - Market size.

c) Innovation-driven economies (high income)
   More preoccupied with innovation and sophistication factors such as:
   - Business sophistication
   - Innovation.

South Africa falls in the category of the efficiency-driven economies alongside 24 other countries out of 57 national economies surveyed in the GEM 2010 Report. Entrepreneurship is been considered in line with this three economic development phases, Herrington et al. (2010:14). In the 2010 GEM Report, we see a modification in the GEM methodology, an improvement in the definition of entrepreneurship and the measure of entrepreneurship, according to the report, "with the primary objective of measuring entrepreneurship activity in a way that allows for meaningful cross-national as well as intra-country comparisons over time", Herrington et al. (2010:10).

2.29 THE EFFECT OF GROWTH CONSTRAINTS ON SOUTH AFRICA'S SMALL BUSINESSES

A number of constraint factors on SMME's growth and development have been identified. Some according to Hussain (2000:3), are basically economy-wide and sector-specific, which include:

a) *"Excessive state involvement in the economy which prevented indigenous entrepreneurs from gaining managerial experience in dynamic medium and large enterprises.*
b) *Monopolies and subsidies given to public enterprises, and rules and regulations which stifled entrepreneurship.*
c) *SMEs have been starved of capital and other inputs with credit directed to larger enterprises even when practical experience has shown that it is possible to lend profitably and effectively to MEs.*
d) *SMEs have scant access to foreign funds and foreign direct investment, reducing their ability to upgrade their technology and managerial know-how".*

All of these constraints, according to Hussain (2000:3), have been made worst by the negative consequences of liberalization and globalization on South African enterprises. According to a 2011 publication of the Education and Training Unit (ETU) on government development programmes and policies, common challenges facing SMMEs were identified. The government's national small business strategy were intended to overcome the following:

- Unfavourable legal environment
- Lack of access to markets and procurement
- Low skills level
- Lack of access to information
- Shortage of effective supportive institutions.

In an attempt to analytically identify which SME barriers are of main importance at different transition stages in 23 transition countries, in accordance with selected 35 previous studies on constraints facing SMEs in these countries, Welter (2005:13)

found four categories of constraints to SME development and growth with the aid of The European Bank for Reconstruction and Development (EBRD) indicators, namely:

- Formal (Taxes, Policy instability/uncertainty, Legal regulations)
- Informal (Consistent formal factors)
- Economic (Financing: access and cost: production factors)
- Others (All other factors not captured above inhibiting growth into new markets).

According to him, all four categories manifest in different stages in those transition countries, three stages were identified, following the EBRD transition indicator, namely:

Stage 1 - comprising the desire or pressure to reform;

Stage 2 - comprising formal institutional reform; and

Stage 3 - comprising the harmonization of formal and informal institutions.

This transition indicator focuses on the economic and political transition of selected economies. With respect to the economic factor identified above, according to Welter (2005:13), Acs and Karlsson (2002) emphasize that all other factors present only a limited part of an overall economic environment of the enterprise. They maintained that influences on entrepreneurial progress must also include the traditional supply and demand condition, the degree of various market competitions, the state of the infrastructure, the supply of labour and skill of the labour force, the general entrepreneurial climate.

SMMEs in South Africa as well as a number of other sub-Saharan African economies exist in the environment of risks and survival challenges, which characterize their business strategy and life cycles. Considering the circumstances surrounding their establishment, many of them face stiffer regulatory squeezes from statutory institutions in terms of financial cost and time or other form of administrative burden of compliance. All of this has forced many to resort to diversification of various kinds, moving from one existing province, economic sector, or business segment to another, all in a bid to find for themselves a comfortable fit in society.

To help put some “flesh on the bones” of this analysis, the World Bank’s *Doing Business in (2004),* finds that the importance of a comprehensive regulatory impact study that details the costs to business of the legislation and regulations that govern it cannot be overstated. However, in its report according to Small Business Project, 2003, South Africa, going by international standards is not doing badly, but for the goal of boosting investment and job creation needs more pressure for streamlining its regulatory environment further.

As has been pointed out above, regarding entrepreneurship in relation to the SMME, the research agrees with findings based on evidence in Mead and Liedholm (1998:61) that entrepreneurs are not in short supply in most African countries, rather they face inhibition in migrating from small to larger enterprise categories. The worst transition, as some findings show, rests in Southern Africa.

Rogerson (2000:692) in a research study, using a longitudinal survey of the Witwatersrand clothing enterprises to examine key determinants of successful SME development in post-apartheid South Africa, focused on examining the degree to which education and training influence SMME success. In corroboration with the research of Levy et al (1994:11) in four countries of Asia and Latin America, Rogerson (2000:711) discovered that education and training are positive influences on the emergence of successful SMEs. Rogerson (2000:712) cautioned that technical skills built up by entrepreneurs learning on the job, in most instances, have more potency than formal education and training. Other finding points to the motive for enterprise establishment, whether they are born of demand-pull rather than supply-push considerations. Another finding has a strong relationship with geographical factors, such as locating in an incubator zone or a crowded inner-city, which gives an enterprise the benefit of external economics and the benefit of enterprise cluster points to success.

In a publication by Business Linkages, Jenkins et al (2007:28) distilled the following challenges facing South Africa’s SMMEs as reflected in the National Business Initiative South Africa (NBI):

a. SMMEs in South Africa face a considerable amount of regulatory red tape.

b. Among large firms, current attention is on compliance with BEE requirements rather than strategic investment in SMEs.
c. Many companies are forging ahead independently.

The NBI recognizes that the South Africa's economy has long been dominated by a small number of large firms. According to Jenkins et al. (2007:28), the NBI confirms that a stiff regulatory environment, unfavourable procurement and other business practices have remained key obstacles to SMMEs. Another area of interest is the fact that SMMEs face difficulties in competing for tenders with large firms. According to their suggestions, tender administration must make provisions for a separated tender allocation specifically to accommodate the interest of SMMEs both in the private and public institutions. The SMME linkages with large enterprises must be fostered in such a manner that it can make commercial sense.

Other research conducted along the line of SMME constraints points to an endless list of reasons amplifying SMMEs access to credit (new SMMEs) from commercial banks and trade creditors. Fatoki and Smit's (2011:1415) finding in this respect indicate that there are certain factors in the business environment that constrain credit access to new SMMEs. They agreed that access to debt finance is very limited for new SMMEs, especially in developing countries. The striking revelation according to them is that FinMark Trust (2006) discloses that 2% of new SMMEs in South Africa are able to secure bank loans. In another report, according to Fatoki and Smit (2011:1414), it was noted that 75% of applications for bank credit by new SMMEs in South Africa is rejected and trade credit by new SMMEs in South Africa is about 0.2%. Their finding corroborated with those of Stiglitz and Weiss (1981:393-410), suggesting limitations due to the challenges of information asymmetry, moral hazard and adverse selection, which are factors in the business environments.

The above fact finds support from the Small Business Report as flagged in the Education and Training Unit (ETU) 2011 Publication that lack of access to finance continues to be the major problem faced by people who want to start their own businesses. Scheers (2010) came up with different dimensions of SMME challenges. In his research, he focused on *SMMEs marketing skills challenges in South Africa*

whereby he identified a lack of marketing skills and correlated it with success rates of SMMEs in South Africa as experienced by SMME owners.

2.30 DYNAMIC FACTORS MILITATING AGAINST SMME SURVIVAL

Conversely, as SMME challenges are basically major factors external to the enterprises, some factors responsible for SMME failures are internal and controllable. According to Pasanen (2005:93) “in many cases the root cause of failure can be traced to problems in management and to the lack of strategic management in particular”. Essentially, finding a suitable definition for enterprise failure is required in this study to enable our yardstick.

According to Pasanen (2005:94), a variety of concepts have mingled with different definitions such as: bankruptcy, insolvency, liquidation, death, deregistering, discontinuance, ceasing to trade, closure, and exit (Welton, 2005:4), having different meanings in different countries. In his study, he however chose rather to define a failed firm as one which has gone into liquidation, i.e. it has ended its business and left behind unpaid creditors, and so the empirical cases in his study are unequivocal failure. He maintained that firms go out of business but, in some cases, not because of failures. He distinguished two kinds of failure situations: optional and non-optional. He emphasized the scenario of successful exit, which is relatively profitable.

Many factors militating against SMME’s survival have been inconsistent among previous studies, so are they categorized in many ways. Boyle and Desai (1991) have four categories based on a matrix of two dimensions: on the one hand, environment, consisting of internal vs. external, on the other hand, nature of response, consisting of administrative vs. strategic. Many other finding relating to enterprise failure factors exist. Nevertheless, difficulties exist as to the study of SMME failure factors which may include: sampling difficulties, confidentiality difficulties, difficulties to understand and articulate failure, and problem multidimensional complexities (Welton, 2005:95; Bruno, 1987).

Pananen (2005:103) observes that SMMEs are not homogenous and that failure factors are multiple, though, firms may be grouped according to common

characteristics. His findings are therefore associated with firms having common failure factors, which are diagrammatically ranked as follows:

- *Lack of prior experience as an entrepreneur*
- *Lack of marketing skills*
- *Lack of prior managerial experience*
- *Parents who were not entrepreneurs*
- *A firm managed by one individual*
- *Lack of planning*
- *A firm founded by one individual*
- *No use of business advisers*
- *Dependence on one or a few customers*
- *Small amount of products/services*
- *Unfavourable macroeconomic conditions*
- *Inadequate financing*

Figure 2.16**:** Common failure factors of SMMEs (based on Pananen, 2005)

Lack of prior experience as an entrepreneur ranked over 80% among common factors associated with SME's failure and inadequate financing ranked the least influential factor.

On enterprise survival according to McPherson (1996:273) and Mead and Liedholm (1998:61), no one specific reason was found to be responsible for enterprise survival; rather, the unique characteristics of enterprises studied were found to have influenced survival, as all in the sample bear different unique features. These characteristics are as follows:

a) Types of industry and economic sector an enterprise belongs to; here, one revelation was that manufacturing concerns and services sector were more promising in terms of corporate life cycle.

b) Increase in the number of employees was also found to be associated with enterprise growth; the issue in this factor is the ability to isolate whether growth

is as a result of human capital injection or human capital injection is as a result of growth.

c) Entrepreneur's gender issues; this argument was based on goal, time and scope, and the fact that women are more domestic, placing women in some respect at more disadvantaged position than men.

d) Enterprise location was another factor found to have an influence on enterprise survival; enterprises found to be located at home or residential areas were found to suffer growth more than those located at the Central Business Districts, (CBDs).

Schmitz (1990, 1992) raises the issue of enterprise cluster. In his definition, he points out two types: spatial or geographical cluster and a sectorial cluster (Schmitz, 1992:66) all of which have unique benefits for the enterprise and contribute to enterprise survival. However, the research was silent as to the cluster most suitable to survival.

2.31 A REVIEW OF SOUTH AFRICA'S SMALL BUSINESS DEVELOPMENT

This review of literature will be incomplete without specifically addressing the SMMEs' trends and development with regards to issues of life cycle and business diversification in the current South African industrial environment. According to Goss (1991:1), the SMME concept gained academic prominence only fairly recently. It originally metamorphosed from the sole proprietorship, through Small and Medium-size Enterprises (SMMEs). He traced back the origin of small-business research to the Bolton Report in the UK, published in 1971, which became a seed in the minds of academics for research into the field of Small-Business. Thereafter, governments in the UK and USA, according to him "proved a breeding ground for the idea that the health of small business is a key indicator of the economic and political health of a nation" (Goss, 1991.2). According to Berisha and Pula (2015:18), the Bolton Report suggests two approaches to the definition: quantitative and qualitative.

According to Berisha and Pula (2015:18) there is a lack of universality in substantiating the definition of small businesses and alignment in the criteria applied. We find no universally acceptable definition of SMME, given that the economies of countries differ and an enterprise regarded small size by definition in a given country is certainly regarded micro- or medium-size elsewhere. Amongst various definitions of the concept, we adopt our definition of Small, Micro and Medium-sized Enterprises (SMMEs) conceptually from the DTI as contained in the Small Business Act 102 of 1996 “as a business entity employing a maximum of 100 employees. In the case of enterprises in the mining, electricity and manufacturing sectors, the threshold is 200 employees”.

Variation exists as to what is the threshold of annual turnover for qualifying and categorizing SMMEs. This study adopts two perspectives, the original one of the South Africa’s Department of Trade and Industry, DTI, R250 million and below turnover per annum and another one of Black Economic Empowerment (B-BEE) Code of Good Practice, which classifies SMMEs as enterprises with a turnover of R35 million per annum or less. This definition is country-specific, as enterprises considered small, micro and medium-size in one national economy is unlikely to be the same in another and the characteristics shared in most cases vary due to apparent different contrasting conditions of different economic sectors.

Another classification of the SMMEs according to the perspective of the Education and Training Unit (ETU), an organization for democracy and development, can be made on the basis of *established formal SMMEs* (mainly white and some Indian ownership) in predominantly urban settings and emerging SMMEs economy (mainly African and Colored) situated in townships, informal settlements and rural areas, which lack institutional recognition, extending to support.

The SMME has been identified as the strength of the South African economy, even though not so well developed. According to a survey report by the Edinburg Group (2014), the estimated 91% of the formal business entities in South Africa that are SMEs contribute 52-57% to GDP. The third quarter report of Stats SA (2016:1) shows that the unemployment rate averages at 27.1%. SMEs provide employment to about 60% of the labour force. Interestingly, finding a relationship between developing

countries and developing SMME economies will obvious close gaps, however, it does seems the growth level of the SMME economy has a far reaching implication on the economic situation of developing countries, as the role of SMMEs in creating wealth and employment, promoting economic growth and development cannot be overemphasized.

Prior to the South Africa's democratic dispensation in 1994, the SMME economy was seemingly underdeveloped and characterized by a system which never encouraged the majority of the population to be engaged in enterprise activities. This structural picture motivated the initiation of the "Small Business Act 102 of 1996" along the direction of creating a platform for SMEs in terms of: (1) advocacy, and (2) support institutions for SMMEs' access to finance and advice. Nagel et al. (2008:37) assert that small business development should be incorporated in all reconstruction and development initiatives as an economic empowerment panacea for the impoverished majority of the people. This opinion is in line with a government programme that supports the view that small business development goes hand in hand with reconstruction and development. The Small Business Act 102 distinguished five sizes of SMMEs, namely, the Survivalist, Small, Micro and Medium size enterprises by which we categorize SMMEs.

SMMEs are ambitious to progress accordingly onto becoming very large companies. Hussain (2000) in the Economic Research Papers of the African Development Bank attempts to look at this progression from MEs to SMEs and from SMEs to large enterprises. He considered the modalities and the mechanism through which SMEs could forge horizontal links between themselves and vertical linkages with larger manufacturing and services industries. He addressed the importance of linkages between SMMEs and large industries for increased market and trade. He maintains that the success of the progression depends on the strength of this linkage. In support of collective efficiency, he provides evidence that forming alliances, clustering and networking help small firms to compete, grow and co-operate with larger firms that is capable of overcoming the constraints plaguing SMMEs in Africa.

SMMEs in South Africa are now receiving more attention than ever before, while recognizing their role in the new economy as a driver in achieving the objectives of

economic growth through competiveness, employment generation and income redistribution, following suit with well-to-do economies, among which is China which, is considered to have a well-developed SME sector.

2.32 SUMMARY

This review attempts to consider entrepreneurial diversification by recognizing how indispensable it is in most cases. This work equally attempted to offer solutions as to how to mitigate negative consequences of untimely diversifying at any stage of the SMME life cycle, for the interest of South Africa's agricultural economy, which also calls for policy decision makers, government and corporate entities to acquire like understanding.

Government can intervene through policies aimed at protecting developing SMMEs from inclement business atmosphere; first, they must have knowledge of the life cycle stages attributable of different industries and domestic products, using an acceptable growth model. As indicated earlier in this chapter, policies in this direction can be used as tools for SMMEs' life cycle management and for guarding enterprises to avoid going through the extent of terminal stages of their life cycle.

Most product-market missions can be well executed at the early stages of the life cycle, likewise those of industries. The ICT industrial sector is a case in point: the government policy development in this industry since its emergence is highly resounding which is evident on its performance amongst other industrial sectors, but more can be achieved as well, if this knowledge is acquired and disseminated for the best interest of the SMMEs.

SECTION D: DIVERSIFICATION STRATEGY FOR SMMES SUSTAINABILITY

2.33 INTRODUCTION

This section of the chapter examines the concept of diversification as a strategic intervention for business sustainability. It aims to link diversification attempt and enterprise performance with a view to addressing sustainability challenges facing pig

farming SMMEs and the livestock industry in general. It incorporates enterprise life cycle as the continuum along which decision for diversification is taken, and on the other hand, defines the relationship between diversification, performance and sustainability of emerging SMMEs.

2.34 THEORETICAL PERSPECTIVES OF SMMES DIVERSIFICATION

The subject of diversification has been traced to the field of organizational economics in relation to strategy. Coase (1937), in his paper, remarkably examined diversification in relationship with key historic term: "costs of using the price mechanism", discussing *transaction costs* therein, a construct made popular by Williamson (1979). Klein and Lien (2009:289) followed suit with Coase's (1937) ideological construct in their statement that *"Coase recognizes the transaction-cost advantages of internal organization are not unlimited, and firms have a finite 'Optimum' size and shape"*. Coase's work on "The Nature of the Firm" raised fundamental questions about "the firm". Interestingly, Klein and Lien (2009:290) further consolidated on Coase (1937) in extending the literature in organizational economics, strategy, and corporate finance on diversification with questions as to the determinants of the firm optimum boundary across industry and how firm boundary decision influence the structure of industry. They examined the transaction cost economics (TCE) which determines the firm's choice to diversify rather than contract out any valuable assets, while identifying far-reaching implications of TCE on diversification decisions.

As a strategic choice, it seems answers and solutions come with diversification decision, so that it becomes a relief for intolerable age-long challenges facing an enterprise. Yet, research finds far-reaching implications on both sides of the coin. The reality is that: to the extent that diversification becomes indispensable, it might as well not be all the answers to challenges of growth. Diversification is natural and our question is not "*why*" as we seek to appreciate it. Relying on Ansoff (1957), diversification is considered the riskiest of which requires the most careful investigation amongst four of his proposed product-market strategies as contained in the *Ansoff matrix*. He attributes it to the notion of newness in terms of skills, techniques, facilities, and most importantly, new markets and new products from external rather than the

internal organization perspective. In most instances, the reference point will remain SMMEs.

For a hypothetical firm, it seems less critical when diversification seeks to enhance profitability than when intended for enterprise survival. Ansoff (1957:114) agrees that in the face of a dearth of opportunity for growth diversification, it may become an option in a product-market/mission situation. But first, a test is required, according to him: “the attractiveness test, the cost-of-entry test and the better-off-test” in order to determine the probability of success. Nevertheless, profitability and survival are complementarily important, given that our unique SMME industrial environment provides that achieving any one of it is better than none, which supports the notion of achieving enterprise health due to diversification along SMME life cycle continuum.

2.35 ENTERPRISE DIVERSIFICATION

The above theoretical perspectives provide some insights leading to a conceptual definition of diversification. In this study, diversification strategy is considered amongst SMME pig farmers as an alternative growth strategy for business sustainability. For the purpose of the study population and its demographics, associations between diversification and performance and sustainability of SMMEs in the livestock business are investigated. In Hyland (2003:23), this concept is examined by using a sample of a set of firms that starts out with a single segment and subsequently diversifies by multiplying into two or more segments. Seife et al (2012:105) consider it as decision to venture into a new line of business in a systematic process consisting of three main steps: the initial identification of investment opportunities, assessment of market attractiveness and elimination of unattractive opportunities, and evaluation of corporate competencies and capabilities and key success factors for each of the new business. Here we deduce that segment multiplication attributes to diversification. Liu et al (2016:1) share the same perspective with Harper and Viguerie (2002:1) in which they examined the value accruable to firm owing to diversification. According to Harper and Viguerie (2002:5), they found in their research sample that some attempts were considered as moderately diversified while other as diversified companies. Moderately diversified, they classified as those with at least 67% of revenue from two segments,

and diversified companies as those with less than 67% of revenue from two business segments.

Interestingly, Harper and Viguerie (2002:1) consider sources of percentage of revenue as a measure of fitness. The idea of excluding multinational conglomerates was also expressed in the study done by Thomas and Loraine (2004) who hypothesized that the multinational performance relationship has a time dimension relative to cost. Since our research is nationally bound, we consider this set of opinions in our definition of diversifiers. Furthermore, we might as well justify these exclusions on grounds that the gains of multinationality for SMMEs that are multinational in operation are more likely to ease domestic challenges comparable to non-multinational SMMEs.

The quest for opportunities for resource application by SMMEs in a dynamic economy, for the most part, stands as a strong motive for firms to look to diversification as a strategic option to maintain relevance in a given business environment. Since the 1950s researchers have taken keen interest in issues as to whether or not diversification increases or decreases a firm's value. This ongoing argument has reached an extent where it remains anchored on a number of dependent variables. Matsusaka (2001:409) and Arikan and Stulz (2016:139) see diversification as a dynamic value-maximizing strategy revolving around the notion of organizational capabilities even if specialization is considered generally more efficient. Their work agree with some others that diversified firms trade at a discount comparable to single-segment firms, taking also into consideration the agency theory of diversification, such as positive returns due to mere diversification announcement.

The freedom of choice of allocating firm's resources to a potentially profitable sector of the economy with little or no regulatory constraint is seemingly a strong motive for free entry and exit of firms geographically and industrially. This is more especially in South Africa where firms move from one geographical area to another in search of opportunities to allocate available resources. Perhaps, from one economic sector to another thereby adding one or more business segment(s) to existing ones.

This argument considers organizational resource capabilities (the combined marketing, distribution, and development skills of top and middle management) as the

engines of corporate evolution according to Chandler (1990, in Matsusaka 2001:414), which cannot easily be dissipated when an existing business faces a downturn; rather, it becomes more rewarding to redeploy them to new businesses as they are the engine of corporate evolution. Matsusaka (2001:410); Teece (2007:1321) and Kaul and Wu (2016:1220) are of the same view over the issue of a matching/searching process whereby management may search for better matches to ensure the survival of the firm entrusted in it.

2.36 DIMENSIONS OF SMME BUSINESS DIVERSIFICATION

Having spelt out our area of concern for contextualizing domestic diversification, from the foregoing, the researcher considers possible diversification dimensions domestically opened to SMMEs in our study environment, research such as those of Mikhail and Shawky (1979), Brewer (1981), Fatemi (1984), Michel and Shaked (1986), and others bring to light, *inter alia,* the geographic and the industrial dimension of diversification, thereby giving the researcher a leeway to concretize the subject of investigation. In an extended paradigm, Ehling and Ramos (2005:8), in a working paper series, looked at constraints matter regarding geographic versus industry diversification, to address whether geographic diversification provides benefits over industry diversification, which yielded results relatively favourable to geographic diversification. But as Bodnar et al. (1997:7) caution: *"this possibility implies that any attempt to measure the value implication of geographic diversification needs to take into account industrial diversification".*

Therefore, following this caution, this study distinguishes opinion on both dimensions, holding other types of diversification constant and associating them around geographic and industrial. Both dimensions are options opened to SMMEs in addressing growth and sustainability challenges facing them.

2.36.1 The implications of geographic dimension of diversification on SMMEs

Most studies done on geographic dimension aim at firm value impact due to movement of activities across multinational boundaries, in the context of this study it is confined domestically; municipally or provincially, i.e. relocating business operational activities

across municipal or provincial boundaries with same or new skills, techniques, facilities, and most importantly, according to Ansoff (1958:114), a departure from the present product line and the present market structure.

This dimension received attention from Cheng and Roulac (2007:29), where they measured the effectiveness of geographic diversification across the U.S. metropolitan areas, in the real estate sector, in an attempt to determine degree of portfolio risk of expanding into more cities in relation to portfolio strategies, against the choice of remaining geographically concentrated. They emphasized the issue of marginal risk reduction, so that as the number of cities in the portfolio increases, the mean portfolio risks decline. They noticed the influence of size of cities on results of their finding when addressing, *inter alia*, questions as to how many cities must investors spread their capital to achieve good geographic diversification? What will be the maximum portfolio risk reduction if geographic diversification is limited to only the largest cities in the U.S.? In their results, as they found: geographic diversification effectiveness is comparably insignificant, because the marginal risk reduction diminishes automatically with time, thereby, supporting the choice of staying geographically concentrated as a better portfolio strategy. They also found that different properties in the portfolio result in different effectiveness in geographic diversification.

2.36.2 The implications of industrial dimension of diversification on SMMEs

Conglomerating along domestic line has received considerable research attention. This study aims to associate its impact on corporate life cycle, restricting it to the SMMEs which domestically extend operational activities across different lines of business, but with the aforementioned caution by Bodnar et al. (1997:7). This dimension has certain geographic influences that need to be taken into account when analysing pros and cons associated with the pooling of risks, firm value, size and economics of scope/scale due to industrial diversification.

Benefits abound to SMMEs that are imperfectly correlated. Bodnar et al. (1997:7) maintain that “they will have more stable cash flows and thus obtain better external financing deals” for the SMMEs, this might appear promising for good financial health. Emmons et al (2001:25) in a working paper examined *“the importance of scale*

economics and geographic diversification in community bank merger" and found that diversification within economic market area is better than across economic market area and much more when it is closest.

2.37 CONSTRAINT EFFECTS OF SMALL BUSINESS DIVERSIFICATION

SMMEs in their respective industrial environments are confronted with issues which challenge diversification objectives. On the one hand, these are constraints which could be classified to range from enterprise, market to industry specific; on the other hand, there could be instances of geographic constraints factors - all of which may become worst if not quickly identified and proper solutions not applied to overcome them. Singh and Mahmood (2009:1) identify a number of challenges of diversification when analysing internal and market problems in SMMEs in Singapore. According to them succeeding through diversification, SMMEs must ensure that they are prepared to develop different products and services in order to guarantee customer satisfaction alongside required competencies. This becomes more challenging in the face of attempting to outperform multiple competitors. They further stress that this explains why SMMEs which diversify, fail - whereby they have to deal with multiple issues such as:

a) Multiple strategies
b) Multiple sets of competencies
c) Multiple sets of customers
d) Multiple sets of competitors
e) Multiple environments.

Burns (2001) in Welter (2005:6) identify the following as core SMME sector weaknesses in the transition countries under study:

1. Limited access to finance,
2. A low degree of professionalism,
3. Difficulties in recruiting qualified personnel,
4. Dependency on clients and suppliers, and
5. The absence of economics of scale.

All five weaknesses, according to Welter (2005:6), could provide necessary background when properly understood to develop policies for SME support.

2.38 THEORETICAL PERSPECTIVES OF SMALL BUSINESS LIFE CYCLE

Peter Drucker (1954), in his book “The Practice of Management” wrote that the purpose of business is to “create customers”, not profits. The purpose of management is not only to keep the business alive, but to maximize the gains of emerging opportunities in each stage of a business life cycle.

One of the striking revelations capable of motivating research into SMMEs health and life cycle is the work of Bowler, Deawood and Page (2006), who found that 40% of new business ventures collapse in the first year of operation; 60% in their second year; and 90% in their first ten years of establishment. One wonders what becomes of the future going by this terrible trend if concerted effort is not made by all stakeholders to turn this trend around. Furthermore, their work finds that over 70% of all South Africans are employed in the SMME sector, indicating that the life cycle of the SMMEs in South Africa has a corresponding effect on the labour market.

Causes of SMMEs failure or life cycle dynamics are innumerable and inconsistent, according to research. It is rather worthy to explore constraining factors associated with diversification and examine its dynamic impact on enterprise life cycle, recalling critical questions as to situations in which diversification is most favourable and acceptable. Furthermore, identifying and predicting the effect of diversification on SMMEs life cycle in the South Africa’s industrial environment.

Research and literature exists in support of the proposed investigation, albeit, locally insufficient in the area of SMMEs. The outcome of this work is intended to enhance SMMEs in South Africa that are aiming to sustain a favourable life cycle by way of understanding strategies to overcome challenges and implication of diversification. It will provide attributes of different cycle stages at any given dispensation in the South African context, and the implementation of a consistent diversification strategy. Furthermore, to understand in what stages of a corporate life cycle diversification

becomes a viable option and more likely to create a sustainable premium relative to performance.

According to the Encyclopaedia of Small Business, the trends in organizational life cycle study find its root in the work of Mason Haire's (1959): *Modern Organizational Theory,* it used a biological model for organizational growth, whereby organizations according to him follow a "regular sequence of growth and development". The model became well established by the 1970s and 1980s with its unique premise and prescription, recognizing that in every development stage an organization finds itself, there exists external opportunities and threats. Greiner (1972:398) in his explanation of organizational growth model sees it as a "predetermined series of evolution and revolution" whereby two phases are involved. The one creates another, until the emergence of crisis that puts enterprise management to a test and enterprise future is determined by the ability of management to handle this crisis.

The above concept also finds support in the work of Baird and Meshoulam (1988:116), as exposed in the Academy of Management (1988) that "movement along life cycle stages is due to finding a balance in the totality of business environment" by way of responding according to the influences of the environment, positively or negatively. Adizes (1989) in his model on corporate life cycle, maintains that transition from one life cycle stage to the next depends on how poor or well management is able to handle the unique challenge provided by each successive stage. Management ability to overcome crisis in each stage and create new market opportunities distinguishes between a successful and an unsuccessful business.

2.39 THE DYNAMICS OF SMALL BUSINESS LIFE CYCLE

Searching for views on factors responsible for fluctuation or gyration in the corporate life cycle continuum points to dynamics in the enterprise external environment. Precisely, some uncontrollable impact due to unsteadiness in the macroeconomic environment factors are considered, indicating that enterprise macro-environment issues do manifest internally and make economic sense (Chow & Choy, 2009:20). This study viewed inconsistency in the measurement of enterprise life cycle among prior research, leaving us yet without agreement on the number of life cycle stages or

a more acceptable model. SMMEs react differently to multidimensional external shocks or disturbance. This research finds a challenge in extracting a set of consistent external variables as well as economic indicators driving fluctuation or shocks in the SMME life cycle.

The number of these variables in consideration remains endless; even though, this section intends to seek for a means of aggregating all identifiable variables. The fact about the endless nature of these variables is supported by Chow and Choy (2009:19) in their methodology of analysing and forecasting business cycles using a dynamic factor model. Equally supported are the work of Leung and Seun (2001) in their methodology of finding the characteristics of business cycles by examining the co-movement of various macroeconomic variables, and Choy (2009) in his methodology of examining how shocks originating from abroad are propagated to the broader economy by extracting the cynical components in economic variables.

In the context of national economies, however, with respect to Hong Kong and Singapore, Chow and Choy (2009:20), Leung and Suen (2001:41) and Choy (2009:23) agree on the possibility of external factors contributing significantly to enterprise internal gyration. In order to avoid the use of a limited number of variables to represent all the shocks to an economy and running into the degree of freedom problem, they rather proffer the dynamic factor models which permit the amalgamation of many variables as well as intermittent intrusions from domestics. This gives this study the leeway into the possibility of incorporating all possible external variables causing fluctuation or gyration in the SMMEs life cycle.

In another dimension, with respect to external variables influencing the enterprise, Cetorelli (2003:135), presents a theoretical framework that shows that the effect of banking market structure and competition may have heterogeneous effects across firms within an industrial sector, which may be different for start-ups and incumbents and may have an impact on the entire life cycle dynamics of industrial sectors. His work exposes a mechanism through which bank competition affects economic activity in nonfinancial industrial sectors, using a data set comprising multiple variables in the US.

Based on the above theoretical framework, caution must be applied when considering the stylized fact regarding the role of the banking industry on venture creation and destruction especially as it concerns South Africa's industrial environment and the stylized fact that, on average, start-ups have the highest rate of job creation compared to mature establishments.

2.40 EVALUATING SMALL BUSINESS LIFE CYCLE STAGES

This study will view a number of measures of corporate life cycle stages, even though it may be unlikely to find any consensus on the definition of a firm's life cycle stages or a more acceptable model. Nevertheless, according to Wang (2005:3), the definition of life cycle stages by Hanks et al (1993:Internet) as a "unique configuration of variables related to organization context and structure" is considered helpful; yet, even the model of identifying life cycle stages is without a consensus among researchers (Yan, 2009:1). There are two-stage, three-stage, four-stage, five-stage, running through ten-stage life cycle models as proposed by Chandler (1962); Greiner (1972); Miller and Friesen (1982), (1984); Galbraith (1982); Churchill (1993); Quinn and Cameron (1983); Smith, et al (1985); Kazanjian (1988); Adizes (1989), (2004); Dodge and Robbins (1992); Hanks, et al (1993); Beverland and Lockshin (2001); Lester, et al (2003).

2.41 DIVERSIFICATION PREMIUM ALONG FIRM'S LIFE CYCLE STAGES

By looking at value judgment relative to diversification and corporate life cycle, for the purpose of this research, it will be important to adopt an operational standard of measure of performance with which to determine a firm's value due to diversification. In terms of geographic diversification, which by extension, is almost analogous to multinationality and its performance relationship in the short- or long-run. Thomas and Loraine (2004:Internet), in their research methodology on multinationality-performance relationship, looked at a principal component factor analysis which showed that firm performance leans on two dimensions, the first dimension they call short-run financial performance (return on assets, return on equity, return on sales, and earnings per share) and the second, long-run expected market performance (excess market value and average market value). This methodology was considered

useful in measuring post-diversification effects, which, according to them are time dependent.

Furthermore, on firm's value, in respect of pre- and post-diversification along the life cycle continuum, it will be out of place to disregard the application of Tobin's *q,* which explains the ratio of the market value of firm's assets (as measured by the market value of its outstanding stock and debt) to the replacement cost of the firm's assets (Tobin, 1969) taking into cognizance its criticisms as well.

Considering the above analysis, Nazarova (2015:173), in a study on "Corporate Diversification Effect on Firm", while examining the case of Unilever Group found that diversification does not have destructive effects on the firm's value; a finding which tends to agree with other findings in research such as Billet and Mauer (2000), Campa and Kedia (1999), Chevalier (1999), Graham, Lemmon and Wolf (2002), and Hyland and Diltz (2002) that empirical evidence abound to findings that diversification might not be the cause of firm's value destruction (discount).

Furthermore, in the same work, by some degree, he disputes papers such as Berger and Ofek (1995:60), Lang and Stulz (1994:1251), and Servaes (1996:1201) that find that U.S. diversified firms trade at a discount to specialized firms, with market valuation multiples which are comparably lower. Rather, Hyland (2003:23) however, concludes that there exists slight evidence that diversification is associated with an initial decline in firm value, but that decline does not persist in the long-run. He assumes factors other than diversification itself might be equally responsible for discount or premium.

Erdorf et al. (2012:22) corroborate with the line of thought of Santalo and Becerra (2005:2) who argue conceptually and show empirically that the effect of diversification on performance is not homogeneous across industries as previously assumed. They amplify this argument by facts that some industry characteristics may be more favourable for the relative performance of diversified firms than non-diversified firms, or vice versa. The variation in the effect of diversification on performance according to them, depends on the industries included in samples and their respective unique competitive advantages when competing in a given industry or set of industries. They maintain therefore, that no relationship (either positive, negative, or even quadratic)

should be expected between diversification and performance across all industries, as existing findings show, but rather contingent on the industries considered.

The above appear more descriptive than predictive, because the task *herein* as intended is to understand the unique model to guide the timing of decisions in respect of actions towards diversification, given that remedial measures have spiral effect on firm's value, in other words, this study will seek to find a given stage in SMMEs life cycle that is optimal for diversification to create a sustainable value premium relative to performance and consistent with the South Africa's industrial environment.

2.42 SUMMARY

This chapter presents a review of related literature on business models for sustainable SMME pig farming in four categorical sections addressing key objectives of the study. Business models and factors contributing to organisational sustainability were carefully considered. The conceptual framework of the study was developed in order to support in guiding other aspects of the literature. The review of contemporary business management models for SMME pig farming provided a number of business models. The role of business models in agribusiness was considered, with respect to livestock farming enterprises in South Africa and enterprise value chain. Literature bordering on the agricultural background of the Free State was considered in Section B. Government institutional support measures to pig farming SMMEs were considered in the literature. This was for the purpose of getting a better understanding of the Agricultural policy development, policy implication for sustainability and implementation strategy in South Africa as well as perspectives on South Africa's livestock production. In Section C, the concept of business model typology was reviewed, wherein a definition of business model typology and its attributes was obtained and gave the leeway in developing the Cooperative Commonage Model for SMME pig farming business. The concept of diversification amongst pig farming SMMEs was reviewed alongside life cycle theory as they relate SMME businesses, with particular reference to commonages and support system in the Central Free State Province.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

In Chapter 1, the research questions and objectives were outlined, the methods adopted in conducting this research were further highlighted, which may be conceived of in terms of an interpretative framework. In the course of the chapter, the overriding philosophical assumptions (Creswell 2014:5) in the pursuit of a set of goals were conveyed. It was indicated that the epistemological and ontological root of this study is fairly in-between (realistic) i.e. pragmatic (McCaslin, 2008:674), in other words, sharing positions from both sides of our philosophical assumption, in respect of accommodating and reconciling different perspectives through a pluralistic means.

This chapter sets out the process for applying the research methodology, and the above statement forms the basis of the following rationale for the research methodology that was ultimately chosen:

- expound on the research philosophy
- demonstrate the chosen research instruments, and
- execute the research strategies.

3.2 KEY VARIABLES IN THE STUDY

A number of measurable variables are of interest to the study. These variables characterize the enterprise system of operation and its operating environment with respect to the research study. In table 3.1, they are presented with their corresponding survey questions and statistical applications. The reasons for identifying these key variables are that (Korb, 2002):

- They were the major terms used when searching for research articles for the Review of Related Literature.
- They provided focus to the Methodology.
- They are what the research instruments intend to measure or manipulate for the research study to be valid.
- They are the terms to be operationally defined. (http://korbedpsych.com/R02Varibles.html)

Table 3.1: Key variables of the study objectives

No.	Key variables
1	Business failure syndrome
2	Marketing strategies
3	Size of operation
4	Diversification
5	Indebtedness
6	Marketing strategies
7	Business models
8	Performance
9	Sustainability
10	Indebtedness

3.3 RESEARCH DESIGN

A research design is a functional plan of the entire strategy that coherently and logically links together the different components of the study to achieve the research outcome as well as addressing the research problem. This design involved an integration of both qualitative and quantitative approaches.

3.3.1 The research methodology and methods

The flow chart presented in figure 3.1 shows the research methodology of the study:

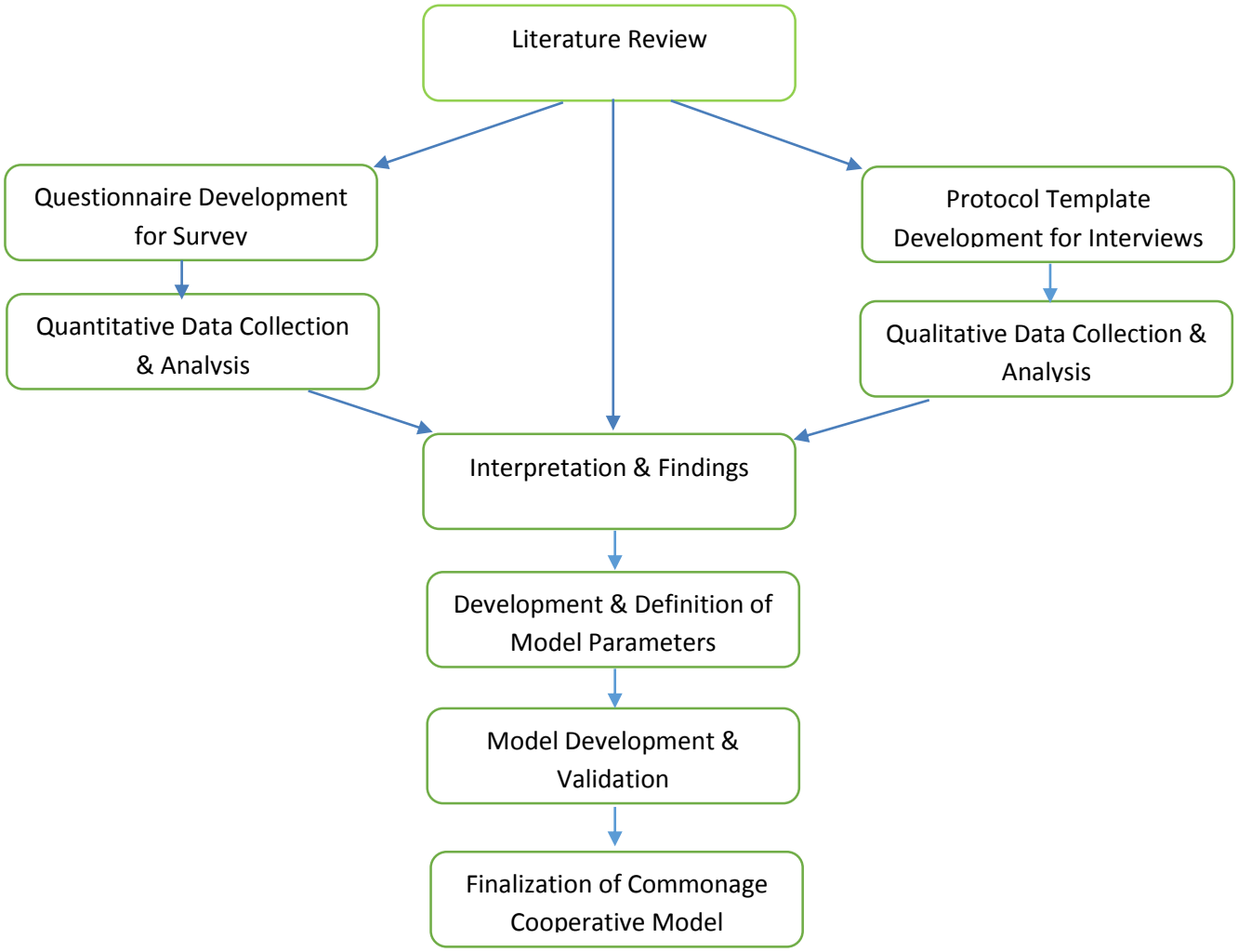


Figure 3.1. Flow Chart of the Research Methodology

Figure 3.1 illustrates a roadmap of the research study. Through the review of literature, it connects both the quantitative and the qualitative design. This approach guides the researcher all the way through the analysis into interpretations and findings. Model development was facilitated by the parameters established as defined by the empirical findings. Thereafter, the developed model was presented for validation to give effect to a substantive commonage cooperative model for SMME pig farming business in the

Central Free State Province. By this approach, the mixed methods design was therefore adopted, which involves collecting, analysing, and integrating quantitative and qualitative research data in a single study or a longitudinal programme of inquiry (Creswell, 2013:222). It is an approach whereby the study is enriched with different benefits as specified in table 3.2 below. This mixed methods approach provides a better insight into the research problem than a single approach would.

Table 3.2: Qualitative and Quantitative Approaches in Mixed Methods Approach

QUAN MODEL	**Explanatory**	QUAL MODEL	**Exploratory**	QUAN-QUAL
Deductive approach		Inductive approach		**Triangulation**
Objective reality		Participant's perspectives		
Causal relationships		Describing & understanding relationships		
Identify and test hypotheses		Emerging questions		
Random selection of participants		Purposive sampling		

3.3.1.1 Quantitative approach

In this approach, some aspects of the post-positive claims are demonstrated. This strategy requires a survey method, by means of which a questionnaire method is applied to collect ordinal data on predetermined instruments that yield statistical data (Creswell, 2012:166), information relating to operation management, general business management, marketing systems, such as the marketing mix strategies, marketing concepts and sales records.

To support the questionnaire, existing quantitative data for the study, covering for a period of 10-years, will be generated from the INTERGIS database of SA Studbook, the livestock database of the National department of Agriculture, and the commonage database of the Department of Rural Development and Land Reform. Chi-square (X^2) test will be used to determine significant difference between results. Data to determine return on investment, sustainability and profitability of pig farming SMMEs will be generated by means of Statistical Package for Social Sciences (SPSS).

3.3.1.2 Questionnaire survey

A total number of 126 questionnaire forms, specifically designed for the quantitative approach, were distributed to and collected from prospective respondents between November 2015 and March 2016. Questionnaires are used to standardize the collection of information; when gathered from a representative sample of a defined population, allows the inference of results to the wider population (Rattray & Jones, 2007:235). Thus, questionnaires represents an essential method of data collection due to the ease to complete and analyse, as well as being cost-effective. The questionnaire used in the gathering of data is designed to reflect issues in the research questions and key objectives of the study. Various types of questions are simplified in sufficient detail and with sufficient rigour to enhance interpretation of results from questionnaires.

Scaled questions with fixed-choice response formats, which are designed to measure attitudes or opinions were included, such as the ordinal and most commonly used Likert-type scale and frequency scales. These scaled questions assume that options are linear in strength and intensities. Other formats include closed-format questions or choice-format questions with provisions for respondents to tick boxes which drives quantitatively. Some formats included are open format questions, which derived a more qualitative analytical instrument and giving respondent unlimited opportunity to explore into more perspectives. The questionnaire form is divided into four sections, which consist of a total of seventy questions as handed out to respondents. The first page contains an introductory note, followed by:

Section A: Entrepreneurial Demography

Section B: Marketing Management Activities

Section C: Innovation Management Activities

Section D: Firm Performance and Sustainability.

3.3.1.3 Population and sampling in quantitative study

All livestock farming business enterprises in the Free State Province that include pigs in their stock constitute the population of this study. The exact number of pig farming SMMEs in the Free State is highly unstable and varies with life cycle constraint. However, according to a reliable sample frame from the provincial extension service data of the provincial Department of Agriculture, the study identified a population of 223, out of which a total of 116 pig farming SMMEs were sampled for the quantitative approach of the study through the 126 questionnaires forms distributed. Basically, the demographic characteristics consist of smallholders and other pig farming SMMEs including those in the commonages. These samples are drawn from the registration data base of the Free State provincial Department of Agriculture through the Extension officers. Another criterion is that they must have evolved from one stage of a historical life cycle to another. This implies that they must have been in business fairly long enough to produce reliable data that could contribute to reliable findings.

3.3.1.4 Sample size and sampling technique in quantitative study

The organized structure of the extension services of the Free State Provincial Department of Agriculture was instrumental in applying convenience sampling. Apart from the 2012 sampling frame of the South African Pig Producers Organisation (SAPPO) Free State membership, the field extension officers could provide a more realistic population of 223 active pig farming enterprises, some of which are based in municipal commonage centres. A sampling frame provides access to the individual elements of the population under studies (Sapsford & Jupp, 2006:28). Thus, a total sample size of existing 116 pig farming SMMEs was recruited into the study, specifically for the quantitative questionnaire survey. Data from a Statistics South Africa, 2013 publication show that in the Free State a population of 978 agricultural households own between 11 to 100 pigs, and which are classified as smallholders (Stats SA, 2013:16) in seven municipalities, namely: Kopanong, Setsoto, Letsemeng,

Masilonyana, Nala, Mangaung and Mantsopa. A brief description of the selected municipalities will follow in the next sections.

A non-probability sampling technique was applied. For reasons of convenience and the need to conserve time and money, the researcher considered the fact that most of the respondents were spread far apart in the inaccessible areas of the Free State province. The stipulated characteristics of the study population include: firstly, SMME pig farmers with a historical life cycle duration of up to a five-year continues business operation, which enables the study ascertain profitability and size of operations. Secondly, organized smallholders with commercial status including those collectively operating from the commonage centres, and thirdly, SMME pig farmers contained in the data base of the Free State Provincial Department of Agriculture and Rural Development.

3.4 QUESTIONNAIRE PILOTING

Before commencement of the actual study, it was considered necessary to conduct a pre-testing or pilot study with the aim of isolating errors in the design of the questionnaire and ascertaining that the design of the questionnaire works effectively, as well as moderating the questionnaire accordingly with respect to the sample size as well as complying with the stipulated characteristics of the study population. Two questionnaire forms were distributed to and collected from selected SMME pig farmers from seven municipalities with the assistance of the extension officers of the Free State Provincial Department of Agriculture and Rural Development.

Approaches:

- A number of draft copies of the questionnaire were vetted by experts and colleagues and comments were taken into account.
- Piloting of 10% of a target sample participants, with identical characteristics and which were not included in the final sample.
- Consideration for Field Pre-Testing, Interview Debriefing and Respondent Debriefing.
- Review questionnaire for likely repeat pilot if need be.

3.5 QUANTITATIVE DATA COLLECTION TECHNIQUE

A survey method of data collection was applied for quantitative data collection by means of a semi-structured questionnaire. Survey items were piloted on 10% of pig farming enterprises not included in the sample to test the reliability and validity of the instruments. According to Morin (2013:547) a pilot study is the conduct of the main study in a miniature, more than just a feasibility study. By means of a pilot study, an assessment of how well the study components work is established. This approach can contribute to the final analysis (Arain et al, 2010:5).

The questionnaire contained a variety of questions: open-ended questions were used, specifying expected response. Closed-ended questions with a set of pre-designed replies such as 'Yes/No, 'True or False', multiple-choice responses were also included as well as a few other kinds, such as category questions, ranking questions and Likert-scale questions.

Priority was given to a thorough use of existing internal secondary data before turning to external sources to facilitate numerical representation of observation and statistical analysis (McQuarrie, 2012:53). A descriptive, quantitative, non-experimental design was used to establish associations between variables (McMillan & Schumacher, 2006:150). Internal sources included reported annual financial records and general reports on marketing and management. External sources included data from existing periodicals and literature from provincial and national departments and other institutions.

Collected information were translated into numbers, which can then be displayed and statistically analysed. A systematic approach was followed in collecting measurable data in relation to agricultural cooperatives, commonages and support system, pig production system input and output, agriculture market indicators. Four (4) trained field workers were assigned to administer questionnaires. These designated field workers included the extension officers of the Free State Provincial Department of Agriculture and Rural Development and a few other recommended community agents, otherwise

it would be difficult to gain access to the respondents. The challenge of language barriers was a strongly factor considered.

3.6 QUANTITATIVE DATA ANALYSIS PLAN

Table 3.3: Survey questionnaire analysis

	Research questions	**Key variables**	**Corresponding Survey Questions**	**Statistical Applications**
1	What are the key factors that lead to the sudden business failure syndrome amongst pig farming SMMEs in the Central Free State?	Business failure syndrome.	Items 32, 38, 57, 62, 70	Pearson Chi-square test (χ^2), *P*-value & percentage.
2	Are pig farming SMMEs satisfied with existing management strategies regarding their performance and sustainability?	Management strategies, performance & sustainability.	Items 44, 65, 70,	Pearson Chi-square test (χ^2), *P*-value & percentage.
3	Is there a significant association between enterprise size of operation and sustainable enterprise performance amongst the pig farming enterprises in the Central Free State?	Enterprise size of operation, performance & sustainable enterprise.	Items 68, 36, 39, 17, 18, 11	Pearson Chi-square test (χ^2), *P*-value & percentage.
4	Does enterprise diversification as well as indebtedness have a significant association with sustainable enterprise performance amongst pig farming SMMEs in the Central Free State?	Diversification, indebtedness, performance and sustainable enterprise.	Items 8, 11, 13, 14, 15, 16	Pearson Chi-square test (χ^2), *P*-value & percentage.
5	Is there a significant association between existing marketing strategies and sustainable	Marketing strategies, performance	Items 40, 41, 28, 25	Pearson Chi-square test

	enterprise performance amongst pig farming SMMEs in the Central Free State?	and sustainable enterprise.		(χ^2), *P*-value & percentage.
6	Will changing existing business models in order to maximize sustainable enterprise performance be supported amongst pig farming SMMEs in the Central Free State?	Business models, performance and sustainable enterprise.	Items 17, 18, 64,	Pearson Chi-square test (χ^2), *P*-value & percentage.

3.7 QUALITATIVE APPROACH

Creswell (2013:7) provides a non-exhaustive classification of qualitative approaches, which have emerged between 1987 and 2011 with an intention of illustrating the diversity and importance of approaches. It is aimed that this approach becomes useful in addressing situations where the research question involves seeking respondents' experiences and opinions over phenomenon. Interviews were conducted among participants.

The participants of the study were selected from amongst pig farming SMMEs, all of which happened to be owned by black males and females. As many as 79% of them are full-time pig farmers and the rest are part-time, which implies that those on part-time may have other sources of personal income apart from pig farming. As indicated in Chapter 1 of this thesis, the participants, all in the Central Free State province, must have been in pig farming, have evolved from one historical life cycle to another, and may diverted into other lines of farming operations. As many as 81% of the participants operate their pig farming businesses as tenants on the commonage centres provided by the local municipality. These centres are far away from residential areas. In most cases, these pig farmers construct their individual pig tents to house their pigs.

For the purpose of the interviews, the samples were geographically distributed across the Province in order to reflect diversity. Twenty-eight (28) participants were

conveniently selected for the study; this limited number was due to resource constraints and remoteness of the entire operation sites in the population, believing that the outcome of this approach will be an acceptable complement for the quantitative approach.

3.7.1 Population and sampling in qualitative study

The qualitative sampling amongst the study population takes uniform patterns as considered in the quantitative sampling; in which case, all livestock farming business enterprises that include pigs in their stock constitute the population of this study. The exact number of pig farming SMMEs in the Free State is highly unstable and varies with life cycle constraints. The sampling relied on the entries made in the data-base of the Free State Provincial Department of Agriculture and Rural Development. A total of 28 pig farming SMMEs where exclusively sampled for the purpose of the qualitative study. These samples were drawn from the data base of the Free State provincial Department of Agriculture through the Extension Officers. Another striking criterion that affected the population probably relates to their being evolved from one stage of a historical life cycle to another. This implies that they must have been in business fairly long enough to produce a reliable data which could contribute to reliable findings.

3.7.2 Sample size and sampling technique in qualitative study

Creswell (2009:178) indicates the need to consider the following four aspects in selecting participants:

- The setting: the research venue
- The actors: who will be observed or interviewed
- The events: what the actors will be observed or interviewed doing
- The process: the evolving nature of events undertaken by the actors within the setting.

The enterprise participants in the study were purposefully selected. According to Creswell (2009:6) this will best help the researcher to understand the research problems and questions. The researcher is mindful of the likelihood of bias as one of the limitations in purposive sampling, as each sample is entirely based on the

researcher's informed judgement. A total of twenty-eight pig farming enterprises were considered for the qualitative study, representing 32% of the sample.

Purposive sampling was applied, whereby the researcher focused on participants who share similar traits or specific attributes in terms of enterprise evolution from one stage of a historical life cycle to another, as well as likely functions. Basically, the homogeneous sampling was influenced by the fact that participants selected have characteristics in relationship to critical aspects of the research questions in the study.

3.7.3 Qualitative data collection technique

3.7.3.1 Interviews

Qualitative data were derived from person-to-person, audio-taped interviews of twenty-eight (28) owner/manager(s) of selected pig farming SMMEs in the Central Free State province. This process was based on predetermined semi-structured questions, which was administered based on a set of protocol and interview schedule. The researcher was introduced to the study participants by the extension officers of the provincial Department of Agriculture, following which appointments were secured for interview sessions. During the introduction, the researcher presented a letter of introduction and verbally provided an adequate explanation of the aims and objectives of the study. An open-ended conversational format supported the process of gathering in-depth information about the study population and their operating environment. Similar questions were replicated for all participants with respect to a designed interview schedule (see **Annexure C**).

The use of a digital recorder was helpful for data storage and easy analysis. Note-taking during interview sessions was done. Participants were given the opportunity to ask questions for clarity. The note-taking method was useful in support of situations where participants were not designated to an observation method due to resource limitations and the need for extensive data from study participants (Creswell 2014:191). By the time a sound rapport between the researcher and the participant was established, validity and reliability of an interview as a tool for research data collection was measured.

This design involves a one-on-one and phone interview methods, which were carried out among participants. This group was selected exclusive of those included in the quantitative study. One-on-one interviews were conducted right on the participant's business premises. These enterprises will replicate divergences across the livestock producers in the Free State province with respect to existing business models, which describe the rationale of how they create, deliver and capture value (Osterwalder & Pigneur, 2010:2) within a network of producers, suppliers and consumers (Lundy & Macgregor, 2008:1).

These methods were immensely helpful in gathering more detailed information about the thoughts, feelings and perceptions of the respondents. With respect to interviews, the interviewees had more time to expand on each of their answers regarding size of operation and survivability, the effect of livestock farming diversification on sustainability, business management strategy and marketing strategies.

In terms of the one-on-one method, this presented the advantage of handling a more sensitive, personal and potentially embarrassing subject matter, of which the interviewee would not have otherwise disclosed. Another advantage was a detailed understanding of complicated behavioural approaches and motivations of respondents.

The telephone interview was mainly by means of the cell phone, since almost all the respondents in the populations lacked fixed phone line facilities, perhaps due to the remote location of their business premises.

3.7.4 Quantification of qualitative data

Trochim (2006:Internet) was emphatic in his contribution to the qualitative debate that all qualitative data can be coded quantitatively. He maintained that qualitative data can be assigned meaningful numerical values. This study was careful to have participants' qualitative text-based responses classified into simple categories which were assigned short labels that represented themes. The following tables 3.4 and 3.5

respectively is an illustration of a simple thematic coding analysis according to Trochim (2006):

Table 3.4: Quantifying qualitative data: Qualitative coding (1)

Person	Theme 1	Theme 2	Theme 3	Theme 4	Theme 5
1	✓	✓		✓	
2	✓		✓		
3	✓	✓		✓	
4		✓		✓	
5		✓		✓	✓
6	✓	✓			✓
7			✓	✓	✓
8		✓		✓	
9			✓		✓
10				✓	✓

Source: Trochim (2006)

In the following table 3.5 the same information is quantitatively represented and subsequently converted into percentage for analyses:

Table 3.5: Quantifying quantitative data: Quantitative coding (2)

Person	Theme 1	Theme 2	Theme 3	Theme 4	Theme 5	Totals
1	1	1	0	1	0	3
2	1	0	1	0	0	2
3	1	1	0	1	0	3
4	0	1	0	1	0	2
5	0	1	0	1	1	3
6	1	1	0	0	1	3
7	0	0	1	1	1	3
8	0	1	0	1	0	2
9	0	0	1	0	1	2
10	0	0	0	1	1	2
Totals	4	6	3	7	5	25

Source: Trochim (2006)

Figures 3.4 and 3.5 above are the approaches applied in the subsequent stage of the qualitative data analysis of the study. This approach was helpful in quantifying the qualitative data, which were collected from the 28 interviewees. These responses were coded into themes with meaningful numerical values.

3.8 SUMMARY

A detailed presentation of the study methodology was achieved in this chapter. It linked together the two approaches that were applied in collecting and analysing the data; namely, the qualitative and the quantitative approaches. A flowchart of the research methodology was presented and was used in every step taken in executing the research strategy. Apart from the 10% of the target population which was used in the pilot study, a total of 144 respondents positively participated in the study. Altogether 116 respondents returned a valid and useable questionnaire materials, which were used in the quantitative survey approach. On the other hand, a total population of 28 owners or managers of the SMME of farming enterprises were recruited for the qualitative interview approach. A quantitative data plan was developed to facilitate the survey questionnaire analysis; this plan had a display of the research questions, key variables, corresponding survey questions, and the statistical applications. The qualitative data were quantified by using the thematic coding approach according to Trochim (2006:Internet).

CHAPTER 4

DATA VALIDATION AND ANALYSIS

4.1 INTRODUCTION

In this chapter, a validation and analysis of the data as guided by the research methodology discussed is presented. The major aim of this chapter is to present the data, provide analyses and findings of the study relating to the business model for sustainable SMME pig farming in the Central Free State. Different techniques were applied in data validation and analysis. The chapter is divided into three sections. The first section focuses on the aspect of the descriptive statistics with a display of sample characteristics and the procedures applied in refining it.

The second section deals with the inferential statistics whereby associations between two unmatched samples are presented using the Pearson Chi-square to determine if there is association between 2 categorical variables. In other words, it is used to determine whether or not there are significant differences between the distributions of 2 nominal (categorical) variables. The null hypothesis is that there is no significant association between the 2 variables whilst the alternative hypothesis is that there is a significant association between the 2 variables.

To make a conclusion in the context of null hypothesis testing regarding the statistical significance of evidence, the p-value is considered. The p-value only serves as a tool for deciding whether to reject the null hypothesis or not. A p-value of 0.1 was used; a smaller p-value means that there is stronger evidence in favour of the alternative hypothesis. If the p-value is less than or equal to 0.1, the conclusion is that there is a significant association between the 2 variables and if the p-value is greater than 0.1 then the conclusion is that there is no significant association.

The third section focused on qualitative data analysis whereby themes were formulated and responses outlined.

4.2 DATA SOURCES

Data analysis that helped in the overall understanding and operationalization of a commonage co-operative model was guided by the research paradigm and involved the use of descriptive and inferential statistics. According to Gray (2004:297) descriptive statistics involves the creation of a summary picture of a sample or population in terms of key variables being researched; and on the other hand, with respect to accepting and rejecting hypotheses, inferential statistics are used to make inferences from the sample chosen to a larger population (Gray, 2004:301).

To comply with statistical requirement in testing hypotheses, since ordinal data were generated from category, ranking and Likert-scale questions, a non-parametric statistic will be used; hence, the choice of Pearson chi-square test (χ^2) was used for hypothesis testing. Generated data were condensed and made manageable; displayed and described by the use of means, frequency distributions, pie charts and bar charts in a systematic way (Frankfort-Nachmias & Leon-Guerrero, 2011:21). This were supported by the use of Statistical Package for the Social Sciences (SPSS) in the development of tables for accommodating both dependent and independent variables. SPSS is a generally used statistical programme for quantitative data analysis, the analysis follows the patterns contained in the '*SPSS for Social Scientists'* by Miller et al. (2009). The Chi-square is appropriate in determining significant differences between expected and observed frequencies in one or more categories (Schultz, 2007:1).

The following are data displays of responses to the questionnaire. Data are clearly presented in figures and tables and accompanied by explanations for ease of readability. It proceeds with respondents' demographics and complements with a more specific focus on addressing the research questions and hypotheses of the study.

4.2.1 Descriptive and inferential statistics

Gender

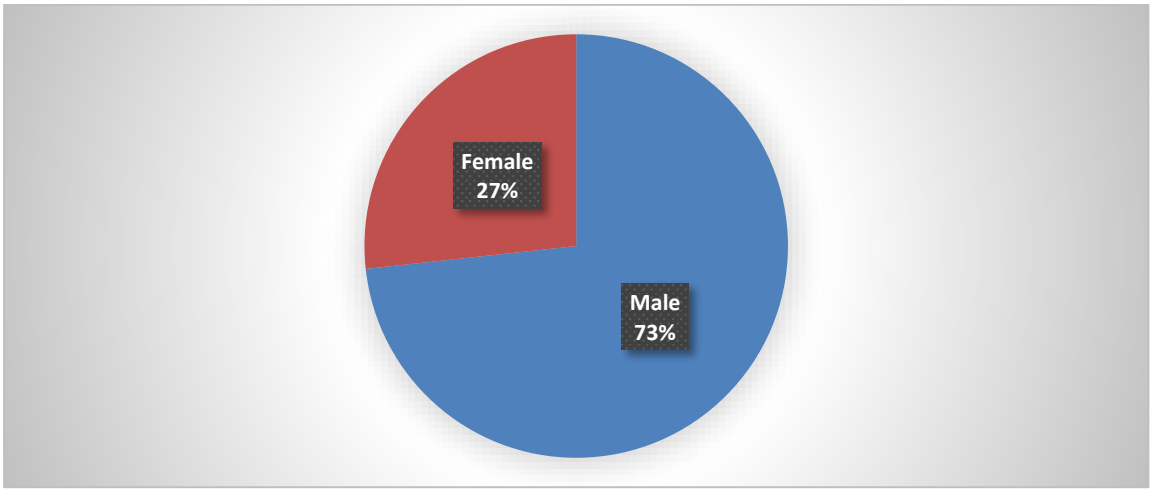


Figure 4.1: Data display for gender (N=116)

Gender	Frequency	Percentage	
Male	85	73	
Female	31	27	
Total	116	100	

With regard to gender, figure 4.1 illustrates that there were 31 female and 85 male respondents who may either fall in the category of owner or manager (27% and 73% respectively). The reason for this skewed result is that men have a tendency to persist in the piggery business more so than women, either as managers or owners.

Position

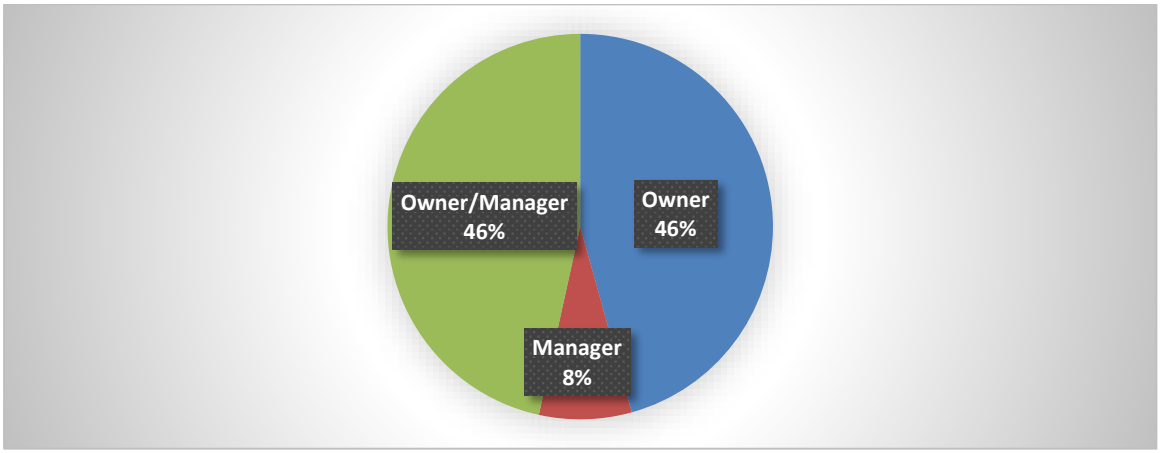


Figure 4.2: Data display for position (N=116)

Position	Frequency	Percentage	
Owner	53	46	
Manager	10	8	
Owner/Manager	53	46	
Total	116	100	

Figure 4.2 represents data with regard to position held in the enterprises by respondents. Almost half (53) of respondents (46%) are owners of the business, as well as (53) who are concurrently owners and managers (46%). The rest (10) of respondents are only managers (8%).

Age

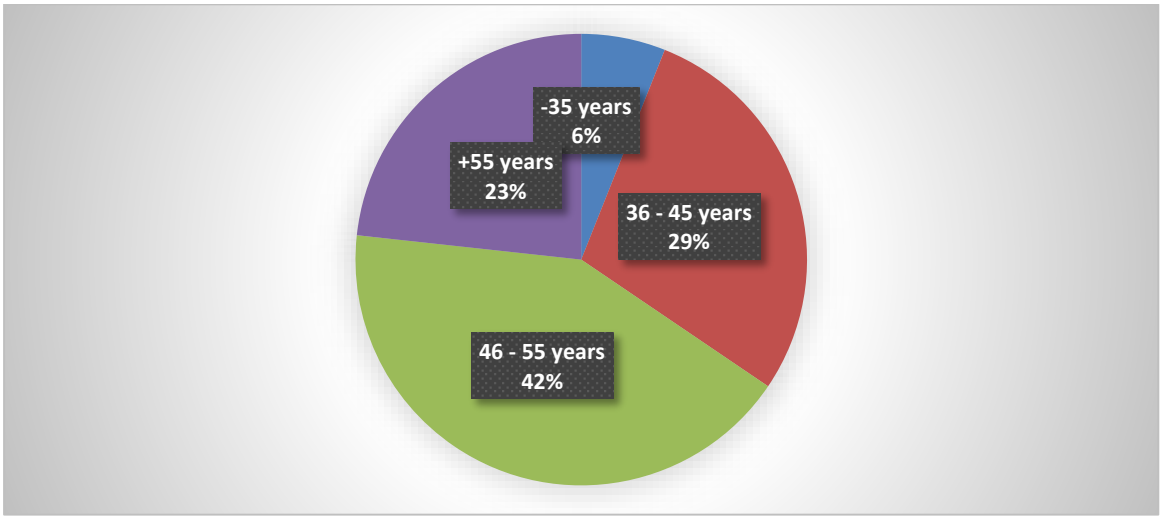


Figure 4.3: Data display for age (N=116)

Age	Frequency	Percentage	
-35	7	6	
36-45	34	29	
46-55	49	42	
55+	26	23	
Total	116	100	

With regard to age, figure 4.3 demonstrates that the majority of respondents (49) are in the age category of 46 to 55 (42%), while 7 of the respondents are in the least age category of between 26 to 35 years (6%). This could imply that the older population groups are more likely to remain in piggery business.

Ethnicity

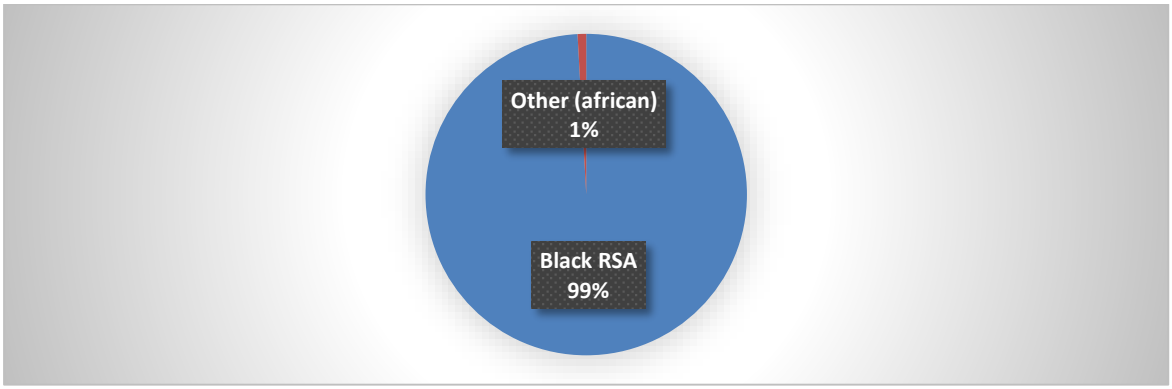


Figure 4.4: Data display for Ethnicity (N=116)

Ethnicity	Frequency	Percentage	
Black RSA	164	99	
Other Africans	2	1	
Total	116	100	

With regard to figure 4.4, the data illustrates that 164 of the respondents, which makes up the majority (99%), were black South Africans, while the rest (2) respondents were blacks of other nationalities (1%). This demography is based on the characteristics of the study population.

Educational Status

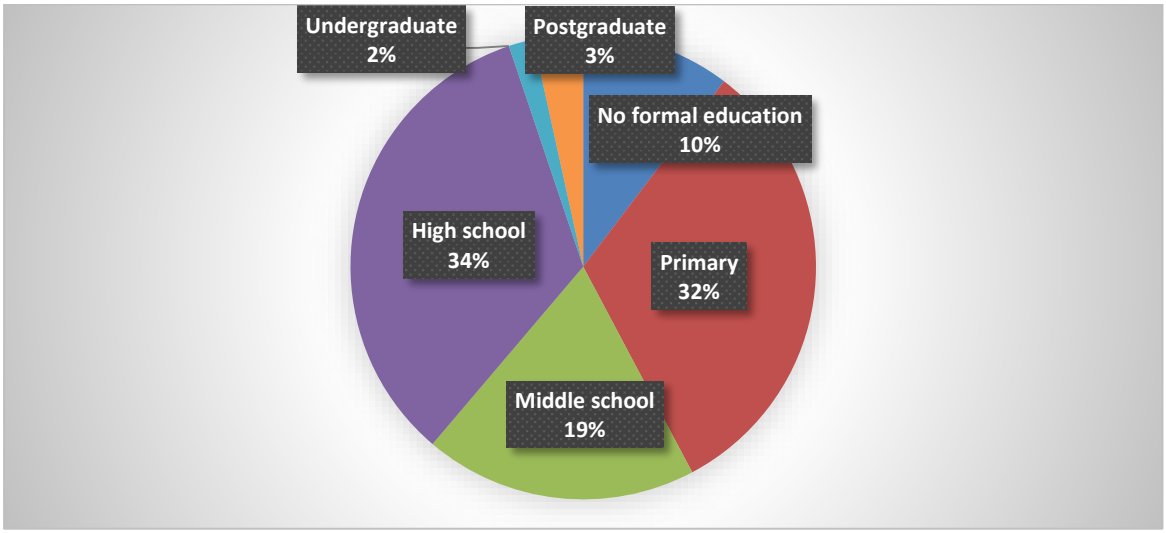


Figure 4.5: Data display for educational status (N=116)

Educational Status	Frequency	Percentage	
No Formal Education	12	10	
Primary	37	32	
Middle School	22	19	
High School	39	34	
Undergraduate	2	2	
Postgraduate	4	3	
Total	116	100	

Figure 4.5 shows that 98 of the respondents, which makes up 85%, are not above high school in educational status, which could imply that they may have relied more on other trade-related training as figure 4.6 shows.

Level of Business Training

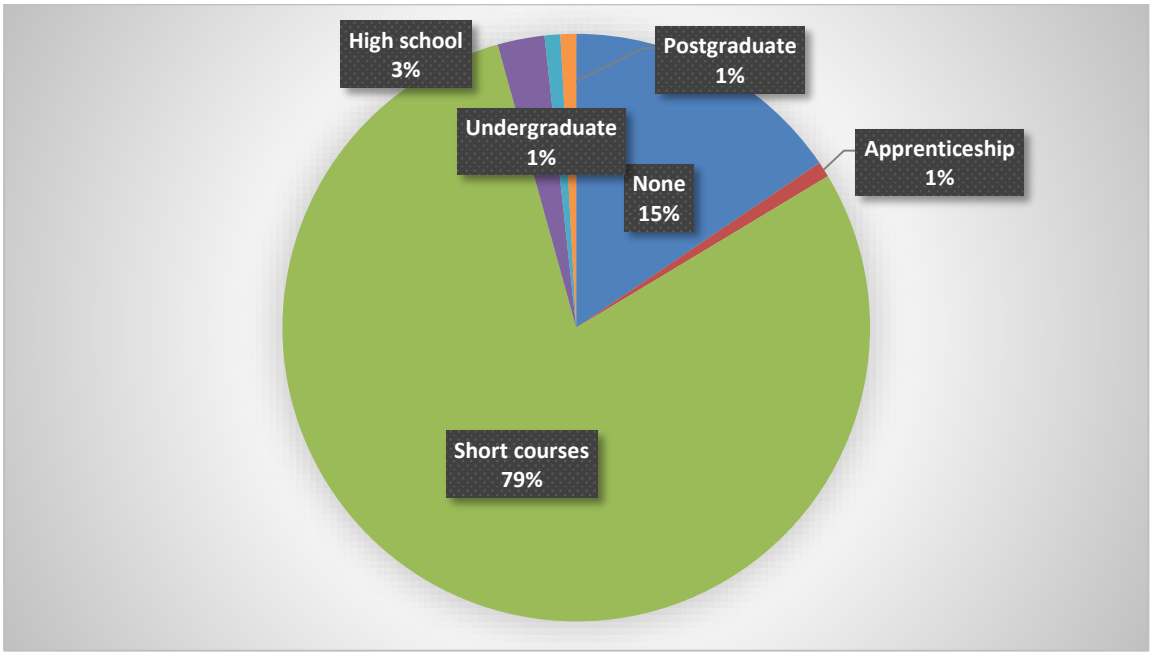


Figure 4.6: Data display for highest level of business training (N=116)

Business Training	Frequency	Percentage	
None	17	15	
Short Courses	92	79	
Apprenticeship	1	1	
High School	4	3	
Undergraduate	1	1	
Postgraduate	1	1	
Total	116	100	

Figure 4.6 illustrates data on the highest level of business training of which the majority of the respondents 92 (79%) attended short courses; it reveals that 17 (15%) them had none while 4 (3%) of them could only obtain a business training in high school.

Level of Training in Entrepreneurship

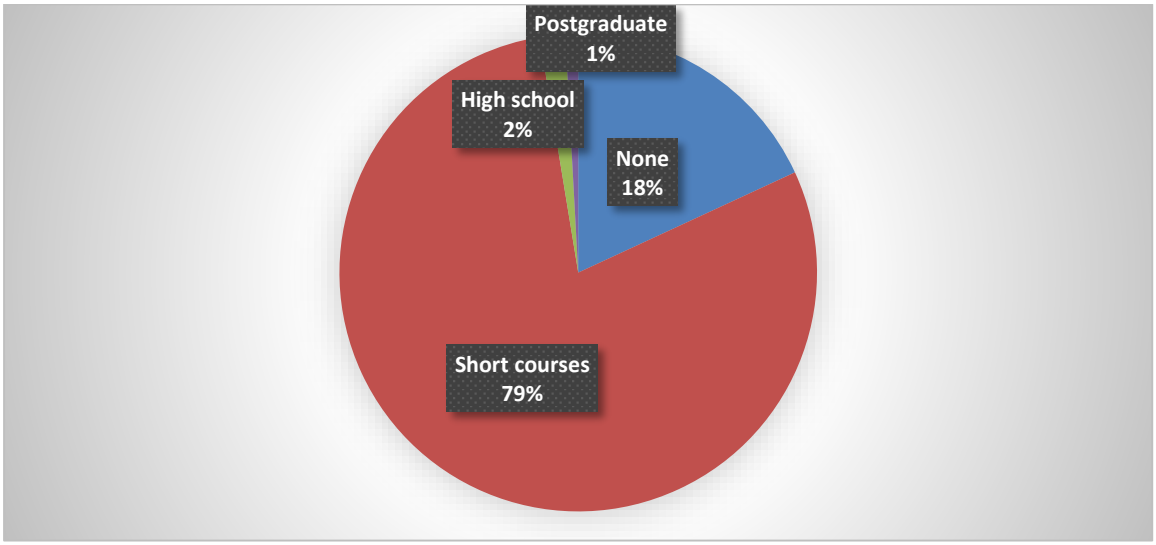


Figure 4.7: Data display for highest level of training in entrepreneurship (N=116)

Entrepreneurship Training	Frequency	Percentage	
None	21	18	
Short Courses	92	79	
High School	2	2	
Postgraduate	1	1	
Total	116	100	

Figure 4.7 illustrates data on the highest level of training in entrepreneurship and of which majority of the respondents 92 (79%) attended short courses; it reveals that 21 (18%) of them had none, while 2 (2%) and 1 (1%) of them obtained it from high school. The extension officers of the Provincial Department of Agriculture and Rural Development corroborated the findings that majority of the SMME pig farmers have benefited from short courses. Training in entrepreneurship is one of the training programmes that are periodically organized by the Department. This form of training is aimed at teaching these SMMEs the basic livestock farm management functions and skills as well as piggery operations.

Size Category

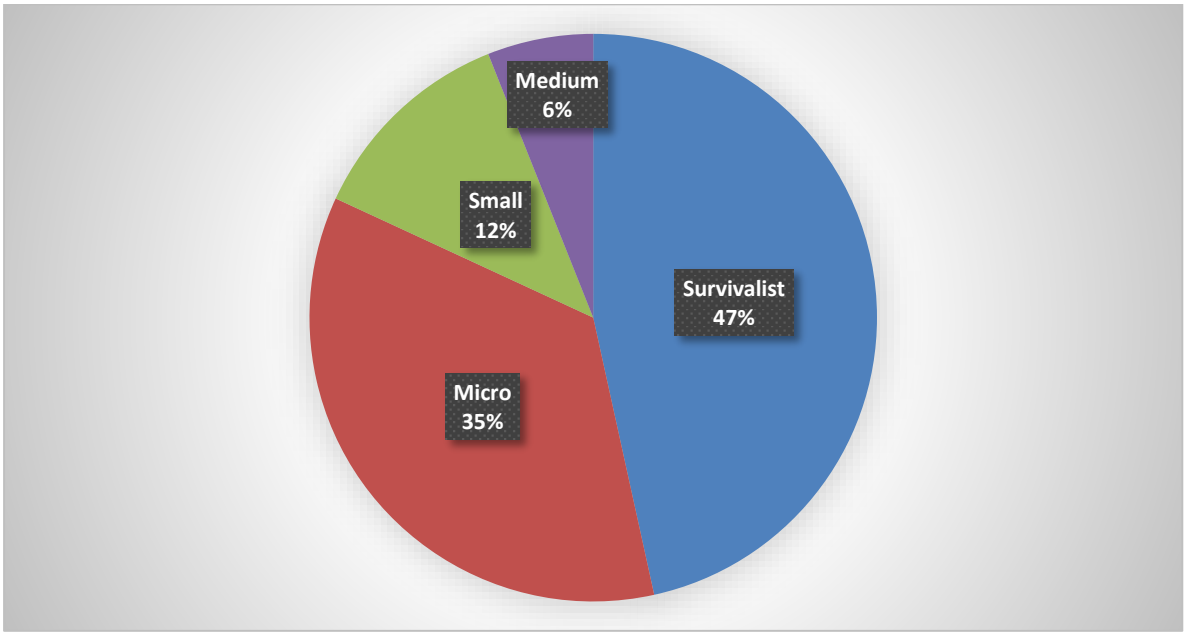


Figure 4.8: Data display for size category of the pig farming enterprises

Size Category	Frequency	Percentage	
Medium	7	6	
Small	14	12	
Micro	41	35	
Survivalist	54	47	
Total	116	100	

Figure 4.8 illustrates four categories of the pig farming business in the order of medium, small, micro and survivalist. It indicates that 54 (47%) of them are operating as survivalists, and 14 (12%) of them were small; 41 (35%) respondents are in the size category of micro and 7 (6%) are medium. This implies that over time the SMME pig farming businesses in the Free State Province experienced a steady liquidation. Few of them barely progress to the medium-size category. Data revealed that there is a hug margin between the number of SMMEs in the micro size and those in their small size.

Livestock (Pigs)

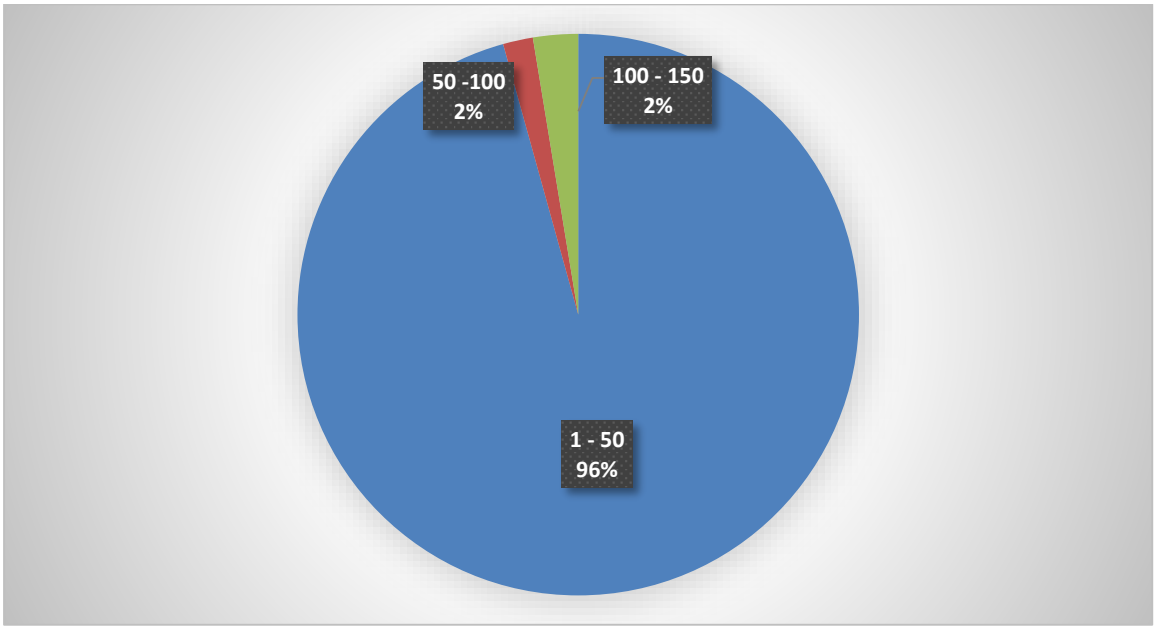


Figure 4.9: Data display for number of livestock (pigs) (N=116)

Number of Livestock (Pigs)	Frequency	Percentage	
1 - 50	112	96	
50 - 100	2	2	
100 - 150	2	2	
Total	116	100	

Figure 4.9 shows the number of livestock captured from the respondents, of which 112 (96%) of the respondents had between 1 and 50 pigs; 2 (2%) had between 50 and 100 pigs; and also between 100 and 150 pigs respectively. According to the questionnaire responses, the majority of them had fewer pigs in their inventories. This implies poor production activities of the SMMEs, resulting in sales downtime and poor market performance, irrespective of the high potential of pig reproduction compared to other types of livestock. This result may have equally contributed to the low profitability among these enterprises.

Persons Employed

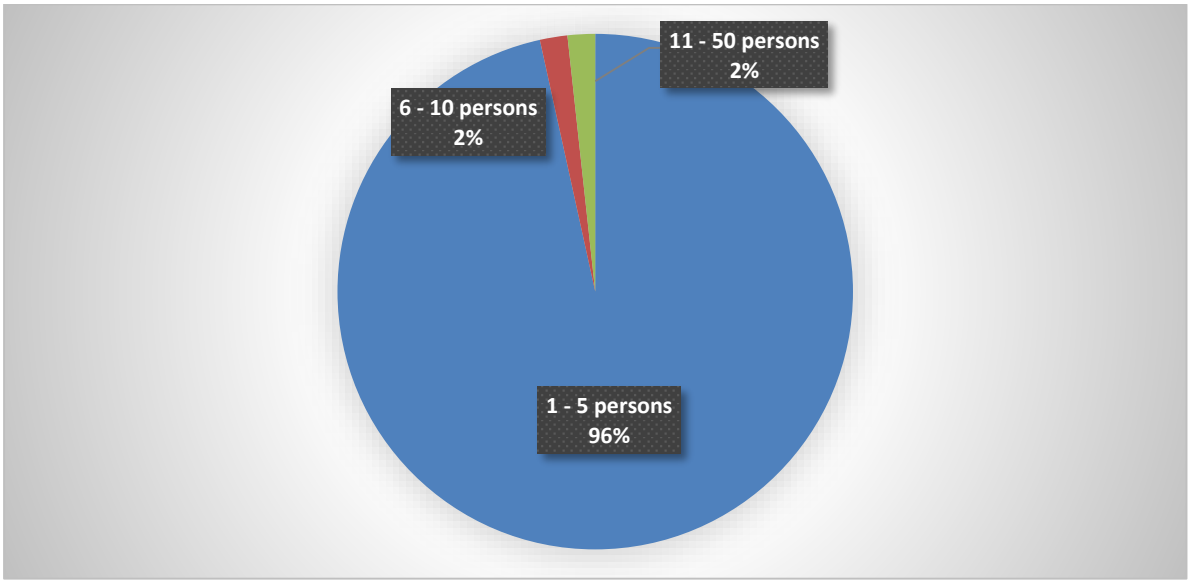


Figure 4.10: Data display for number of persons employed by the enterprises (N=116)

Number of Persons Employed	Frequency	Percentage	
1 - 5	112	96	
6 - 10	2	2	
11 - 50	2	2	
Total	116	100	

Figure 4.10 shows that 112 (96%) of the respondents had between 1 to 5 workers in the piggery, while between 6 to 10 and between 11 to 50 persons were hired by 2 (2%) of the respondents respectively. The majority of the sample hired fewer employees, and are owner/managers of their enterprises, implying that it is likely that production activities were equally less as they had fewer pigs in their inventories. Data based on interview indicated that it was only an outstanding 2 respondents, who were more organized, diversified, and having more livestock that hired more than 10 employees.

Years of Operation

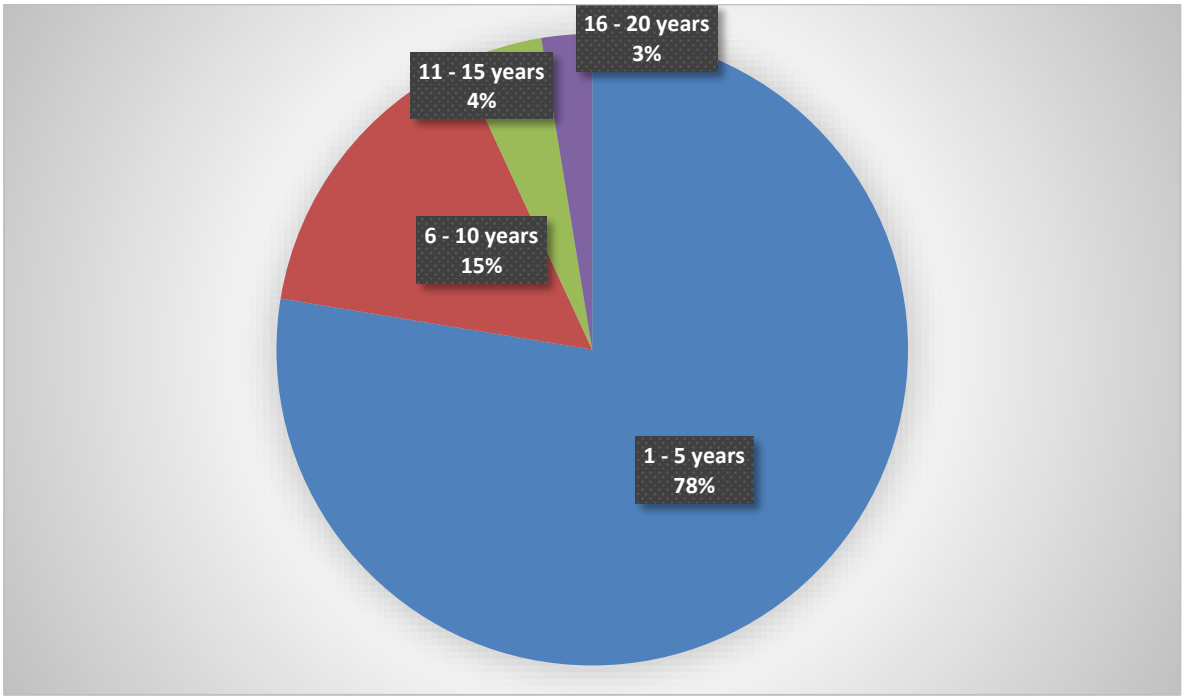


Figure 4.11: Data display for number of years of pig farming enterprise operations

Years of Operation	Frequency	Percentage	
1 - 5	91	78	
6 - 10	17	15	
11 - 15	5	4	
16 - 20	3	3	
Total	116	100	

Figure 4.11 shows that 91 (78%) of the respondents have been in business for a period between 1 to 5 years, while 17 (15%) of them for as long as 6 to 10 years. On the other hand, only 5 (4%) of them have been in business between 11-15 years and 3 (3%) record between 16-20 years. The results signal an unfortunate enterprise lifespan.

Life cycle Stage

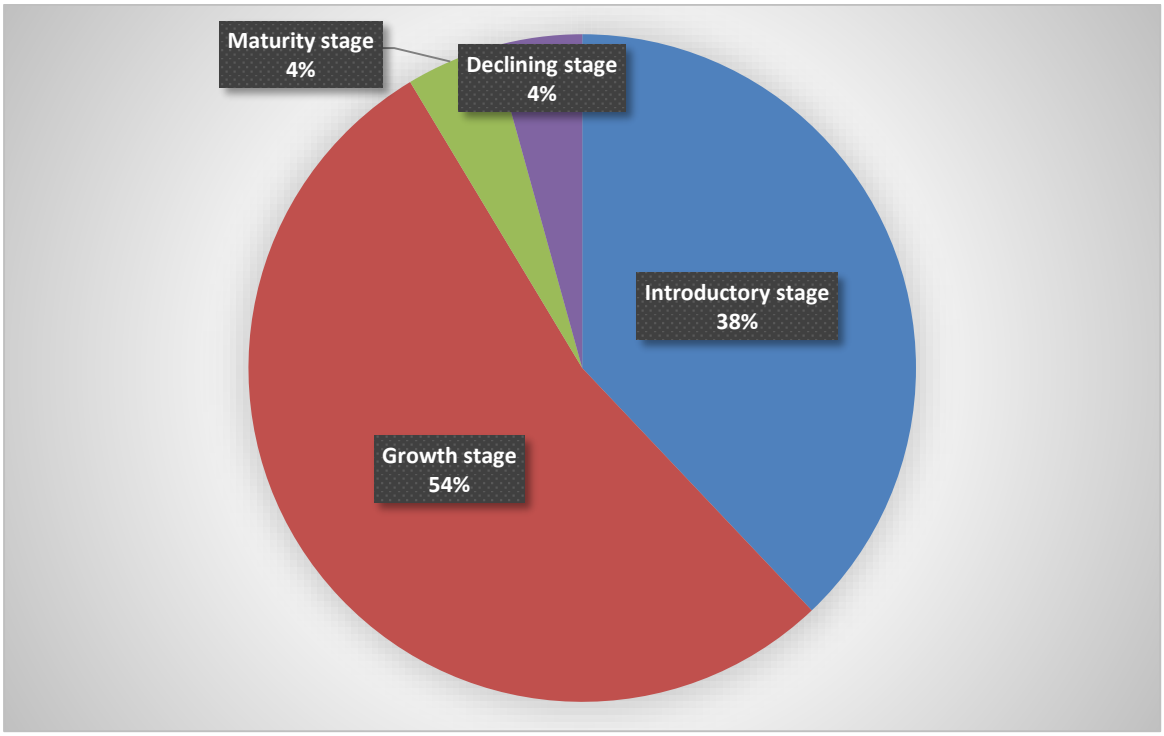


Figure 4.12: Data display for current life cycle stage of operation

Life Cycle Stage	Frequency	Percentage	
Introductory	44	38	
Growth	62	54	
Maturity	5	4	
Declining	5	4	
Total	116	100	

Figure 4.12 shows that 62 (54%) of the enterprises are currently at the growth stage of their life cycle, whereas 44 (38%) are at the introductory stage. Both maturity and declining stages had 5 (5%) respondents respectively. This could imply that between the maturity and the declining stage, the majority of the study population were already exiting from the business for reasons yet to be concluded in the study. Every life cycle stage has its peculiar characteristics, which may influence its progression into the next stage. The duration an enterprise remains in a particular life cycle stage varies with

another, as well as their unique characteristics. The introductory stage seems to be a period of incubation and the majority of the entrants were motivated by the available municipal commonage centres and its infrastructure where they could keep livestock and demonstrate entrepreneurship. At the growth stage, their strengths and opportunities expand as they remain guided by the extension officers of the Free State Provincial Department of Agriculture and Rural Development. At this stage there is improvement in the number of livestock and reduction in cost of operation.

Business failure or outright exit from business operation could occur at any particular stage of the life cycle. Few respondents hardly reached the maturity stage. This may be partly due to internal and external dynamics in the business. More challenging is the declining stage, for it is revealed that at this stage there is the likelihood that an adverse market competition negatively impact on the emerging pig producers. This may be due to the assumption that established commercial pig producers are well networked. This scenario seems to have made it difficult for them to secure a sustainable market for their stock.

Form of Organisation

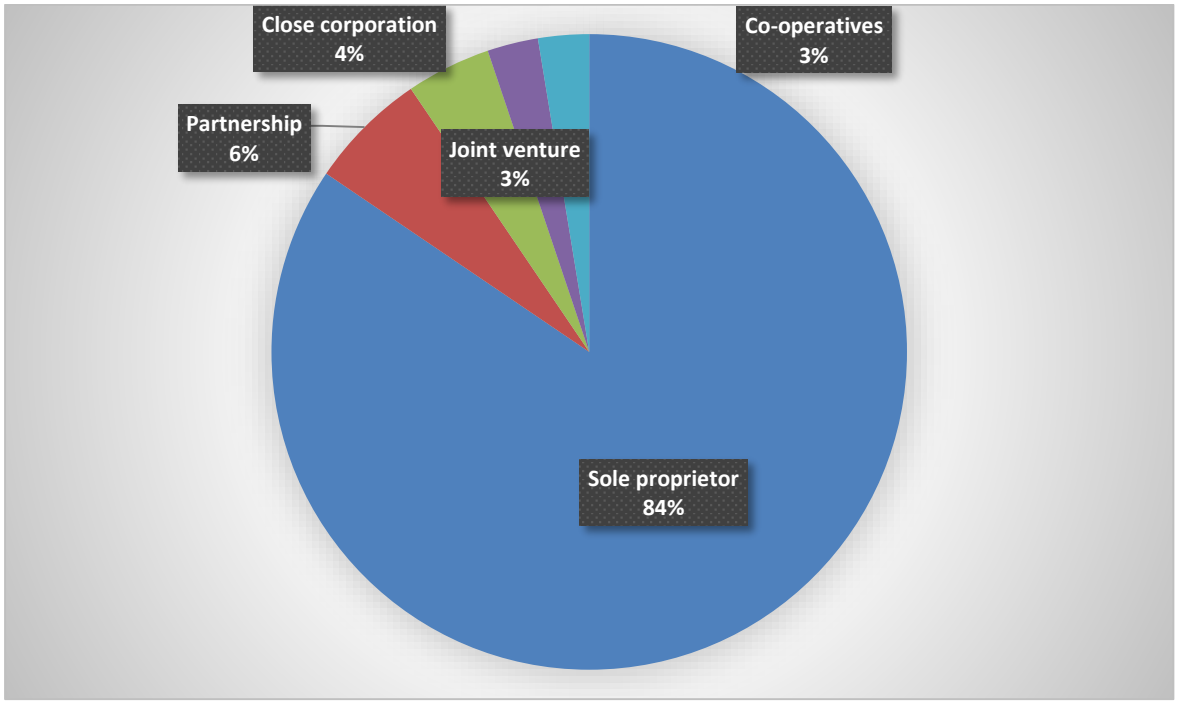


Figure 4.13: Forms of business organisation

Form of Business Organisation	Frequency	Percentage	
Sole Proprietorship	98	84	
Partnership	7	6	
Close corporation	5	4	
Joint Venture	3	3	
Co-operative	3	3	
Total	116	100	

Figure 4.13 shows that 98 (84%) majority of the respondents operate their businesses as sole proprietors, whereas the remaining 18 (16%) of them operate other forms of business organisation.

Overall Performance

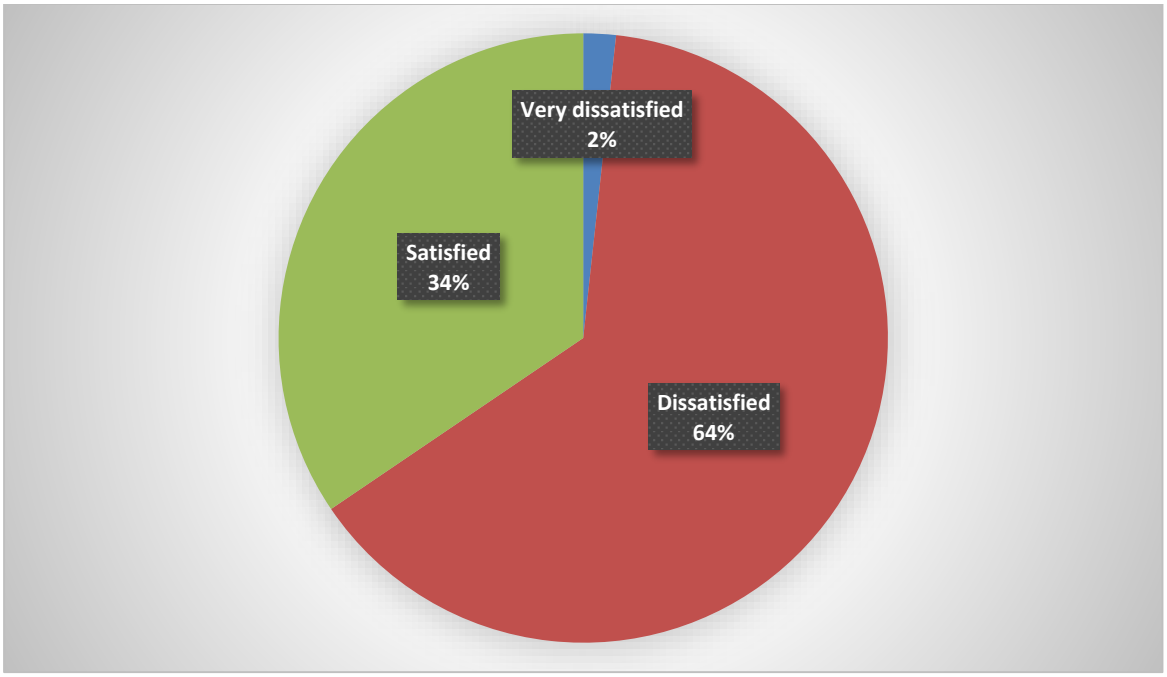


Figure 4.14: Data display on the overall performance of the enterprises

Overall Performance	Frequency	Percentage	
Satisfied	40	34	
Dissatisfied	74	64	
Very dissatisfied	2	2	
Total	116	100	

Figure 4.14 shows that 74 (64%) of the respondents are dissatisfied with the overall performance of their enterprises, whereas 40 (34%) are satisfied, while 2 (2%) are very dissatisfied. This corroborates with the results indicated in the performance indicators.

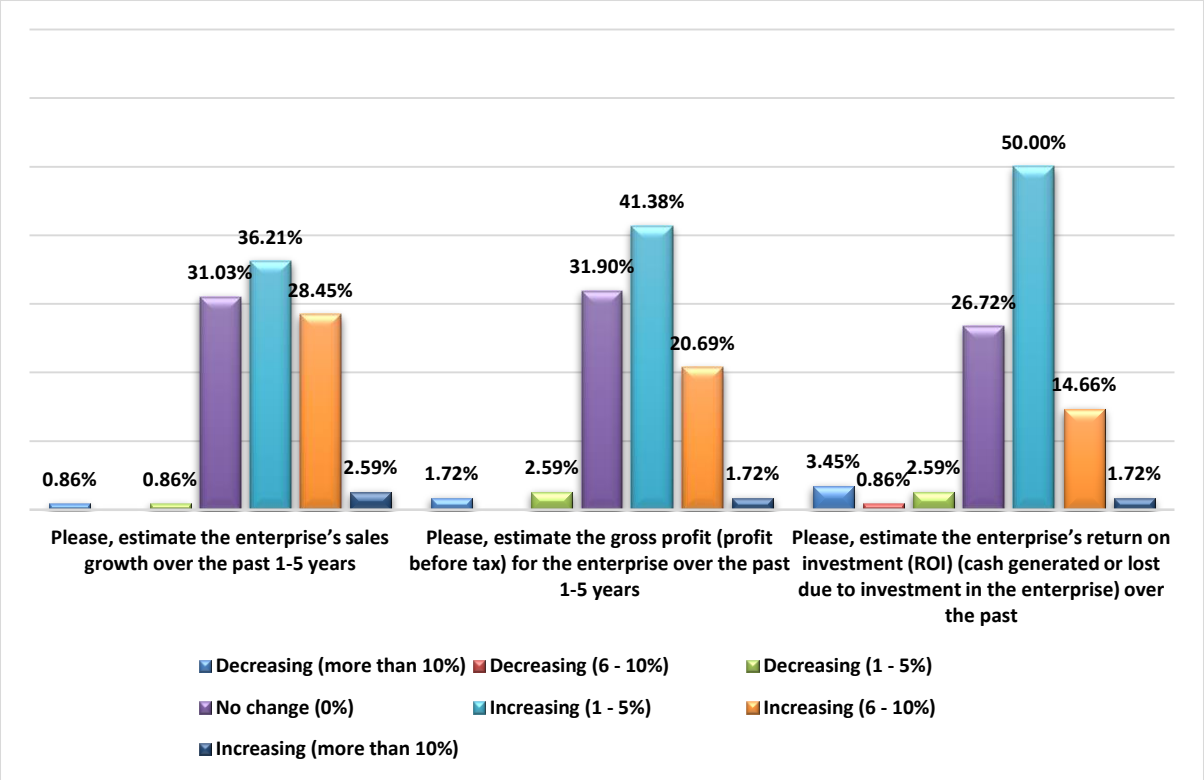


Figure 4.15: Firm performance and sustainability

In terms of performance and sustainability, figure 4.15 shows that though there appears to be increases, the percentage level (between 1-5%) was less than enough to guarantee sustainability amongst respondents; hence, the results in figure 4.15 above.

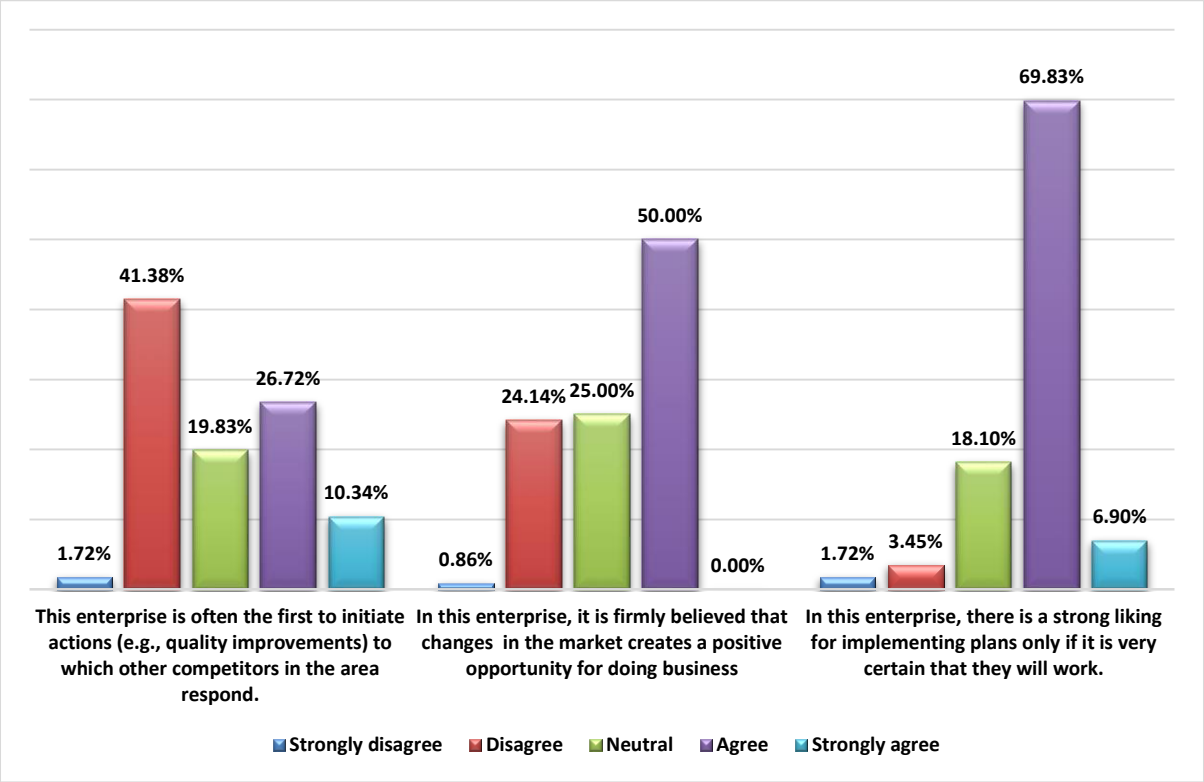


Figure 4.16: Innovation management activities

In terms of the level innovation amongst respondents, figure 4.16 shows that propensity for innovation is low, as many have a tendency to do things the same way even though they would prefer to do it otherwise.

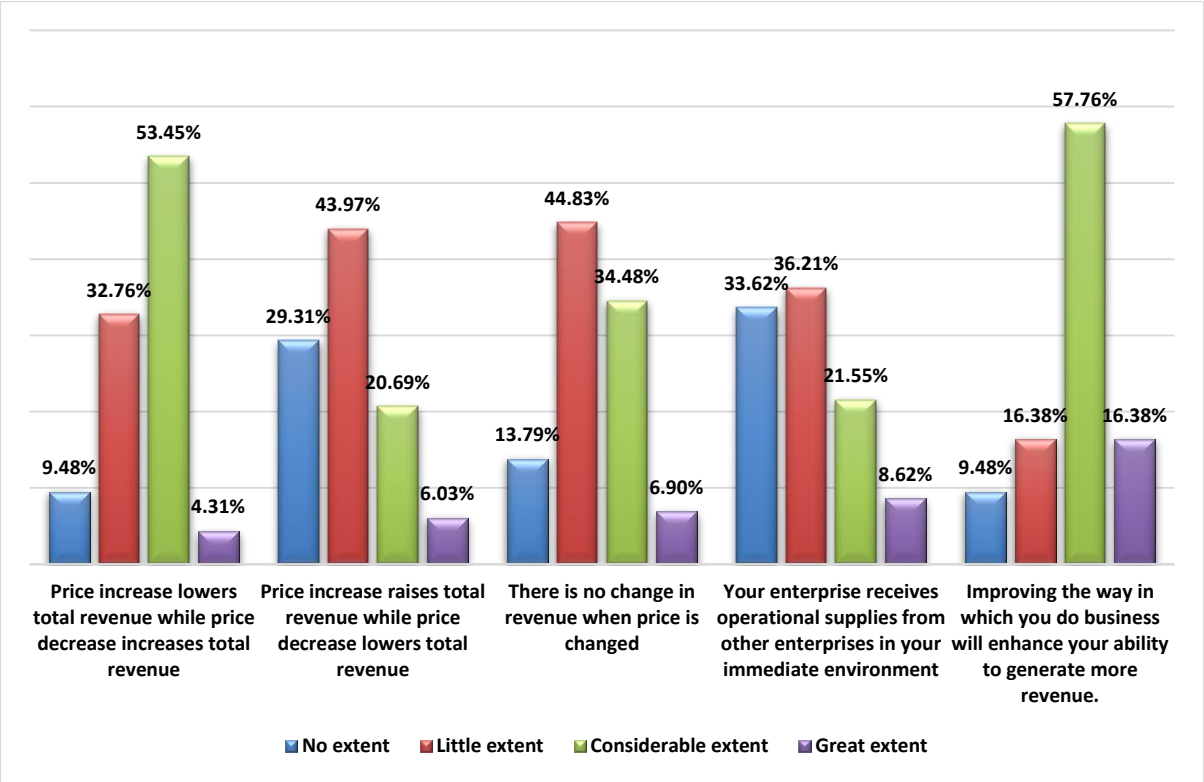


Figure 4.17: Marketing management activities in terms of pricing

Marketing management activity in terms of pricing is displayed in figure 4.17; the pricing data reveals the nature of price elasticity of demand for pigs. Changes in price have little effect on the demand and consequently on total revenue. Pricing was not considered a critical challenge facing the respondent.

Changing existing business models

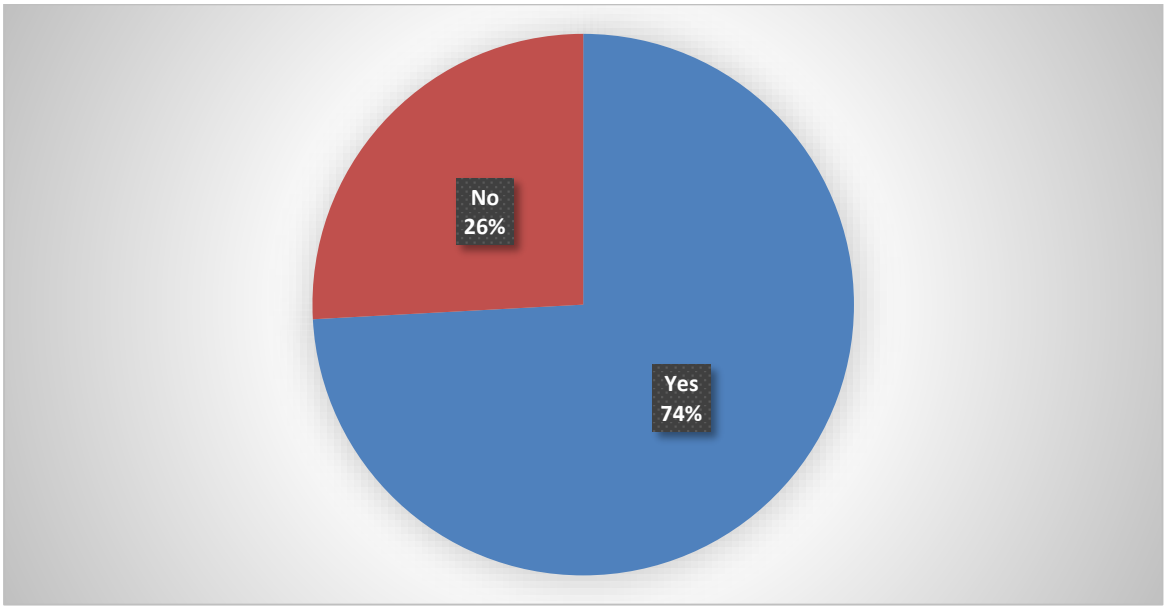


Figure 4.18: Data display on changing existing business models to maximize annual return on investment

Business Model Change	Frequency	Percentage	
Yes	86	74	
No	30	26	
Total	116	100	

Figure 4.18 shows the percentages of pig farming SMMEs regarding support for a change in existing business model in order to maximize annual return-on-investment for sustainability. Descriptive statistics was applied in addressing the question. The respondents were required to indicate YES or No. the majority of the respondents, 86 (74%), indicated YES in support for a change in existing business models, while 30 (26%) of the respondent indicated NO. The majority of respondents are thus in support of a change in existing business models in order to maximize annual return-on-investment for sustainability.

The next section presents the qualitative approach which is expected to address key aspects of the research questions. It gives a breakdown of the field responses from respondents during interview sessions. Results of this approach are expected to be useful during triangulation.

4.3 INTERVIEW DATA ANALYSIS

The task of summarising the mass of qualitative data gathered and presenting the results in a way that conveys the most important features requires a systematic and appropriate approach. This procedure of analysis involves the categorization and sub-categorisation of verbal data into themes, which are intended for classification, summarisation and tabulation (Hancock et al, 2009:24; Delport & Fouche as cited in De Vos 2005:354).

Responses to the semi-structured interview questions are summarised in this section. The respondents exhibit common attributes that align with various categories and themes in the interview questions.

4.4 QUALITATIVE DATA ANALYSIS

Interviews conducted were radio-taped and recorded by manually writing down notes with the permission of the respondents as they responded to the semi-structured questions. Thereafter, recorded data were transcribed and sequentially re-organised in a format that produces logic and relevance.

At this stage, the study was careful to have participants' qualitative text-based responses classified into simple categories which were assigned short labels that represented themes. A prepared worksheet was used in extracting data for a simple thematic coding analysis according to Trochim (2006:Internet).

For the purpose of determining and highlighting the major subjects and themes, transcripts were carefully revised. Themes were assigned specific codes as tabulated below:

Table 4.1: Theme codes for qualitative data analysis

Codes	Code meanings
Kbizf-F	Key business failure factor
Bmm-E	Business management model effects
Ops-S	Size of operation
Lf-Div	Livestock farming diversification
Bm	Business model
Mms	Marketing management strategy
ROI-I	Return-on-investment increase (annual)
ROI-D	Return-on-investment decrease (annual)
SMME	Small, Medium and Micro Enterprise
SUV	Survivalist venture
InDebt	Indebtedness

4.5 SUMMARY BREAKDOWN OF QUALITATIVE RESPONSES

The study could conclude categorically that the phenomena investigated represented a holistic perspective of the target population regarding the research questions and related assumptions. The responses are summarised in opinions indicated below:

- Opinion about key factors that lead to the sudden business failure syndrome amongst pig farming SMMEs in the Central Free State (N=28).

Data collected from respondents by means of interview approach on key factors that lead to sudden business failure are listed in table 4.1. All the respondents associated their business failures to the following key factors. Each of these factors as gleaned was the most occurring (mode) in the face-to-face interview responses.

Table 4.2: Key failure factors indicated by respondents in the interview approach

No.	Key failure factors	N=28	Percentage
01	Lack of education and training	15	54
02	Inadequate infrastructure	21	75
03	Lack of finance	26	93
04	Poor security of livestock	24	86
05	Personnel shortage	19	68
06	Poor marketing approach	17	61
07	Lack of own transport	13	46
08	Production cost inflation	10	36
09	Unfriendly climatic conditions	12	43
10	Outbreak of epidemics	5	18
11	Lack of technology	9	32
12	Poor management approach	23	82

- Opinion about existing management strategies and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State (N=28).

Altogether 22 (79%) respondents, who are in the majority, indicated that performance and sustainability decreased. They based it on existing management strategies, which have a significant association with sustainable enterprise performance. Therefore, there is consistency in terms of business management strategies and sustainable enterprise performance. A total of 23 (82%) respondents indicated a need to improve their management strategies in terms of planning and execution, which include outlining the concept of their strategic plans, forecasting the desired results, reviewing the business's current state, creating the action plan, implementing the plan and monitoring results.

- Opinion about enterprise size of operation and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State (N=28).

Factors attributed to size of operation was categorised. The results show that 24 (86%) are sole proprietors. It further shows that there was little or no difference between size

of categories and indebtedness of the pig farming SMMEs. The majority of respondents 23(82%) were of the opinion that their indebtedness has little to do with the fact that they are in the category of sole proprietorship.

- Opinion about enterprise diversification as well as indebtedness and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State (N=28).

Altogether 20 (71%) of the respondents indicated there is a strong link between indebtedness and sustainable enterprise performance. The same majority opinion shows that the diversification effect on sustainable enterprise performance was positive and yet, time-dependent.

- Opinion about existing marketing strategies and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State (N=28).

Data obtained from respondents show that the majority of respondents 26 (93%), indicated that existing marketing strategies have a strong influence on sustainable enterprise performance. The same majority do not consider South Africa's livestock market to be favourable to emerging producers. This could imply that the market is dominated by established, commercial enterprises. Distribution and pricing were identified as the major challenging aspect of marketing.

- Opinion about business models supported amongst pig farming SMMEs in the Central Free State in order to maximize sustainable enterprise performance (N=28).

The majority of respondents 25(89%) agreed that changing the current business model will enhance sustainable enterprise performance. The same respondents indicated that improvement in terms of governance and ownership structure is required and that they would prefer to do things differently.

- Opinion about enterprise current life cycle stage and indebtedness amongst pig farming SMMEs in the Central Free State (N=28).

Altogether 20 (71%) of the respondents are not indebted in business. However, all respondents (100%) indicated that their life cycle stage has no link with their indebtedness.

The next section presents tabulated information which are expected to address the research hypotheses and questions. The presentation displays results regarding the interaction between independent variables (predictors) and the dependent variable (sustainability variable).

4.6 TESTING HYPOTHESES

Testing Hypothesis One

Table 4.3 Interaction: Size of operation and sustainable enterprise performance (N=116)

Variables		Size category				Pearson Chi-Square	
		Survivalist	Small	Micro	Medium	Statistic	p-value
The enterprise's sales growth over the past 1-5 years	Decreasing + No change	27.8%	48.8%	14.3%	14.3%	8.640	0.034
	Increasing	72.2%	51.2%	85.7%	85.7%		
The gross profit (profit before tax) for the enterprise over the past 1-5 years	Decreasing + No change	29.6%	48.8%	28.6%	28.6%	4.348	0.226
	Increasing	70.4%	51.2%	71.4%	71.4%		
Enterprise's return on investment (ROI)	Decreasing + No change	24.1%	51.2%	21.4%	28.6%	8.908	0.031
	Increasing	75.9%	48.8%	78.6%	71.4%		

Based on the chi-square test of the association between size of operation and sustainable enterprise performance as shown in table 4.3, one can identify sales growth, gross profit (before tax) and return-on-investment over the past 1-5 years as critical variables. The p-value for enterprise's sales growth is 0.034 which is less than 0.1. This means that from the two-way frequency, there is a significant association between enterprise size of operation and sustainable enterprise performance with respect to sales growth over the past 1-5 years among respondents. The null hypothesis must thus be rejected.

The p-value for enterprise's gross profit (before tax) is 0.226, which is greater than 0.1. This means that from the two-way frequency, there is no significant association between enterprise size of operation and sustainable enterprise performance with respect to gross profit (before tax) over the past 1-5 years among respondents. The null hypothesis must therefore be accepted.

The p-value for enterprise's return-on-investment is 0.031, which is less than 0.1. This means that from the two-way frequency, there is a significant association between enterprise size of operation and sustainable enterprise performance with respect to return-on-investment over the past 1-5 years among respondents. The null hypothesis must thus be rejected.

Testing Hypothesis Two

Table 4.4: Interaction: Diversification as well as indebtedness and sustainable enterprise performance (N=116)

Variables		Enterprise's return on investment (ROI)		Pearson Chi-Square	
		Decreasing + No change	Increasing	Statistic	p-value
Did enterprise diversification improve your annual return-on-investment in the subsequent years?	**Yes**	25.6%	74.4%	14.206	0.000
	No	73.1%	26.9%		
Is your enterprise currently indebted?	**Yes**	8.3%	91.7%	8.370	0.004
	No	39.6%	60.4%		
Have you encountered any debt obligation default in the last 1 year?	**Yes**	16.7%	83.3%	3.898	0.048
	No	38.0%	62.0%		

Table 4.4 above shows the chi-square test of the association between enterprise diversification as well as indebtedness and sustainable enterprise performance. The p-value for enterprise diversification is 0.000 which is less than 0.1. This means that from the two-way frequency, there is a significant association between enterprise diversification and sustainable enterprise performance among respondents. The null hypothesis must therefore be rejected.

The p-value for enterprise indebtedness is 0.004, which is less than 0.1. This means that from the two-way frequency, there is a significant association between enterprise

indebtedness and enterprise sustainable enterprise performance among respondents. The null hypothesis must therefore be rejected.

Testing Hypothesis Three

Table 4.5: Interaction: Existing marketing strategies and sustainable enterprise performance (N=116)

Variables		Enterprise's return on investment (ROI)		Pearson Chi-Square	
		Decreasing + No change	Increasing	Statistic	p-value
Do you market your product directly to end users?	Yes	16.3%	83.8%	37.071	0.000
	No	75.8%	24.2%		
	Other	33.3%	66.7%		
Which of the following channels of distribution is most related to your marketing activities?	Wholesalers	66.7%	33.3%	12.075	0.007
	Retailers	18.8%	81.3%		
	Farmers market	34.8%	65.2%		
	Food processing firm	0.0%	100.0%		

Table 4.5 shows the chi-square test of the association between existing marketing strategies and sustainable enterprise performance. One can identify direct marketing to end users, and channels of distribution as critical variables. The p-value for direct marketing to end users is 0.000 which is less than 0.1. This means that from the two-way frequency, there is a significant association between direct marketing to end users and sustainable enterprise performance with respect to marketing strategies among respondents. The null hypothesis must therefore be rejected. Direct marketing to end-users appears to be a more effective marketing approach to the study populations than other options.

The p-value for channels of distribution is 0.007, which is less than 0.1. This means that from the two-way frequency, there is a significant association between channels of distribution and sustainable enterprise performance among respondents. The null hypothesis must therefore be rejected. By implication, the study population considers existing channels of distribution to be effective in advancing their marketing objectives.

Testing Hypothesis Four

Table 4.6: Interaction: Increasing the number of partners and sustainable enterprise performance (N=116)

Variables		Enterprise's return on investment (ROI)		Pearson Chi-Square	
		Decreasing + No change	Increasing	Statistic	p-value
Increasing the number of partners of your enterprise will improve your return-on-investment	Strongly disagree	50.0%	50.0%	7.783	0.100
	Disagree	36.2%	63.8%		
	Neutral	35.0%	65.0%		
	Agree	25.0%	75.0%		
	Strongly agree	100.0%	0.0%		

The above table 4.6 displays the chi-square test of the association between increasing the number of partners of the enterprise and sustainable enterprise performance. The p-value for increasing partners of the enterprise is 0.100 which is equal to 0.1. This means that from the two-way frequency, there is a significant association between increasing partners of the enterprise and sustainable enterprise performance among respondents. The null hypothesis must therefore be rejected.

Testing Hypothesis Five

Table 4.7: Interaction: Use of services of government Agricultural Extension Officers and sustainable enterprise performance (N=116)

Enterprise receives the services of the agricultural extension programme	1	2	3	4	Pearson Chi-Square	
	Sales have been increasing significantly				Statistic	p-value
Yes	47.5%	5.9%	17.8%	28.7%	16.212	0.001
No	11.1%	44.4%	11.1%	33.3%		
	Cash flow has been increasing significantly				Statistic	p-value
Yes	44.3%	12.3%	27.4%	16.0%	7.011	0.072
No	33.3%	44.4%	11.1%	11.1%		
	Profitability has been increasing significantly				Statistic	p-value
Yes	38.5%	13.5%	27.9%	20.2%	12.114	0.017
No	44.4%	11.1%	22.2%	11.1%		

Table 4.7.1

Enterprise receives the services of the agricultural extension programme	Enterprise's return on investment (ROI)	
	Decreasing + No change	Increasing
Yes	31.8%	68.2%
No	55.6%	44.4%

Based on the chi-square test of the association between receiving services of government agricultural extension officers and sustainable enterprise performance, one can identify significant conditions of sales, cash flow and profitability as critical component variables in tables 4.7 and 4.7.1 above. The p-value for receiving services of government agricultural extension officers with respect to all critical variables is less than 0.1. This means that from the two-way frequency, there is a significant association between receiving services of government agricultural extension officers and sustainable enterprise performance among respondents. The null hypothesis must thus be rejected.

Testing Hypothesis Six

Table 4.8: Interaction: Innovation management activities and sustainable enterprise performance (N=116)

Enterprise supports individuals or teams that work on their own without close supervision	Enterprise's return on investment (ROI)		Pearson Chi-Square	
	Decreasing + No change	Increasing	Statistic	p-value
Strongly disagree	75.0%	25.0%	12.651	0.013
Disagree	23.3%	76.7%		
Neutral	47.1%	52.9%		
Agree	22.7%	77.3%		
Strongly agree	75.0%	25.0%		

Table 4.8.1

Employees are not compelled to strictly adhere to laid down procedures in doing their tasks	Enterprise's return on investment (ROI)		Pearson Chi-Square	
	Decreasing + No change	Increasing	Statistic	p-value
Strongly disagree	75.0%	25.0%	17.756	0.001
Disagree	36.7%	63.3%		
Neutral	52.9%	47.1%		
Agree	11.9%	88.1%		
Strongly agree	33.3%	66.7%		

Table 4.8.2

Enterprise encourages individuals to think of ways of solving problems on their own	Enterprise's return on investment (ROI)		Pearson Chi-Square	
	Decreasing + No change	Increasing	Statistic	p-value
Strongly disagree	100.0%	0.0%	36.145	0.000
Disagree	17.6%	82.4%		
Neutral	80.0%	20.0%		
Agree	17.9%	82.1%		
Strongly agree	50.0%	50.0%		

Table 4.8.3

Strong liking for implementing plans only if it is very certain that they will work	Enterprise's return on investment (ROI)		Pearson Chi-Square	
	Decreasing + No change	Increasing	Statistic	p-value
Strongly disagree	50.0%	50.0%	27.301	0.000
Disagree	25.0%	75.0%		
Neutral	81.0%	19.0%		
Agree	21.0%	79.0%		
Strongly agree	37.5%	62.5%		

Tables 4.8, 4.8.1, 4.8.2 and 4.8.3 show the Chi-square test of the association between innovation management activities and sustainable enterprise performance. All p-values for the critical component variables of innovation management activities are less than 0.1. This means that from the two-way frequency, there is a significant association between innovation management activities and sustainable enterprise performance among respondents. The null hypothesis must therefore be rejected.

Testing Hypothesis Seven

Table 4.9: Size categories and enterprise current indebtedness

Size categories	Is your enterprise currently indebted		Pearson Chi-Square	
	Yes	No	Statistic	p-value
Survivalist	22.2%	77.8%	1.973	0.578
Small	22.5%	77.5%		
Micro	21.4%	78.6%		
Medium	0.0%	100.0%		

The Chi-square test of the association between size categories and enterprise indebtedness is displayed in table 4.9. The p-value for size categories is 0.578 which is greater than 0.1. This means that from the two-way frequency, there is no significant association between size categories and enterprise indebtedness amongst respondents. The null hypothesis must therefore be accepted.

Table 4.10: Form of a business organization and enterprise current indebtedness

Form of a business organisation	Is your enterprise currently indebted		Pearson Chi-Square	
	Yes	No	Statistic	p-value
Sole proprietor	23.5%	76.5%	3.568	0.468
Partnership	0.0%	100.0%		
Close corporation	20.0%	80.0%		
Joint venture	0.0%	100.0%		
Co-operatives	0.0%	100.0%		

The chi-square test of the association between form of a business organisation and enterprise current indebtedness is displayed in table 4.10. The p-value for form of a business organisation is 0.468, which is greater than 0.1. This means that from the two-way frequency, there is no significant association between form of a business organisation and enterprise current indebtedness amongst respondents. The null hypothesis must therefore be accepted.

Table 4.11: Current life cycle stage and enterprises currently indebted

Your enterprise current life cycle stage of operation	Is your enterprise currently indebted		Pearson Chi-Square	
	Yes	No	Statistic	p-value
Introductory stage	18.2%	81.8%	3.891	0.273
Growth stage	26.2%	73.8%		
Maturity stage	0.0%	100.0%		
Declining stage	0.0%	100.0%		

The chi-square test of the association between current life cycle stage and enterprises currently indebted is displayed in table 4.11. The p-value for current life cycle stage is 0.273, which is greater than 0.1. This means that from the two-way frequency, there is no significant association between current life cycle stage and enterprises currently indebted amongst respondents, therefor, the null hypothesis must thus be accepted.

Table 4.12: Key failure factors indicated by respondents in the questionnaire approach

No.	Key failure factors	N=116	Percentage
01	Lack of education and training	48	41.4
02	Inadequate infrastructure	69	60
03	Lack of finance	72	62
04	Poor security of livestock	92	79
05	Personnel shortage	63	54
06	Poor marketing approach	65	56
07	Lack of own transport	41	35
08	Production cost inflation	19	16
09	Unfriendly climatic conditions	29	25
10	Outbreak of epidemics	10	9
11	Lack of technology	10	9
12	Poor management approach	27	23

Through the questionnaire approach data regarding the key factors responsible for the failure of pig farming businesses amongst the respondents were gathered as displayed in table 4.12. The table shows the number of respondents that indicated every key failure factor and their corresponding percentages. 92(79%) respondents

who are in the majority indicated that the security of livestock was the most challenge facing their business operations. These type of theft were shown to be communal theft of livestock. It seems to be aggravated by the lack of adequate security facility and the far distance location of the farm operations. Outbreak of epidemics and lack of technology were indicated to rank the least among the key factors causing business failure amongst the study population.

4.7 EVALAUATION OF TEST RESULTS OF HYPOTHESES

This section attempts to provide a brief evaluation of the foregoing tests of hypotheses in order to describe and determine the state of business performance and sustainability amongst the respondents. The intention of this test exercise is in view of a business model for a sustainable SMME pig farming in the Central Free State of South Africa. An empirical survey as well as literature review tested the following nine null hypotheses. The tests of null hypotheses indicated varying results; some were found to be less or greater than the statistical significant level of 0.1, thus implying acceptance or rejection of the respective null hypotheses:

***H0*$_1$:** There is no significant association between enterprise size of operation and sustainable enterprise performance amongst the pig farming SMMEs in the Central Free State.

The result of the above null hypothesis with regards to size of operation was obtained. In terms of sales growth over the past 1-5 years, it shows that there is a significant association between size of operation and sustainable enterprise performance. The conclusion was supported by findings from interviews. Therefore, the null hypothesis was rejected.

Regarding size of operation in terms of enterprise's gross profit (before tax) over the past 1-5 years, the result shows that there is no significant association between size of operation and sustainable enterprise performance. The conclusion was supported by findings from interviews. Therefore, the null hypothesis was accepted.

In terms of return on investment regarding size of operation, the result shows that there is a significant association between enterprise size of operation and sustainable enterprise performance. The conclusion was supported by findings from interviews. Therefore, the null hypothesis was rejected.

***H0*$_2$: There is no significant association between enterprise diversification as well as enterprise indebtedness and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State.

The result of the above null hypothesis with regards to enterprise diversification was obtained. It shows that there is a significant association between enterprise diversification and sustainable enterprise performance. The conclusion was supported by findings from interviews. Therefore, the null hypothesis was rejected.

Regarding enterprise indebtedness, the result shows that there is a significant association between enterprise indebtedness and sustainable enterprise performance. The conclusion was supported by findings from interviews. Therefore, the null hypothesis was rejected.

***H0*$_3$: There is no significant association between existing marketing strategies and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State.

The result of the above null hypothesis with regards to existing marketing strategies was obtained. It shows that in terms of direct marketing to end users and channels of distribution in relation to marketing activities, there is a significant association between existing marketing strategies and sustainable enterprise performance. The conclusion was supported by findings from interviews. Therefore, the null hypothesis was rejected.

***H0*$_4$: There is no significant association between increasing partners of the business and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State.

The result of the above null hypothesis with regards to increasing partners of the business was obtained. It shows that there is a significant association between increasing partners of the business and sustainable enterprise performance. The conclusion was supported by findings from interviews. Therefore, the null hypothesis was rejected.

***H0*$_5$: There is no significant association between the use of services of government Agricultural Extension Officers and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State.

The result of the above null hypothesis with regards to receiving services of government agricultural extension officers was obtained. It shows that in terms of significant conditions of sales, cash flow and profitability, which were considered as critical variables, there is a significant association between receiving services of government extension officers and sustainable enterprise performance. The conclusion was supported by findings from interviews. Therefore, the null hypothesis was rejected.

***H0*$_6$: There is no significant association between innovation management activities and sustainable enterprise performance amongst pig farming SMMEs in the Central Free State.

The result of the above null hypothesis with regards to innovation management activities was obtained. It shows that there is a significant association between innovation management activities and sustainable enterprise performance. The conclusion was supported by findings from interviews. Therefore, the null hypothesis was rejected.

***H0*$_7$: There is no significant association between size categories and enterprise indebtedness amongst pig farming SMMEs in the Central Free State.

The result of the above null hypothesis with regards to size categories was obtained. It shows that there is no significant association between enterprise size categories and

enterprise indebtedness. The conclusion was supported by findings from interviews. Therefore, the null hypothesis was accepted.

***H0*$_8$:** There is no significant association between form of a business organization and enterprise current indebtedness amongst pig farming SMMEs in the Central Free State.

The result of the above null hypothesis with regards to form of business organisation was obtained. It shows that there is no significant association between form of business organisation and enterprise current indebtedness. The conclusion was supported by findings from interviews. Therefore, the null hypothesis was accepted.

***H0*$_9$:** There is no significant association between current life cycle stage and enterprises currently indebted amongst pig farming SMMEs in the Central Free State.

The result of the above null hypothesis with regards to enterprise current life cycle stage was obtained. It shows that there is no significant association between current life cycle stage and enterprises currently indebted. The conclusion was supported by findings from interviews. Therefore, the null hypothesis was accepted.

4.8 SUMMARY

In this chapter, attempts were made to present collected data and ensure they are validated for analysis. It involves the interpretation of both quantitative and qualitative results in a sequential and complementary format. In the qualitative approach, the results were presented with a consideration that the data were subjective, interpretative, descriptive, and ample. Responses were transcribed and converted into descriptive categories using short labels represented in coded themes. The qualitative analysis simply adopted a thematic coding analysis according to Trochim (2006:Internet).

In the quantitative approach, the results were presented in a format that proved to be objective. Inferential statistics was applied in making judgements. For the purpose of statistical analyses, the approach took the form of data tabulation whereby frequency distribution and percentage distribution was applied. This was complemented by

descriptive data and disaggregation in determining whether or not data supported the stated hypotheses and to reach conclusions that extend beyond the immediate observations.

Implications following opinions shared by respondents based on results were provided. This was done for every predictor variable in the research questions. Sustainable enterprise Performance was collectively used as the overriding dependent variable in the study, thereby assuming the status of a grand attribute for most dependent variables. The independent variables in some hypotheses were subordinated, whereas others have sub-critical variables yielding different p-values in the two-way tests. However, their unilateral results contributed to some unanimous judgements and conclusions.

The Pearson Chi-square test was applied as the inferential statistics used to determine the significance of association between 2 categorical variables, of which 9 main and 4 sub-null hypotheses were judged based on the p-value approach. A uniform smaller p-value of 0.1 was used as a statistical significance, implying a stronger evidence in favour of the alternative hypotheses. Consequently, the results showed that 9 hypotheses were rejected and 4 hypotheses were accepted.

CHAPTER 5

MAIN FINDINGS, CONCLUSIONS AND RECOMMENDATION

5.1 INTRODUCTION

Investigations in research are aimed at achieving some findings. This chapter systematically presents a number of findings derived from its various components as touching key aspects of the research questions and hypotheses. These findings justify the extent to which the objectives set out in chapter 1 proceed in addressing the development of a business model. It further substantiates problems associated with performance and sustainability amongst pig farming SMMEs in the Central Free State Province. In Chapter 1, a conceptual business model for pig farming SMMEs was proposed and was used as a sample in conceiving the basics of the parameters for the development of our business model. The findings account for the outcomes of arguments in the literature, research design, and data results. Specifically, the findings derived are based on literature findings, quantitative findings and qualitative findings.

Concluding remarks of the study are provided in this chapter, and this chapter provided ample avenue in harmonising various theoretical strands identified in the model parameters which constitute variables in the hypotheses. Finally, recommendations are provided.

5.2 FINDINGS FROM THE LITERATURE STUDY

Findings in the literature revealed that there exists an insufficient literature on business models of cooperative organisations in the South African context. Most of the literature rather focused on the types of cooperatives as a result of which much information from literature was sourced from other context in support of the subject. Business model literature were also less sufficient with respect to examples of business models; most of the literature on business model were found to be more descriptive with less than sufficient examples. However, in the agricultural field, most of the literature on

business models were generic, requiring the study to turn over to hybrids for more inclusive models for sustainable livestock business. This attempt connected the literature to the link between the subject of business model innovation and technology innovation. Technology innovation literature amongst the study population was scarce, as was business model innovation. This concept was supported by empirical research investigation to understand the extent to which participating respondents fair in terms of technology adaptations.

The concept of sustainability was a robust debate in literature. The review found inconsistencies in linking business model sustainability and business sustainability. In as much as sustainability is a noble target, according to findings from literature, its realization in business model innovation seems illusory, or rather, *a priori*. This concept, as illustrated and amplified in emerging strategy literature, signifies an instrument or antidote for competition in the industry. In retrospect, strategic management views a business model as a subset, which is guided by a set of principles and fundamentals, influencing firms to develop defensive positions against the forces of competition and power (Chesbrough & Appleyard, 2007:57). The traditional view of strategic management, with respect to the firm in the industry, contradicts the thinking that a business model has all the attributes required to resist frustrating threats from model competitions in the emerging environment. This is a conceptual aspect of business model sustainability that this study rethinks.

At the end of its life cycle, a business is either lost to the dynamic forces of competition or it re-emerges for the benefit of society. In other words, a business may be survived by society, as well as competitors upon its collapse.

In this context, sustainability may be viewed from a system perspective rather than from some sort of an entity containment perspective; that is, entity actions capable of generating, preserving and sustaining its resource capabilities. Obviously, this perspective seems likely to avert from other natural principles, especially, those connected to business ecosystem, etc. the assumption here is that business models are often necessitated by technological innovation, inducing a market breakthrough and advancing customer value network (Teece, 2010:184).

In terms of having a more pragmatic measure of sustainability amongst the study population, the concept of sustainability was calibrated and operationalized by the use of return-on-investment, indebtedness, profitability, cash flow, life cycle stage of operation, sales turnover, market share situation, etc. as a measure of performance to justify sustainability. Literature on sustainability was broader, addressing a wide range of fields having more to do with sustainable development. The concept of sustainability seems to have found a route into the field of business management through the subject of finance.

In the literature review it was found that factors responsible for the sudden failure of pig farming SMMEs were not exhaustive compared to those in the empirical survey. However, findings from the empirical survey revealed some other environmental constraints. The entrepreneurial environment was found to provide some critical factors regarding those that are less controllable and non-managerial, requiring external interventions from relevant regulatory authorities.

Contrary to literature, the majority of the SMMEs pig farmers covered in the empirical survey were yet to fully embrace and leverage the opportunities in the livestock value chain, as their existing business models show. Literature reveals the opportunities that abound in the value chain for business performance and sustainability; such opportunities allow for more collaborations in marketing, production operations and human resources. Market synergy was found in the literature to be a key success factor for livestock business sustainability; this is a situation whereby the intensity of a multiple channel is embraced.

Findings regarding the commonage cooperative model revealed major modification based on the proposed model in chapter 1. The new model took a different design, incorporating new parameters. The concept that the model in itself is designed to remain sustainable was a key component, which was left silent due to the emerging debate as aforementioned in this chapter on business model sustainability.

Literature findings on the concept of diversification amongst SMME pig farmers were less sufficient. Diversification was found to be a widely researched concept in other fields of business study. Its literature was abundant in the field of finance. Literature

on diversification in the field of business management with respect to agriculture was a handful, having to do less with farming businesses than agriculture. The concept produced a robust debate in literature amongst researchers; there was a bold line of division amongst scholars with respect to gains accruable to firms due to diversification attempts. Findings in literature were compared to empirical results for conclusions.

In Chapter 1, the research question established a connection between the concepts of diversification and firm life cycle amongst the study population. It was believed that diversification decisions do originate at a given firm life cycle stage in a less uniform pattern. A literature review attempt was made to identify at what stage diversification decisions were more imminent. This was found to be beyond the introductory stage of the firm's business life cycle. However, literature findings indicated that there was no conclusion in terms of any agreement over the number of life cycle stages of firm's and businesses.

Factors that lead to sudden business failure amongst the study population were encapsulated in the literature review. Most of the factors were presented in a more general perspective covering the entire livestock sector and were found to vary amongst scholars due to differences in sample demographics. The same variation was identified in the empirical research finding amongst the study population, whereby factors which appears to be threats to some respondent, on the other hand, became opportunities to others.

5.3 EMPIRICAL FINDINGS

This section was developed with valuable information that were generated from the qualitative and quantitative primary data from the study population. It serves as a unified confirmation of the research questions and hypotheses established in the study. These findings demonstrate empirical evidence required for the acceptance or rejection of the hypotheses.

5.3.1 Findings on questionnaire: entrepreneurial demographic data

Evidence generated from questionnaire survey show that the majority of the pig farming SMMEs are managed by committed owners or personnel who are mostly relatives and are informally employed in the firms under study. Same majority are indicated to be males. The reason for this result could be attributed to the traditional assumption that men are more suitable to provide the kind of physical strength required in piggery operations. This assumption is yet to be justified with evidence in future research. The majority of the respondents found in the SMME pig farming operation either as owners or managers were within the age range of 46-55 (42%). The least age category is below 35 years of age as the findings show, indicating younger people are less likely to venture into the pig farming business.

In terms of ethnic origin or race of the study population, more black South Africans are in the majority (99%). The sample demographics allows for a black population of emerging SMMEs who are yet to be commercially established. A fair majority of the study population, about 66%, are within the educational status of primary and high school. This reveals the reason for the dearth of functional skills in most of the operations. It calls for the need for more dependence on the services of extension officers of the provincial Department of Agriculture and Rural Development for periodic support interventions and mentorship. The same applied to findings in respect of business training possessed by these entrepreneurs, whereby it was revealed that the majority (79%) received business training through short courses, possibly from the training provided by relevant government departments. The interview session revealed that their exposure to business training was more theoretical than practical, most of which came formally from high school level and in the course of the venture.

Evidence-based findings on entrepreneurship training revealed that majority (79%) of the study population acquired this training through short courses provided by the Department of Agriculture, and in most cases these courses were found to be facilitated by the extension officers. Size definition was based on the Department of Trade and Industry SMME size categorization. The categorization included the concept of survivalist, which generally categorized size into survivalist, micro, medium and small enterprises. Each of the categories having a set of unique attributes. Apart

from these statutory definition of SMME by size, the study operationalised the concept by adjusting other variables such as number of livestock, personnel, sales revenue, farm size, etc.

Findings on the number of livestock was rather appalling. The study found that the number of available livestock amongst these SMME was below expectation, as majority (96%) of them had fewer than fifty pigs; which could imply that there was a production crisis amongst them. On the finding regarding the number of persons in the workforce, it was discovered that the majority of the SMMEs in the study population (96%) are struggling with inadequate workforce, which was generally between an annual averages of 1-5 persons. This finding may justify the reason for the smallness in size of operation. The number of years of farming operation was used as a component factor in evaluating the extent of sustainability. The finding revealed that 78% of respondents were less than 5 years in the piggery business. This goes to imply that there is a short life cycle in the sector and that the majority (92%) of them are between their introductory and growth stage of life cycle. It needs to be kept in mind, though, that the study population is all about emerging SMMEs in the Free State province.

The majority (84%) of the study population were found to be operating their businesses as sole proprietors and wished to be formed as cooperatives if given the opportunities. In terms of indebtedness, the majority of them were not indebted as a direct result of business. This could imply that the stakes are not high in terms of competition and innovation. However, some of them indicated to have received some form of external support, such as finance from government and other private individuals. The use of the extension officers of the Department of Agriculture for guardianship and mentorship is such a programme which they widely embrace, as they reveal no membership of any trade body.

5.3.2 Findings on marketing management activities

Marketing was found to be one of the key challenges facing the study population of pig farming SMMEs. The agricultural produce market was found to be organized and yet developing, with some measure of regulation. According to the findings, the

livestock market system appeared to favour the established businesses for livestock, especially those in piggery. The end-users marketing of pigs was found to be a major approach applied by the majority of enterprises in the study population. Three major categories of sales outlets were identified in the findings amongst the population, namely, wholesalers, retailers, farmers market; others are food processing firms, and specialist food stores. According to the finding, the farmers' market seemed to be the most favourite market destination for the pig farming SMMEs, as sales transaction in these places could allow for 'producer to producers' and 'producer to consumers' or other intermediaries. Empirical data indicate that the majority of the study population market directly to end-users.

The majority of the population were in agreement with the findings that key challenges confronting them are controllable, operating cost was increasingly uncontrollable, government policies and compliance requirements are favourable to them, and that adding or increasing the number of business partners would improve management capabilities. On the other hand, the majority are however not in agreement that their production targets are often achievable. The majority of them were neutral regarding whether adding or increasing the number of partners would improve return-on-investment.

In terms of pricing, the study examined the price elasticity of demand (PED) for pigs. Price elasticity of demand is a measure of the sensitive relationship between a change in the quantity demanded of pigs and a change in its price (% change in quantity demanded ÷ % change in price). The empirical findings showed that it was relatively inelastic ($-1 < E_d < 0$), indicating that demand for pigs and pig bye-products does not change relative to price changes. Nevertheless, when the price is increased, the total revenue increases, and vice versa.

In the majority of cases, little or no competition existed amongst the study population, but in terms the market for meet, interview data disclosed that it is an imperfect market in most scenarios. The market was found to be highly dominated by a strong link between an established network of producers and established network of sellers, which seems to threaten the prospect of the pig farming SMMEs.

5.3.3 Findings on innovation management activities

Based on the findings on the absence of competition amongst the study population, there is a tendency that innovation activities are less. The majority of the respondents indicated that they mimic the management actions of others when faced with a management crisis. It was neutral responses amongst the majority of them when asked whether changes in markets create a positive opportunity for doing business. This could imply that there might scarcely be changes in market, as the stakes are usually low; in order words, implying that neither positive nor negative opportunities could result from changes in the market. The majority of them indicated that they were in agreement that there is a strong liking for implementing plans only if it is very certain that they would work, as well as encouraging personnel to think of ways of solving problems on their own. The majority of them are in agreement that employees were compelled to strictly adhere to laid down procedures in doing their tasks. The majority of the responses were neutral regarding question as to whether their enterprises support individuals or teams that work on their own without close supervision.

5.3.4 Findings on performance and sustainability

A number of variables were used in calibrating performance, which was considered in defining the sustainability of the pig farming SMMEs. These variables were financially related and consisted of return-on-investment, sale turnover per unit, revenue, cash flow, profitability, sales growth, and gross profit (before tax) over the past five years. They describe financial improvement achieved by the study population, apart from other performance measures applied in the study. The majority of the respondents indicated a less than five percent increase in the sum of all the variables over the past five years. Another finding was that the majority indicated that the most priority in their enterprise objectives was to increase cash flow. From interview it was found that cash flow crisis was a critical challenge to the majority of them, as it impacted on the working capital (WC) and over time this could result in operational inefficiency. Working capital is considered a part of operating capital; it is calculated as current assets minus current liabilities.

A majority of the study population indicated a less than five workers in the number of employees over the past five years. In another finding, over the past five years the decline in the number of employees was indicated to be less than five by another majority of the study population. Another finding show that a key source of revenue was found to be through sales of pigs as indicated by majority. Active cost factors for the majority of them were found to be mostly related to working capital items.

5.3.5 Findings on agricultural background of the Free State

Literature on the Free State agricultural background centred on a number of features that attributes to the present disposition. The natural endowment of the province with respect to agriculture was considered as the basis for the progress recorded in the present dispensation. Findings from literature revealed that the province has adapted from series of national agricultural policy evolution from one political era to another. Government agricultural policies have received influences from internal and external pressures. Consequently, these pressures have shaped the agricultural system in South Africa.

Literature revealed that these policies are strongly linked with the rural economic development policies. Findings showed that agricultural policies in South Africa in the post-apartheid era became more people oriented. These emerging policies in doubt had to strategically redress the imbalances created by the apartheid era. The most target of recent policy directions was found to be more focused on local economic development than ever before. Furthermore, it was found that agricultural policy implementation strategy of government was based on policy interventions and instruments aimed at strengthening the factor market, as well as stimulating the output market in the agricultural sector of the economy.

It was revealed in literature that agricultural entrepreneurship development suffered a huge setback prior to the new democratic era. Findings also showed that agricultural policies of the government needed to lay more emphasis on driving profitability amongst pig farming SMMEs. Nevertheless, this finding applied to the entire livestock sector as well, as most of the policy statements were found to be welfare orientated.

5.3.6 Findings on research questions

Research question one

What are the key factors that lead to the sudden business failure syndrome amongst pig farming SMMEs in the Central Free State?

Both quantitative and qualitative data collected from respondents on key factors that lead to sudden business failure are listed in table 4.29 in Chapter 5. All (100%) of the respondents associated their business failures with the key factors. Each of these factors as gleaned was the most occurring (mode) in the responses.

Findings identified the lack of education and training as one of key factors that lead to the sudden business failure syndrome amongst pig farming SMMEs in the Central Free State. Based on the quantitative data, the study examined the most current challenges that are preventing these enterprises from achieving their revenue targets, and major factors that negatively influence pig farming business performance amongst the study population. On the other hand, likewise, the interview revealed the lack of education and training on key aspects such as breeds, breeding, feeding, housing management, disease and parasites, reproduction and reproduction disorders and diseases. This could imply that the absence of knowledge in the field may be a disaster, since livestock are involved. In terms of infrastructure, it was revealed that the majority of them relied more on the commonage facilities that were provided by the provincial government. These infrastructures were inadequate for all to use. Water shortage was identified to be one of the major challenges; pig pens were poorly constructed.

Another finding regarding key factors that lead to the sudden business failure syndrome amongst pig farming SMMEs in the Central Free State was lack of finance. The majority of them indicated that this factor could bring the business to a standstill in the absence of a rescue. Theft of livestock and moveable infrastructure remains a threat to the majority of them according to findings. Due to this challenge, many of them lack the courage to invest and expand livestock and infrastructure beyond certain levels pending when security improves. Personnel shortage was another key factor

found. The majority of them lacked the adequate number of workforce. This was attributed to finance, as many relied on close relatives for occasional labour support.

In terms of poor marketing approach, the findings show that the majority of them were yet to establish a reliable and consistent market. There seemed to be a need for them to develop and expand into more market networks in the food sector of the Free State economy. The marketing mix strategies demonstrated amongst them were ill conceived and needed improvement to instil more competition amongst them. Evidently, the majority of the interviews showed lack of own transport for movement of livestock to and fro the market; hence the rise in production cost. Other key factors that lead to the sudden business failure syndrome amongst pig farming SMMEs in the Central Free State were found to be production cost inflation, unfriendly climatic conditions, outbreak of epidemics that could result in widespread casualties amongst livestock, and lack of production technology.

Research question two

Are pig farming SMMEs satisfied with existing management strategies regarding their performance and sustainability?

In this study 34% of the study population indicated that they were satisfied with the overall performance, whereas 64% showed that they are dissatisfied, and only 2% indicated they were very dissatisfied. This could imply that an improvement in management approach is needed as well as other systems of pig business.

However, interview data showed that 22 (79%) respondents, who are in the majority, indicated that performance and sustainability decreased. They based it on existing management strategies that has a significant association with performance and sustainability. Therefore, there was consistency in terms of business management strategies and performance and sustainability. Altogether 23 (82%) respondents indicated a need to improve their management strategies in terms of planning and execution that includes outlining the concept of their strategic plans, forecasting the desired results, reviewing the business current state, creating the action plan, implementing the plan and monitoring results.

Research question three

Is there a significant association between enterprise size of operation and enterprise performance and sustainability amongst the pig farming enterprises in the Central Free State?

Based on the chi-square test of the association between size of operation and performance and sustainability as shown in table 4.19, one can identify sales growth, gross profit (before tax) and return-on-investment over the past 1-5 years as critical variables. The p-value for enterprise's sales growth is 0.034, which is less than 0.1. This means that from the two-way frequency, there is a significant association between enterprise size of operation and performance and sustainability with respect to sales growth over the past 1-5 years among respondents. The null hypothesis was rejected.

The p-value for enterprise's gross profit (before tax) is 0.226, which is greater than 0.1. This means that from the two-way frequency, there is no significant association between enterprise size of operation and performance and sustainability with respect to gross profit (before tax) over the past 1-5 years among respondents. The null hypothesis must therefore be accepted.

The p-value for enterprise's return-on-investment is 0.031, which is less than 0.1. This means that from the two-way frequency, there is a significant association between enterprise size of operation and performance and sustainability with respect to return-on-investment over the past 1-5 years among respondents. The null hypothesis must therefore be rejected.

Research question four

Is there a significant association between enterprise diversification as well as indebtedness and enterprise performance and sustainability amongst pig farming SMMEs in the Central Free State?

Table 4.20 presented above shows the chi-square test of the association between enterprise diversification as well as indebtedness and enterprise performance and

sustainability. The p-value for enterprise diversification is 0.000, which is less than 0.1. This means that from the two-way frequency, there is a significant association between enterprise diversification and performance and sustainability among respondents. The null hypothesis must therefore be rejected.

The p-value for enterprise indebtedness is 0.004, which is less than 0.1. This means that from the two-way frequency, there is a significant association between enterprise indebtedness and enterprise performance and sustainability among respondents. The null hypothesis must therefore be rejected.

Research question five

Is there a significant association between existing marketing strategies and enterprise performance and sustainability amongst pig farming SMMEs in the Central Free State?

Table 4.21 shows the chi-square test of the association between existing marketing strategies and performance and sustainability. One can identify direct marketing to end users, and channels of distribution as critical variables. The p-value for direct marketing to end users is 0.000, which is less than 0.1. This means that from the two-way frequency, there is a significant association between direct marketing to end users and performance and sustainability with respect to marketing strategies among respondents. The null hypothesis must therefore be rejected

The p-value for channels of distribution is 0.007, which is less than 0.1. This means that from the two-way frequency, there is a significant association between channels of distribution and enterprise performance and sustainability among respondents. The null hypothesis must thus be rejected.

Research question six

Will changing existing business models be supported amongst pig farming SMMEs in the Central Free State in order to maximize enterprise performance and sustainability?

Figure 4.18 shows the number and percentage of pig farming SMMEs that regarded support for changing the existing business model in order to maximize performance and sustainability. The descriptive statistics was applied in addressing the question. The respondents were required to indicate YES or No. The majority of the respondents, 86 (74%), indicated YES in support for changing existing business models, while 30 (26%) of the respondent indicated NO. The majority of respondents were in support of changing existing business models in order to maximize annual return-on-investment for sustainability.

Based on the interview approach, the majority of respondents, 25 (89%), agreed that changing the current business model will enhance enterprise performance and sustainability. The same respondents indicated that improvement in terms of governance and ownership structure is required and that they would prefer to do things differently in terms of creating, delivering and capturing values.

5.4 CONCLUSION

The methodological framework applied in guiding the development of the commonage cooperative model, for pig farming SMMEs in the Central Free State, to a large extent was instrumental in extracting most of the empirical evidence from the study population. Following this roadmap, in developing the model, the model appeared to have exhibited the key findings of the study as expressed in the model parameters. Answers were provided to the various questions that addressed the research problems, on the basis of triangulation. The combination of the review of existing literature, qualitative opinion expressed as well as quantitative survey were instrumental in forming the basis of the findings.

Arguments in literature, with respect to key factors that lead to sudden business failure syndrome amongst pig farming SMMEs in the Central Free State, received a boost

from both approaches of empirical findings. These key factors were found amongst the study population to include: 1) Lack of education and training, 2) Inadequate infrastructure, 3) Lack of finance, 4) Poor security of livestock, 5) Personnel shortage, 6) Poor marketing approach, 7) Lack of own transport, 8) Production cost inflation, 9) Unfriendly climatic conditions, 10) Outbreak of epidemics, 11) Lack of technology, and 12) Poor management approach.

Through the review of existing literature, qualitative opinion expressed, and quantitative survey done, the study clearly established that the majority of pig farming SMMEs are, to a significant extent, less satisfied with existing management strategies. Furthermore, findings from the opinion of the majority of them fairly supported that changing the existing business model was in order to maximize enterprise performance and sustainability.

Enterprise size of operation, which was assumed to be significantly associated with performance and sustainability, was addressed, using the same methodological framework. The study clearly established that, for the majority of the study population, there is a significant association between size of operation and performance and sustainability in terms of sales growth and return-on-investment over the past 1-5 years. On the other hand, in terms of gross profit (before tax) over the past 1-5 years, there is no significant association between size of operation and performance and sustainability amongst the majority of pig farming SMMEs in the Central Free State.

Amongst the study population, diversification and indebtedness were some critical managerial challenges identified in the study; these variables were found in literature to influence performance and sustainability. The empirical finding indicates amongst the majority of the pig farming SMMEs that there is a significant associate between diversification and performance and sustainability. Similarly, there is a significant association between indebtedness and performance and sustainability. Marketing strategies of the study population were under the spotlight in the literature review. The empirical findings showed that there was a significant association between existing marketing strategies and performance and sustainability. The marketing strategies were calibrated and expressed in terms of direct marketing to end users as well as channels of distribution.

From all indications it thus appears that the commonage cooperative model has the potential to be further explored. The study initially presented a model which was considered to be a sustainable commonage cooperative model. As the name implied, it was conceived to be sustainable. Findings exposed that the concept of sustainability in business model development, in a competitive business environment, far less disagrees with the tendency for business model innovation. Hence, the new model was parameterized based on developments and observations inherent as the study advanced. The rigorous approaches leading to the findings and the model, exposed the study to its limitations as well as the model constraints to the advantages of the pig farming SMMEs in the Free State.

5.5 RECOMMENDATIONS

The main purpose of the study is to achieve SMME pig farming sustainability in the Central Free State. This was demonstrated by developing a business model in the form of a commonage cooperative model. Identifying the parameters that constituted the commonage cooperative model was key to the study in addressing the research questions and hypotheses. In this section, recommendations are derived from the literature review section and the empirical sections (quantitative and qualitative findings). Therefore, the recommendations presented in this section are subdivided into three unites; namely, the policy recommendations, recommendations for model development, and recommendations for further studies.

5.5.1 Policy recommendations

In the context of the pig farming SMMEs, evidence-based intervention programmes of government are required. This is in respect of the current extension service policy of the Department of Agriculture. The programme design with its good intention may have to be refocused to give more attention in addressing more strategic marketing management challenges facing the pig farming SMMEs in South Africa. Existing government agricultural policies have evolved through different political eras, and more policy changes may be required today in support of the emerging farmers. Based

on the outcome of the study, with respect to the pig farming SMMEs, this recommendations advocate for a shift in policy focus. This shift should, among other aims, support pig farming SMME competiveness amongst the established enterprises. A government policy that seeks to broaden market participation rate of the emerging livestock SMMEs in the livestock value chain will be in order. It should be anticipated to go a long way in enhancing the profitability of the pig farming SMMEs in the Central Free State.

Based on the findings of this study regarding the response strategies demonstrated by the study population, the study advocates for an integrated approach to policy design, for outcome-based sustainability amongst the pig farming SMMEs in South Africa. This approach should have the capacity to enhance the interdependence that exists amongst various government institutions connected to the livestock sector. This will go a long way in addressing service delivery challenges of government that continue to affect the performance and sustainability of the emerging livestock SMMEs. In the context of the emerging livestock sector, it was evident from the findings that marketing amongst the pig farming SMMEs was highly challenged due to policy marginalization. The government needs to take into consideration the capacity of the emerging farming SMMEs when generalizing policy directives. A number of these policies are found to be beyond the capacity of the emerging entrepreneurs, such as those having to do with distribution and packaging, etc. These policies and their compliance requirements are found to fall within the capacity of the established farming SMMEs to comply.

5.5.2 Recommendations for model development

Uncertainties in the business environment may in the course of time manifest to discount the credibility of model parameters, and if actions are not taken it further compromises the usefulness of the model itself. This was the case with the initially proposed model, and is more likely to recur in other instances. Therefore, this study recommends that in the context of business model typology, flexibility be applied to provide for unforeseen dynamics in the course of developing and defining model parameters. Model calibration and validation are prerequisites in model development. This is important to exposure the model to some environmental conditions. These tools

can be conceptually demonstrated when a developed model is scanned over the fundamental research questions and hypotheses to demonstrate for possible substantiation and consistencies in the application of the model in a given domain. Operational validation is ultimate, and is better when it is demonstrated by enterprise stakeholders.

5.5.3 Recommendations for further study

Descriptive approaches to the study of business models relatively abound in literature. Advances in model typology that typically demonstrates evidence-based practices are required. This could provide invaluable support to business model innovations in the industries, and will go a long way in adding to the existing variety of models. It is in this context that the following recommendations are made and it is implied that this set of recommendations emanate from the research work accomplished.

The attempt made in this study has in the course of it exposed the challenges facing the entire livestock business in the South Africa's agricultural sector. This is with regard to business model development. It is recommended that further academic research work should be encouraged to extend on the dynamics of parameter changes in the business model, with respect to pig farming SMMEs in the Central Free State. This recommendation is aimed at sensitizing the production of knowledge about developments in the business environment and create future hybrid business models across the sector.

Livestock SMMEs' responses to changing government agricultural policies are recommended as a future research agenda. According to findings, there are occasions whereby key stakeholders were excluded in the process of formulating government agricultural policies. This negligence limits potential input that could be derived from immediate stakeholders in the sector, especially amongst the pig farming SMMEs whose input should serve as discussion documents. This research agenda is expected to bridge knowledge gaps with regards to the response strategies demonstrated by livestock SMMEs in withstanding policy shocks which they occasionally face in the business environment.

CHAPTER 6

A COMMONAGE COOPERATIVE MODEL FOR SUSTAINABLE SMME PIG FARMING IN THE CENTRAL FREE STATE

6.1 INTRODUCTION

Internal variables which are within the domains of management require coordination by means of applicable limited resources of management. These variables must first be described in a statement that identifies the essential management capabilities, performance measures, process and procedure for achieving desired results. This description is mandatory as it facilitates the understanding of institutional framework factors influencing the anticipated business activities as in the case of livestock SMMEs. This process of description thereafter drives consultation with relevant stakeholders for a guide toward providing projected services to the livestock value network. Therefore, the type of enterprise structure to be adopted by the pig farming SMMEs will go a long way to determine what measure of resources may be required.

In this section, this study presents a *Commonage Cooperative Model* for sustainable SMME pig farming in the Central Free State of South Africa, a kind of inclusive business model consisting of a livestock value chain, based on which the study develops a set of business management and marketing management strategies that maximizes performance and sustainability amongst pig farming SMMEs in the Central Free State. The commonage cooperative model methodology adopted here for developing these strategies is assumed to be inclusive of the pig production system value chain. The model assumption considers a whole range of value adding activities required throughout the different phases of livestock production among a strategic network of business organizations. This network includes procurement, livestock breeding value grid, a web of extended contracts that enable end-user access to the product, etc.

This Model was designed to be suitable for prospective cooperatives who may be required to ascertain venture ownership, implementation group and membership of the prospect venture. Support activities include human resources management, procurement, technological development and infrastructure. The Department of Agriculture extension services are available as an intervention structure of government regarding the application of scientific research outputs and new knowledge in support of emerging livestock farmers through farmer education. This extension workers are considered to be important factors to reckon with in actualising the Commonage Cooperative Model as they undertake this objective-oriented intervention by means of advisory and education approach. It is obligatory for emerging entrepreneurs to utilize the existing structures and programme initiatives of government to stay competitive and achieve sustainability.

For reasons of convenience and environmental factors, the government of South Africa provides municipal commonage centres for the purpose of rural agricultural activities, this centres are considered to be most suitable for smallholder livestock farmers. Majority of the pig farming SMMEs in the Central Free State included in the sample, indicated to have started out with the commonage facility, though, having to face the challenges of security of livestock, infrastructure inadequacies, and distance away from market centres.

The proposed business model is designed to be operated under a cooperative business organisational arrangement of SMME pig farmers in the Central Free State who uphold the same cooperative principles and values. This model of agricultural cooperative is designed to be operated in line with the Agricultural Co-operative Act No. 14 of 2005.

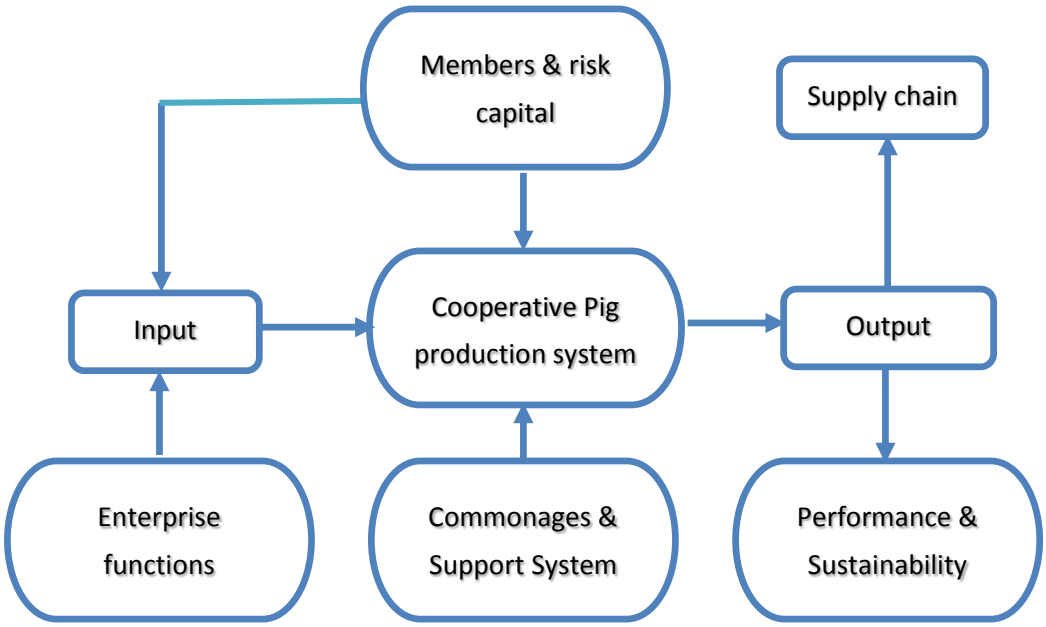
6.2 JUSTIFICATION FOR MATHEMATICAL AND ENTITY-RELATIONSHIP MODEL APPROACH

The modelling approach requires that a mathematical concept and language are applied in describing the system of pig farming businesses in the Free State province. For the purpose of prediction, extraction of information and description of possible stochastic structures, a statistical model is applied (Konishi & Kitagawa, 2008). The

model approach is classified into two in order to provide some deductive and inductive outcomes. The deduction implies that a logical structure which is presented based on theory and data to support a proposition is found and extrapolated. The inductive outcome will however be derived from empirical findings for generalization, of which some arguments are therefore presented to explain existing data.

The conceptual justification for the use of an entity-relationship model (ER model) to complement the mathematical model is to apply a graphical display of business functional data to parameterize associations existing between instances of entities of the entire value chain system of pig farming businesses in the Free State Province. This aspect of the model is drawn in a graphical form as boxes representing entities and attributes with links which serve as associations and dependencies.

Figure 6.1: Commonage Cooperative Model (CCM)



Source: Author (2016)

Figure 6.1 shows that the choice of a cooperative business organization in this model is considered by the pig farming SMMEs based on the concept of the non-traditional cooperative; basically, the new generation cooperative business organizational formation (Chaddad & Cook 2004:349). This formation rests on existing commonages and support systems for pig production, resulting in a durable output being delivered

to members/patrons for marketing. Risk capital consist of disposables from financial return on investment, generated from the marketing management system, and then become some commitments made by members as input to the pig production system.

A pig production system results to output, possibly relying on the enterprise functions of a general efficient operations management system. In the same direction, commonages and support system in terms of the existing common pasture land facilities, extension facilities of concerned government departments; government policies and programmes incentives to the pig farming SMMEs result to sustainable output variables which is the bedrock of the research objectives and questions. The supply chain in the model remains a link between the output and the market system.

The above assumptions, parameters and values form the abstract of the commonage Cooperative Model. The model can be illustrated using a mathematical linear programming method whereby an enterprise budget is constructed on the selected pig farming SMMEs.

Such that we maximize output as the objective function:

$$\text{Max Q} = \sum_{s} \left(a_{ij} X_{ij} \leq b_{ij} \sim for\ all\ ij\right) \text{.....EQ (1)}$$

Subject to {IC, EF, MRC, CSS} ---- Resource Constraint

Where

Q – Output

IC – Input cost

EF – Enterprise functions

MRC – Members/risk capital

CSS – Commonage Support System

Equation 1 represents the constraint of production output of pigs at farm type level.

The first derivative with respect to output gives:

$\frac{d(Q)}{(dIC)}$ ≥ 0 satisfying the condition of non-negativity output observed.

$\frac{d(Q)}{(dEF)}$ ≥ 0

$\frac{d(Q)}{(dMRC)}$ ≥ 0

$\frac{d(Q)}{(dCSS)}$ ≥ 0

Whereas:

CPPS = f(IC, CSS, EF)……EQ (2)

Where

CPPS – Commonage Pig Production System, and

CSS = f(GPP, EV, VC)……EQ (3)

Where

GPP – Government policies and programmes

EV - Environmental variables

VC = Value chain

While also

Ps = f(Q)

Where Ps = Performance & Sustainability

Which implies that Ps is considered as a measure of output.

6.2.1 Advantages of the model

1. The model promotes collective investment actions of members of a community or commonages through co-operative pig farming enterprises
2. The model requires minimum investment capital for prospective pig farming and excludes government subsidies as a necessity.

3. The model assures pig farming investment growth, security and continuity in a value chain.
4. The model provides for a reduced risk, transaction costs and easier financing.

6.3 CHARACTERISTICS OF THE MODEL

6.3.1 Input and output variables

The production system is considered an important component of the model; it describes the links between input and output. The model identifies a number of input variables that supports the production system, such as: water, medication, transportation, human resources, infrastructural, feeds for livestock, gilt hog, and other operation supplies. The process that determine how increases in input quantities do affect the quantity of output is defined in the configuration of a given production process.

6.3.2 The enterprise function

In terms of size categories, a number of variables were considered in the measure of size; which include employees, return on investment, venture life span, number of livestock, etc. Basically, four size categories of livestock ventures widely spread in the Free State Province are namely, the survivalist, small, micro, and medium-size. There organizational form range from sole proprietorship, partnership, close corporation, joint venture, Pty Company to cooperatives. These SMMEs involved in pig production seem to embrace the opportunity of integrating operations to mitigate their constraints. This is achieved through the approach of horizontal and vertical integration of operations. In order to complement resource capacity, three type of pig production system are common among these enterprises: farrow-to-finish, farrow-to-feeder, and feeder-to-finish. The adopted production system are therefore a function of: 1) the availability of amount of capital, labour, and land, 2) the skills level of management and marketing, and 3) the availability of infrastructure.

6.3.3 The supply chain and market behaviour

There is an appreciable growth in pork consumption in the Free State province in spite of the socio-cultural stigma that seems to be associated with the consumption of pig. Pig distribution channels as shown in figure 6.6 is elaborated to include the wholesalers, retailers, farmers' market, food processing firm, and specialist food stores. There exists a less degree of market segmentation as the bases of a typical target market for pig is reduced to characterize potential consumers who make the buying decisions within a target geographical area and purchase pattern considering the channel level.

The level of return-on-investment is a function of a given market scenario, consequently, the elasticity of demand and supply is factored into the model to determine the degree of responsiveness as competition emerges. The cost factors are dynamic variables running across enterprises, and may include elements of fixed cost and variable cost, etc. The difference between expected revenue and total costs defines enterprise profit.

6.3.4 Pig production system

In this model, analysis for pig production system is limited to the value chain around the primary level of production. In most cases, a production system is a function of the availability of infrastructure, such as the municipal common pasture areas, pig pens, water facilities. Other variables may include resources capacity of an enterprise and human resources capabilities, security of livestock, and transport. The inadequacy of these factors may frustrate production operation. It is common among livestock producers to keep animals in the commonage centres provided by the municipal or provincial authorities. These operation areas or pig houses are far removed from residential areas.

On the other hand, pig production is influenced by the demand for pork. Pork is considered by many as a good substitute for beef in the Free State. The market for this consumer product is continuously growing.

The model highlights certain external environment influences that may determine the market scenario as well as the level of production and consumption of pig in the value network.

6.4 MODEL DATA

The model relied on data gleaned from primary and secondary sources. All these were derived through questionnaires administered amongst pig farming SMMEs in the Free State Province and available literature relating to these pig faming SMMEs. The data indicate factors that lead to sudden business failure syndrome, the effect of business management models on performance and sustainability (which is expressed in the annual-performance and sustainability, the relationship between size of operation and sustainability), and the effects of livestock farming diversification on sustainability and marketing strategies that maximize annual return-on-investment.

Performance and sustainability are key variables indicating the level of performance and sustainability among SMME pig farmers. Data gleaned show heterogeneous output functions. Data were sourced from questions such as the number of livestock, level of improvement on attempted diversification approach to growth, defaulting business indebtedness. Achievability of production targets, controllability of production cost, farm size, improvement on sales revenue, satisfaction expressed over performance, percentage level of gross profit, estimation of percentage level of return-on-investment over the past five years, estimation of percentage level of sales growth, profitability and cash flow.

Business failure is another key variable in the model of which various authors have shown different interpretations (Pretorius, 2009:1), based on varying circumstances.. The concept of failure was operationally defined as a venture which has gone into liquidation, i.e. it has ended its business and left behind unpaid creditors. Pretorius (2009:1,10) considered failure to be a natural step in the life cycle of a business venture, to the extent that it becomes involuntarily unable to attract a new debt or equity funding to reverse a decline. Data were sourced from questions regarding number of livestock, number of years of operation, enterprise lifecycle stage of

operation, defaulting business indebtedness, achievability of production targets and percentage level of return-on-investment over the past five years,

6.5 MODEL CALIBRATION AND VALIDATION

This process is accomplished by estimating the values ascribed to various constants and parameters identified in the model structure by using a mathematical approach. Based on the results of the survey and interviews conducted in Chapters 4 and 5, parameters of interest were identified for the estimation. These were obtained from the findings of data collected from study participants in the system. Concurrently, a hybrid method was applied whereby a prototype was established, of which its constants and parameters that are similar to the cooperative commonage model being studies were equally used as estimators.

Furthermore, in determining the correctness of the cooperative commonage model a conceptual attempt was made toward validation. Model validation is usually defined as “a substantiation that a model within its domain of applicability possesses a satisfactory range of accuracy consistent with the intended application of the model” (Sargent, 2010:3). Questions and hypotheses outlined in the study were meant to address the problems and purpose for which the model was intended, for the interest of the study population (Sargent, 2010:1; Balci, 1982:621). Key output variables of interest identified in the model premising the research questions and hypotheses, were tested to determine the model’s output behaviour for the intended domain applicability.

6.6 CONSTRAINTS OF THE COMMONAGE COOPERATIVE MODEL

Creations suffer imperfection. Therefore, this model is not without constraints. A constraint is defined as anything that limits performance towards a predetermined goal. This study identifies three key constraints of the commonage cooperative model for a sustainable SMMEs pig farming business. The study shares similar rationales and patterns set out in De Nies (2013:2) in providing a background for the model constraints. In the opinion of De Nies (2013:3), entities, activities and agents involved in a system are important factors to consider when determining the system’s constraints. An entity is the entire system of production described by some fixed

attributes. These varying attributes of different production system may become bases for determining the system's constraints. Another basis of rationale for the model constraint can be considered as events. Aligning one entity event with another may seem unrealistic as various production systems may be characterized differently. In De Nies (2013:6), five types of events in a system were identified, namely: activity start event, activity end event, entity generation event, entity usage event, and entity invalidation event. Finally, agents of a system who are linked with events and activities may equally become bases for determining the system's constraints.

The model may suffer some institutional policy constraints. The political will of government to continue with existing policies in the agricultural sector that give credence to the model is factored into the range of possible constraints. Some of these policies and Acts of parliaments which have been aforementioned in the preceding chapter have continually undergone amendments and may in future deviate from a common objective of a system.

Market dynamics is another factor to consider. The market can be somewhat unpredictable in most cases as market data may seem unstable with new developments in the market environment. Tied with the market dynamics is the issue of value chain complexity due to differences amongst value chain stakeholders.

6.7 THE APPLICATION OF THE MODEL

Basically, the model is community-based and applicable to pig farming SMMEs. It was developed to suit the alliances of pig farming SMMEs in the form of cooperatives. Due to resource inadequacy amongst livestock SMMEs, its design can leverage the existing municipal or provincial commonage centres for pig production. In this study, the model is developed using policy parameters, value networks and other variables that may influence performance and sustainability amongst SMMEs Pig Farming in the Central Free State province of South Africa. The model is to be practically demonstrated in a holistic system of approach by increasing the level of private and public investment in pig production. In this approach it meets three simultaneous objectives of sustainable farm business management dimensions, namely: 1)

economic profit for members or investors, 2) social benefits to the farm family and the community, and 3) environmental conservation.

This formation is designed to be applicable on existing commonages and support systems for pig production, resulting in sustainable output variables being delivered to members/patrons for marketing. Risk capital represent disposables from financial return-on-investment, generated from the marketing management system, and then become some commitments made by members/patrons as input to the pig production system. Production operations result in output variables which will possibly rely on a general efficient operations management system. Municipal commonage centres and support system in terms of the existing common pasture land and infrastructure, extension facilities of concerned government departments; policies and programmes incentives to the pig farming SMMEs result in sustainable output variables, which is the bedrock of the research objectives and questions.

6.8 FUNCTIONAL STRATEGIES FOR INCREASING BUSINESS PERFORMANCE AND SUSTAINABILITY

The aim of this attempt is to explore and provide an adaptive business management model and marketing strategy with elements of innovations to address current return-on-investment challenges facing pig farming businesses and livestock enterprises in general. The operations of these enterprises in the economy take different forms in the agricultural sector, as some are involved in the primary sector, while others in the secondary sectors. Key aspects of operation as well as other functional activities of business management will be considered when evaluating their performance; acceptable measures of return-on-investment will be applied.

Innovating the livestock ventures in the commonage centres around the Free State Province to be more productive and to strengthen their competitiveness is a step towards addressing the ROI challenges. This approach gives a unique attention to those more focused in piggery. The operational framework provided by the regulating institution of government for participants in this sector is still at a phase of development and will be examined to identify possible effects on outputs. The effort of government in ensuring that this primary sector of the economy becomes sustainable cannot be

overemphasized; hence, the call for institutional support intervention toward agricultural smallholder sustainability by means of cooperatives, recognizing that the cooperative approach remains the cornerstone for the growth of South Africa's economy (DAFF, 2011:1).

6.8.1 Environmental considerations

The environment in which a business is established to demonstrate its capabilities cannot be underestimated as it shows a number of dynamic factors that determine performance levels of its venture. These may be uncontrollable variables that influence livestock enterprise managerial activities; these dynamic factors may impact on business either positively or negatively depending on managerial perspective and orientation. Among these variables are included the following:

- *Climate:* in most cases, climatic conditions of the Free State significantly determines resource application and distribution. Being a region with a continental climate, it can be too cold during the winter and too hot during the summer. Decisions on business infrastructure and its associated cost may also depend on climate. The harsh effect of the Central Free State climate in the summer of 2015 is a recent development which challenges agriculture related business. The occurrence of drought has remained a yearly challenge among farmers in the province. The cost of livestock management during winter can be high, as farmers would have to face the challenge of providing more energy to keep livestock warm. The majority of farmers indicated that mortality rate is associated with harsh climatic conditions.

- *Technology:* in the primary sector, the majority of the emerging livestock enterprises operate with less developed technology. High cost of technology procurement contributes to lack of required equipment, which influences operations negatively. Government intervention measures by means of subsidies to these enterprises have gone a long way in mitigating the effects. It is also obvious that most of them rely on improvised infrastructure for their operations.

- *Economic:* the emerging livestock enterprises face tremendous economic shock at the baseline. Certain economic indicators which are related to the agriculture sector significantly influence enterprise performance. The challenge of fluctuating interest rate on credit purchases is a case in point. Another challenge is cost inflation associated with factor market without a corresponding rise in prices.

- *Social:* trends and development in societies such as healthy lifestyle awareness do affect purchase decision and behaviour of consumers. Some belief system in terms of traditions or religion may discourage the consumption of certain livestock, for example pock, goat, etc. Development in healthy lifestyle, health consciousness, etc. may encourage increased demands for other livestock breeds in one society compared to others.

- *Legal:* various government legislations setting out the framework for regulations and sectorial determination are available and are sometimes found to influence the general business climate. The majority of the emerging enterprises are finding it difficult to comply with frequent changes in government regulatory requirements; for example, a number of labour Acts exists which significantly impact on Labour relations and human resource management. Managers of these enterprises have had to face the challenges of a rising cost of operations, which ultimately affects prices in the face of competitions.

- *Political*: when the political environment is relatively stable, business strategies and plans are more feasible. Emerging livestock enterprises must find means of deepening their understanding of the political undertone behind public policies and see how they may take advantage of its opportunities. These can be less predictable variables in society. There can be many political agents who may have vested interest in the economy that may influence government priorities, creating a sense of uncertainty in the agricultural sector.

6.8.2 Marketing Management Strategy

As the gateway to return-on-investment, the fundamental goal of marketing strategy is to increase sales and achieve an optimum level of a sustainable competitive

advantage. This involves all aspects of marketing in relation to the management of the enterprise marketing resources and activities. These activities can be illustrated by the way in which the pig farming SMMEs apply marketing strategies, which require the use of instruments such as in the marketing mix. A marketing mix can be modelled in a way to facilitate the allocation of scarce resources across different portfolio of activities.

There are diversity of strategies in marketing, which may depend on the unique situation of a given enterprise. Some generic strategies can be categorized according to the situation of the industry and the individual business mission. Developing a marketing strategy requires the understanding of the business environment, which involves the external and the internal influences, as well as the strategic constraints based on a given business environment.

As indicated elsewhere in this study, growth strategies are categories of generic marketing strategies common among the pig farming SMMEs in the Central Free State Province as a driver for sustainability. They can be considered as strategic market growth alternatives such as market penetration, market development, product development and diversification that can be beneficial to a business in terms of long-term or short-term growth. These market growth alternatives, better known as the Ansoff Matrix, serves as a strategic planning tool that provides a framework that may be applicable to pig farming SMMEs for future growth interventions.

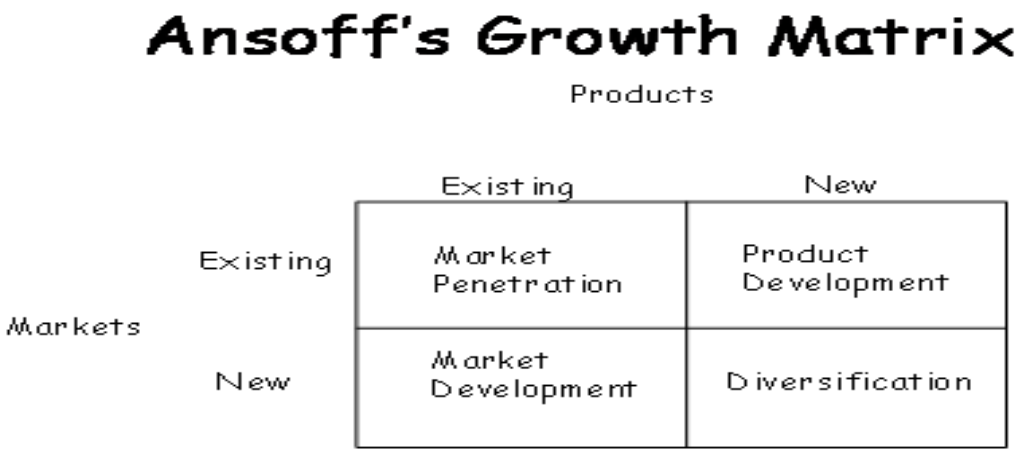


Figure 6.2: Ansoff's Growth Matrix, with adaptation (Ansoff, 1957:114)

Market penetration: This strategy implies a market share contest in existing market using existing offerings. First, a new entrant attempts to maximize its market share within existing market segment. This approach requires a start-up pig producer to have the understanding of the pig market size and to evaluate its resource capabilities. At a penetration stage of a market, risks are low for the producer as the pig products are already on the established market.

The marketing mix strategies can be deployed to accomplish the goals of penetration; some strategies and tactics may include the following: price adjustment, simplifying the distribution channel, increasing the intensity of distribution, improving the pig products, and improving communication that enhances product awareness and results in increased consumption rate. A producer can achieve some economics of scale as an advantage of market penetration; sales turnover may increase when the strategy is accomplished, and it can serve as a competitive strategy for a new entrant in the market.

Some pitfalls of market penetration are that the market for pig may be saturated to the extent that it negatively affects sales turnover, which may result to a shortfall in projected profit. It may cause prices to lower in one geographical area than in another.

A pig producer may so aggressively penetrate a market that the outcome compromises with its image.

Product development: This strategy can be more novelty as it involves the introduction of a new product into an existing market. Product development can be a complex decision as it may involve modification, introduction of a different breed of pig, etc. Understanding a product lifecycle is important in implementing this strategy. A useful advantage of this strategy is that the producer responds to the changing nature of customer needs, which is better achieved through customer surveys. Another is that a business is more competitive when strategies are customer-driven, and the company is likely to become a leader in the industry as a culture of innovation is more pronounced. Some pitfalls exist, such as: (1) product development can be as difficult as starting a new business, (2) Sometimes customer's need profile can be altered in the course of developing a product that is intended to satisfy the need.

Market development: This strategy requires the pig farmer to attempt to identify and develop new market segments by way of a target market expansion, but using its existing offerings. Finding non-buying customers as well as new customers in current or new target segment is important in this strategy, such as new demographic segment, new geographic segment, new psychographic segment, and new institutional segment. Decisions for a market development strategy must take the following factors into account: (1) profitability of entering into new markets, (2) understanding the feasibility of the market, and (3) the choice of introducing new or modified products.

Diversification: Diversification has been extensively treated in Chapter 2. It requires a pig producer to depart from present product and/or present market; it is a turnaround in the product-market mission of the pig farming SMMEs. The original work of Ansoff (1957) on diversification strategy was the perspective that sets out the logical background. Both literature and empirical study reveal that this strategy was often-time applied as a measure to avert business failures amongst pig farming SMMEs. Premature diversification decisions may seem to have unimaginable consequences on pig business operations, as it may be a distraction from a more focused pig business management operation.

Market Segmentation: This marketing strategy is common among pig producers in the Free State. It entails the subdivision of the pig market or population into segments. It is a non-price competition approach which targets well-defined similar market characteristics. A broad target market for pig products can be divided into subsets of consumers, businesses, or countries which are perceived to have common attributes. The purpose of segmentation is to enforce marketing resources on the subdivision or a market segment in order to gain some leading advantage over competitors. This strategy is better applied using a number of procedures which can be designed to suit the nature of the product and market. A generic process of segmentation is shown in figure 6.3.

Market segmentation ensures that marketing attention is directed to the differences that exists among a target market, and strategic priorities are spread across the marketing mix; for example, customers need different *products*, they are willing to pay different *prices*, they are found in different *places*, and there responses vary with respect to different types of *promotion*. Depending on the target market characteristics, the following types of segmentation can be applied among the SMME pig farmers in the Central Free State:

Types of pig market segmentation

- ***Demographic segmentation***
  Personality attributes of consumers play key role in the decision over the approach to channel product to the target market. It requires that the statistical data of the people must be handy. Demographic information about consumers in South Africa can easily be accessed from Statistics South Africa, www.statssa.gov.za and some of them are categorized into age, gender, marital status, family size, ethic/racial background, citizenship, religion, income, education, family size, employment status, and language.

- ***Behavioural segmentation***
  This considers consumers' attitudes, and response patterns of consumers to the marketing mix strategy. It focuses on *how* consumers demonstrate their brand loyalty, purchase decisions, learning culture, consumption manners, etc.
- ***Geographic segmentation***
  Pig markers can segment according to geographic criteria such as nations, state, regions, countries, cities, neighbourhoods, or postal codes.
- ***Occasional segmentation***
  The market for pigs can receive a sudden boost when sellers understand occasions when the individual customers' needs, behaviours and values are favourable to the market.
- ***Segmentation by benefits***
  This takes place according to benefits sought by consumers or customers.
- ***Cultural segmentation***
  The market can be classified according to cultural attributes of customers. This may give a marketer an ease of penetrating some target regions of cultural communities.
- ***Psychographic segmentation***
  This approach considers the lifestyle of a target market. A market can be improved by understanding key external influences which are responsible for consumer behaviour. This can be demonstrated by studying the activities, interest, and opinions of customers.

Figure 6.3: Types of pig market segmentation

There are a variety of steps to be taken in pig market segmentation, which, however, depends, on the characteristics of the potential segment. In any case, a generic process of segmentation in figure 6.4 can be helpful to the pig farming SMMEs in the Central Free State Province.

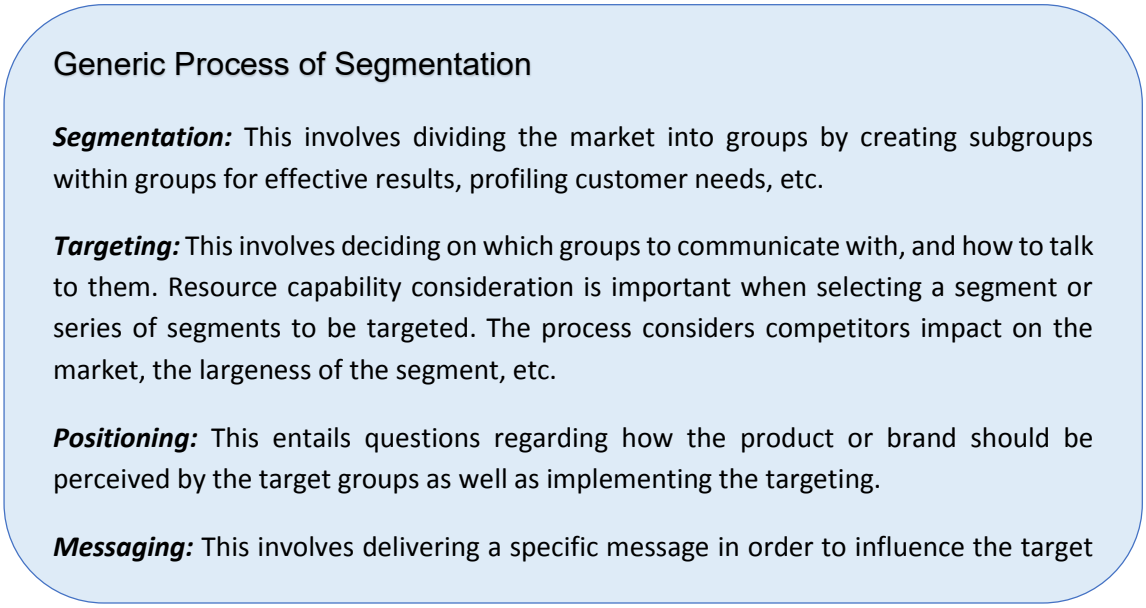


Figure 6.4: Generic process of segmentation

According to Wind and Bell (2007:226) detailed answers must be given to the following questions in order to ensure an effective segmentation strategy, in the case of a pig market:

- How to segment the market?
- What research procedure to use to develop a segmentation strategy?
- What segment(s) to target?
- How to allocate resources among the segments?
- How to implement the segmentation strategy?

When deciding on segments to prioritize, pig farming SMMEs must consider factors such as:

- ***Accessibility*** of the target market for pigs, which includes extending promotion to potential buyers and the cost associated with these activities.
- ***Measurability*** of the resource requirements and internal capabilities of the segmentation strategy, which also involves its costs of segmenting and benefits to be derived from segmenting the market.
- ***Sustainability*** of the segments is usually linked with measurability, and must consider questions regarding segment life span, volume, and return-on-

investment. It may not be a worthy decision to select a segment, commit scarce resources to execute the marketing mix on a pig target market at the detriment of a mass market opportunity.

- ***Practicability*** of the segmentation strategies giving the characteristics of the segment should be considered in the interest of potential customers.

Product: here one needs to consider two fundamental perspectives of the concept of pig product, namely: *pig product marketing* which involves presenting and matching pig product with prospects, customers and others, i.e. a function in marketing. On the other hand, pig *product management* deals with the basics of product development within the enterprise. Product is the most prioritized in the management of the various Ps of marketing, as the pig breeds to be offered in the market must be taken into consideration in terms of market requirements. Nevertheless, traditional commercial breeds grown in South Africa include the Landrace, the Duroc and the Large White. Other indigenous population of pigs such as Kolbroek, etc. also exist. Other basis of breed differentiation which may influence consumer purchase decisions may include: (1) organically produced, (2) hormone-free pig, (3) antibiotic-free pig, (4) production site of pig, (5) pastured-fed pig, (6) locally produced pig, and (7) leanness of the pig.

Efficient pig production management ensures that Gilts (sows) have to be in a good healthy condition in order to produce large litters (8 to 10 or more healthy piglets) and to reduce mortality; this is subject to careful considerations in selections. Its leanness is most preferred. Figure 6.5 shows a description of common pig breeds. Pork is classified as a consumer product since it is purchased for final consumption by individuals and firms. In terms of nutritious value, it is a rich source of protein, thiamine, iron, zinc as well as Vitamin Bs, all of which are required for normal body growth.

Breed	Description
Berkshire	Black with white on the face, legs, and tail. Erect ears.
Chester White	White with small, partially drooping ears.
Duroc	Red with partially drooping ears. Muscular. Good sires.
Hampshire	Black with a white belt. Muscular. Good sires.
Landrace	White with large, drooping ears. Very long-bodied. Good mothers.
Poland China	Black with white on the face and legs. Partially drooping ears.
Spotted Swine	Black and white spotted. Partially drooping ears.
Yorkshire	White with erect ears. Long-bodied. Good mothers.

Source: Oklahoma State Swine Breeds Directory, http://www.ans.okstate.edu/breeds/swine

Figure 6.5: Common Pig Breeds

Price: The pig farming SMMEs' gross value of production is dependent on the quantity produced and the price received (DAFF, 2015:3). Pricing decision conforms to prevailing market prices, and in most cases, pig prices can be far below expectation, especially with emerging producers. Apart from costs of production, the interaction between demand and supply of pork is a key determinant of the price mechanism of pigs. As in other type of businesses, pricing strategy in Pig farming business takes into consideration the following factors:

- Fixed and variable costs
- Competition
- Company objectives
- Proposed positioning strategies
- Target group and willingness to pay.

A variety of pricing models exist for the emerging livestock enterprises, the use of which depend on the particular market scenario a business finds itself. The following inexhaustible list in figure 6.6 can be considered:

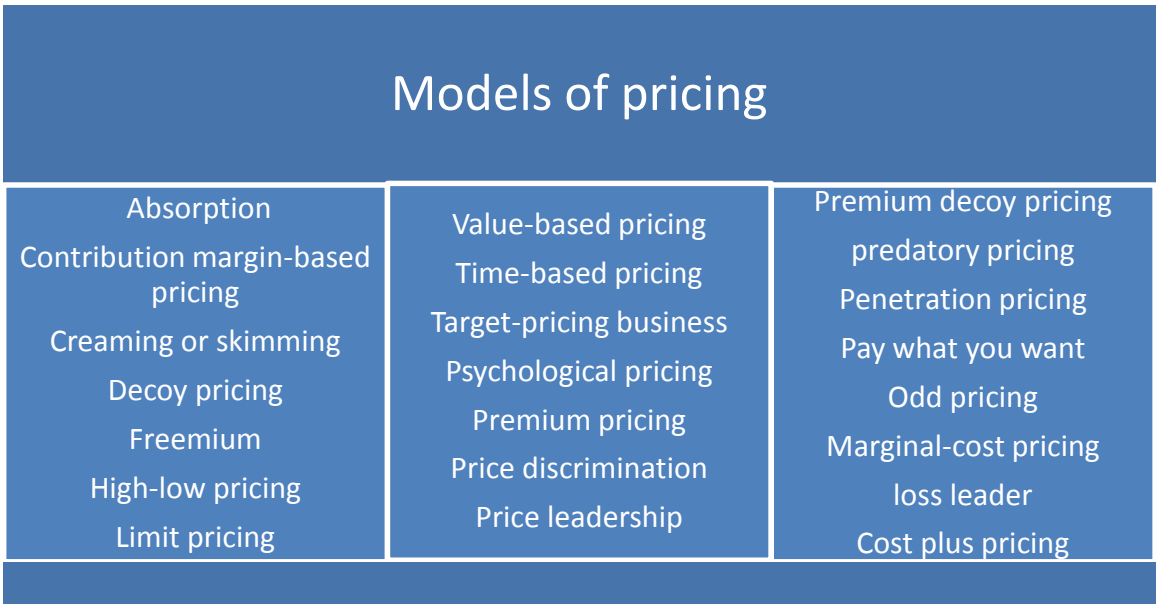


Figure 6.6: Models of pricing

Distribution: pig distribution in the Free State can be compounded by the heterogeneous nature of the market network. Thus, a detailed plan specifying paths through which livestock are intended to be transferred to intermediaries and end consumers is required. Transportation is a key factor in rural pig production since most of the farm operation sites may not be a better place for sales activities. Channels can involve either B2B, B2C or occasionally by means of auctions, considering the geographic settings. Livestock can be sold through a single distribution channel or through multiple channels, as illustrated in figure 6.7.

A concurrent distribution approach can take place at the same time if a producer has the logistics it takes to be at the targeted market place. In most cases, due to some extreme factors, the intensity of distribution adopted by producers can be a selective distribution, which involves the use of a limited number of outlets in a geographic area to sell livestock; this can be a resource efficient approach, as it further enhances the

possibility of establishing a good working relationship with buyers and provides an optimum market coverage.

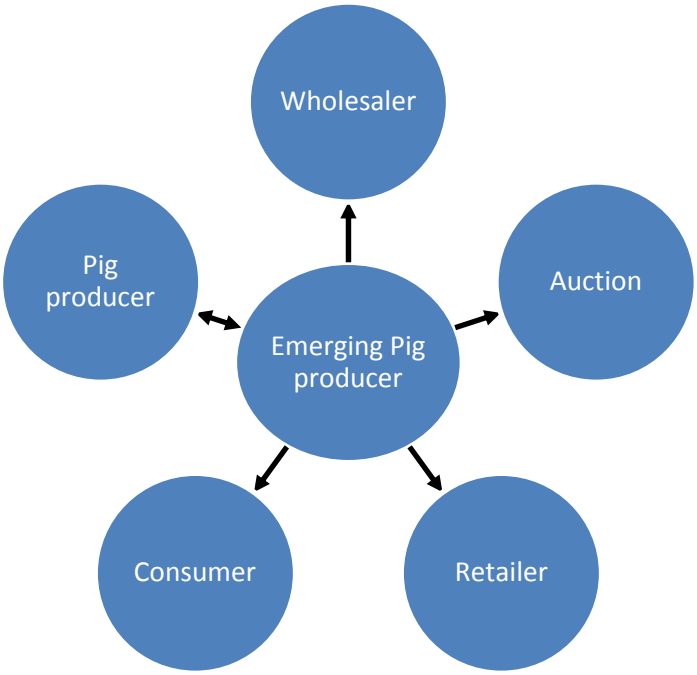


Figure 6.7: Multiple distribution model for pig marketing (source: author, 2016)

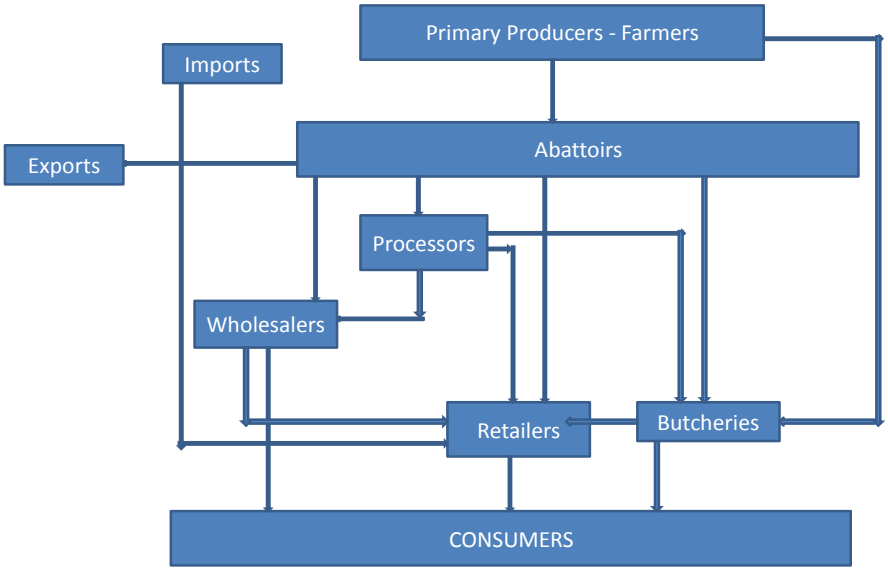


Figure 6.8: Pork marketing channel (RSA Agricultural, Forestry & Fisheries).

Promotion: this strategy includes sales promotion, personal selling, publicity, and advertising. The objectives of promotion in the livestock business are to increase sale, improve product recognition, attract customers and enhance breed identity. It is important for producers to design a more effective strategy of communicating with channel member in the target market. This design usually involves some key decisions about target market demographics using a four-stage fundamental process, which is equally essential for all elements of the marketing mix as shown in figure 6.7. As one of the marketing mix, promotion strategy will likewise conform to the operating distribution strategy adopted in terms of intensity, customer psychology and buying patterns as well as the nature and extent of competition. However, promotion is usually less pronounced in livestock businesses, as it is particularly important for emerging small livestock farming enterprises to utilize their limited resources more effectively. Furthermore, the intensity of promotion is determined by the choice of distribution network adopted by these enterprises.

Hybrid Promotion Strategy: this involves the integration of both push and pull promotional elements of marketing; it is a simultaneous focus on both resellers and end users by means of collaborations to achieve sales. The push-pull method, a concept routed from logistics and supply chain management, describes the movement of a product or information between two subjects. The push promotional strategies can be demand-driven as its design aims to market the product to resellers and support them on possible ways of reducing risk associated to product mission. In this case the product is advertised to gain audience awareness. Push production is based on forecast demand.

On the other hand, the pull promotional strategies are equally demand-driven since they emerge around the product or information that end-users demand for their needs, as the strategy aims to reach audiences which have indicated existing interest in the product or information about it. Pull production is based on actual demand.

6.8.3 Business management strategy

This activity is service-delivery oriented. It requires that operations activities are entrusted in the hands of people who have the technical know-how to drive

performance and to overcome other kinds of challenges such as the threats of epidemics when they arise. Operations can be supported by the use of the services of the extension officers from the provincial Department of Agriculture in terms of livestock production. In this case, an enterprise leverages on the expertise and functional advice of the extension officers. It ensures that the business successfully turns inputs into outputs in an efficient manner. Operation management includes aspects such as supply chain management and logistics.

6.8.4 Financial management strategy

This may include a financial plan showing the financial obligation of a venture's operation for a considerable period. The entrepreneur should lay out a financial plan as it guides decision making and checks excesses in financial management. The scope of financial management may consist of estimating the requirement of funds, determining the capital structure, selecting sources of finance, as well as patterns or uses of finance, cash management, disposal of surpluses, financial control mechanism, etc. Financing livestock businesses is usually a challenge with emerging farmers, as the capital projection can in some cases be relatively uncertain. On a very small scale, some farmers resort to personal finance to begin with and if the need for finance gets beyond projection, frustration sets in, whereby they may consider some external sources of funds.

It is important for a new entrepreneur to first of all make a good estimation of possible cost and sales considerations. Borrowing from a non-financial institution, if it were possible, might be considerable as the reverse may attract unbearable interest rate for emerging livestock entrepreneurs. A major challenge bordering most emerging farmers is the lack of adequate financial management knowledge, some are financially illiterate, and this is one of the areas requiring business management mentorship.

The objectives of functional financial management ensure the attainment of a regular and adequate supply of funds, adequate returns-on-investment, optimum funds utilization, a sound capital structure, investment safety and improving operational controls and workflow.

6.8.5 Human resources management strategy

This is primarily concerned with the management of people within the enterprise. For the emerging livestock enterprise, a simple HR system is required; however, considerations are given to enterprise financial resource capability which determines the affordability of the workforce needed for farm operations. The necessity for human resource management among the emerging livestock enterprises is underestimated, partly because more emphasis is placed on the management of operations in terms of logistics and supply chain management. For most undiversified enterprises, there exist a lesser labour requirement, some of which are occasional daily hires that may appear to be an approach aimed at reducing costs. The workforce structure of most of the enterprises is still less organized, with a high support intervention by relatives and acquaintances whose labour contributions are less measurable and inconsistent. Competency and training remain a set of challenge, as often, the affordable type of training is learning by doing, which is administered in the form of on-the-job training. Labour turnover rate, which is a phenomenon associated with livestock farmers in South Africa, may be high due to the effect of rural-urban drift.

6.9 SUMMARY

Finally, a commonage cooperative model was developed and presented in this chapter. Its outcome was a modification made on the initial proposal in Chapter 1. The model demonstrates some assumptions, characteristics and applicability amongst the pig farming SMMEs in the Central Free State. The model was illustrated by using a mathematical linear programming method whereby an enterprise budget was constructed on the selected pig farming SMMEs, as in the case of the Central Free State. The model approach was justified in this chapter as well as constraints, calibration and validation. This chapter was concluded by x-raying the SMMEs' pig farming functional strategies for increasing business performance and sustainability with emphasis on marketing management strategy, financial management strategy, and human resources strategy.

6.10 REFERENCES

Acs, Z.J. (1992). Small Business Economics: A Global Perspective. *Challenge* (November/December) 35(6):38-44.

Acs, Z.J. & Audretsch, D.B. (1990), *Innovating and Small Firm,* Cambridge, MA: MIT Press.

Achtenhagen, L., Melin, L. & Naldi, L. (2013). Dynamics of Business Models: Strategizing, Critical Capabilities and Activities for Sustained Value Creation, *International Journal of Strategic Management,* Elsevier, Long Range Planning 46 (6):427-442.

Adizes I. (1989). Corporate Life Cycle: *How and Why Corporations grow and Die and What to Do About it*. Prentice Hall: Eaglewood-Cliffs. NJ.

Agricultural Business Chamber (Agbiz) (2015). South African Political Economic Reality in 2015: *A Political Risk Analysis Narrative*. pp. 1-21.

AgriSETA (2010). Sector Analysis Agriculture, for the Department of Higher Education and Training, June.

Alastair, I. & Marsh, R. (2012). Nurturing Diversified Farming Systems in Industrialized Countries: How Public Policy Can Contribute. *Ecology & Society*, 17(4): 42. http://dx.doi.org/10.5751/ES-05041-170442 [Accessed 7 September 2016].

Anderson, M. & Pienaar, K. (2003). Municipal Commonage, Evaluating Land and Agrarian Reform in South Africa, *Programme for Land and Agrarian Studies PLAAS)*. An occasional Paper Series.

Ansoff, I.H, (1957). *"Strategies for Diversification"* Harvard Business Review 3: 113-124.

Antwi, M. & Seahlodi, P. (2011). Marketing Constraints Facing Emerging Small- Scale Pig Farmers in Gauteng Province, South Africa, *Journal of Human Ecology* 36(1):37-42.

Applegate, L. M., Austin, R. D., & McFarlan, F.W. (2003). *Corporate Information Strategy and Management* (6th ed.). New York: McGraw Hill.

Arain, M., Campbell, M.J., Cooper, C. & Lancaster, G.A. (2010). What is a Pilot or Feasibility Study? A Review of Current Practice and Editorial Policy. *BMC Medical Research Methodology*. http://www.biomedcentral.com/1471-2288/10/67 [Accessed 8th August, 2016].

Arikan, A. M. & Stulz R. M. (2016). Corporate Acquisitions, Diversification, and the Firm's Life Cycle. *The journal of the American Finance Association* 71(1): 139-194.

Atkinson, D. (2012). Revitalizing Municipal Commonages as a Key Approach to Land Reform and Pro-poor Agricultural Development. In: *Conference on Strategies to Overcome Poverty & Inequality*. University of Cape Town, 3-7 September 2012.

Bacon, C.M., Getz, C., Kraus, S., Montenegro, M. & Holland, K. (2012). The Social Dimensions of Sustainability and Change in Diversified Farming Systems. *Ecology and Society* 17(4): 41. http://dx.doi. [Accessed 18th August, 2016].

Baden-Fuller, C. & Haefliger, S. (2013). Business Models and Technological Innovation, *Long Range Planning* 46:419-426.

Baden-Fuller, C & Morgan, M. S. (2010). Business Models as Models, *Long Range Planning, Elsevier Ltd* 43:156-171.

Baird, L. & Meshoulam I. (1988). "Managing Two Fits of Strategic Human Resource Management", *Academic of Management Review* 13(1):116-128.

Balci, O. & Sargent, R. G. (1982). Some Examples of Simulation Model Validation Using Hypothesis Testing. Proceedings of the 1982 Winter Simulation Conference, San Diego, U.S.A. pp 261-269.

Banhazi, T.M., Lehr, H., Black, J.L., Crabtree, H., Schofield, P., Tschartke, M. & Berckmans, D. (2012). Precision Livestock Farming: International Review of Scientific and Commercial Aspects, *International Journal of Agricultural & Biological Engineering* 5(3):1-9.

Barker, JA (1992). *Paradigms: The business of discovering the future*. New York: Harper Business.

Baumol, W.J. (1993). Formal Entrepreneurship Theory in Economics; Existence and Bounds, *Journal of Business Venturing* 8:197-210.

Beltramello, A., Haie-Fayle, L. & Pilat, D. (2013). "Why New Business Models Matter for Green Growth" OECD Green Growth Papers, 2013-01, Publishing, Paris.

Berger, P.G. & Ofek, E. (1995). Diversification's Effect on Firm Value. *Journal of Financial Economics* 37(1):39-65.

Berckmans, D. (2004). Automatic on-line Monitoring of Animals by Precision Livestock Farming, Catholic University Leuven, *Laboratory for Agricultural Buildings Research*, http://www.labr.be [Accessed 6th May, 2016].

Berisha, G. & Pula, J.S. (2015). Defining Small and Medium Enterprises: a Critical Review. *Academic Journal of Business Administration, Law and Social Sciences* 1(1):17-28

Beverland, M. & Lockshin, L.S. (2001). Organizational Life Cycles in small New Zealand Wineries. *Journal of Small Business Management* 39(4):354-362.

Bhana, N. (2006). The Effect of Corporate Divestments on Shareholders Wealth: The South African Experience, Investment Analysts Journal 63:19-30.

Billet, M. & Mauer, D. (2000). Diversification and the Value of Internal Capital Markets: The Case of Tracking Stock, *Journal of Banking and Finance* 24(9): 1457-1490.

Birner, R. & Resnick, D. (2010). The Political Economy of Policies for Smallholder Agriculture, *World Development, Elsevier* 38(10):1442-1452.

Birner, R. & Resnick, D. (2005). Policy and Politics for Smallholder Agriculture, In: *The Future of Small Farms, Proceedings of a Research Workshop,* International Food Policy Research Institute (IFPRI), 2020 Vision Initiative, Overseas Development Institute (ODI), Imperial College, London, pp 283-311.

Bodnar, G.M, & Weintrop, J. (1997). The Valuation of the Foreign Income of U.S. Multinational Firms: A Growth Opportunities Perspectives, National Beauru of Economic Research, Working Paper Series, pp1-33. http://www.nber.org/papers/w5904 [Accessed 7th August, 2016].

Bodnar, G.M., Tang, C. & Weintrop, J. (1997). "Both Sides of Corporate Diversification: The Value Impacts of Geographic and Industrial Diversification", National Beauru of Economic Research, Working Paper Series 6224, http://www.nber.org/papers/w6224 [Accessed 7th August, 2016].

Bosma, N., Acs, Z., Autio, E., Coduras, A. & Levie, J., (2008). *Global Entrepreneurship Monitor 2008 Executive Report*. London, UK: London Business School, Santiago, Chile: Universidad Del Dasarrollo and Babson Park, M.A.: Babson College, pp. 1-67.

Bosma, N., & Levie, J. (2009). *Global Entrepreneurship Monitor 2009 Global Report*. Santiago, Chile: Universidad Del Dasarrollo and Babson Park, M.A.: Babson College and Reykjavik, Iceland: Reykjavik University, pp.1-72.

Bowman, M.S. & Zilberman, D. (2013). Economic Factors Affecting Diversified Farming Systems. *Ecology and Society*, 18(1):33. http://dx.doi.org/10.5751/ES-05574-180133 [Accessed 7th August, 2016].

Bowler, A., Deawood, M.S. & Page, S. (2006). *Entrepreneurship and Small Business Management*, Pretoria: Juta and Co. Ltd.

Boyle, R. & Desai, H. (1991). Turnaround Strategies for Small Firms, *Journal of Small Business Management* 29(3)33-42.

Bradely, R. (2010). Integrated Farming Systems, the Past or the Future? *Nuffield Australia Farming Scholars*, Project No. 0915, August.

Brewer, H. (1981) "Investor Benefits from Corporate International Diversification", *Journal of Quantitative Analysis* 16:113-126

Brettel, M., Strese, S. & Flatten, T. C. (2012). Improving the Performance of Business Models with Relationship Marketing Efforts – An Entrepreneurial Perspective, *European Management Journal* 30:85-98.

Brinkman, W.P. (2009). *Design of a Questionnaire Instrument, Handbook of Mobile Technology Research Methods*, ISBN 978-1-60692-767-0, Nova Publishers, New York, pp. 31-57.

Bruno, A.V., Leidecker, J.K. & Harder, J.W. (1987). Why Firms Fail. Business Horizons

30(2):50-58.

Bucherer, E., Eisert, U. & Gassmann, O. (2012). *Towards Systematic Business Model Innovation: Lessons from Product Innovation Management*, Blackwell Publishing Ltd. 21(2):183-197

Burns, P. (2001). *Entrepreneurship and Small Business*, Palgrave MacMillan.

Buso, N. (2003). Municipal Commonage Administration in the Free State province: Can municipalities in the current local government dispensation promote emerging farming? NSRC, October, pp. 1-72.

Campa, J. & S. Kedia, (1999) *Explaining the Diversification Discount*. New York University working paper, pp. 1-36.

Caribbean Agricultural Research and Development Institute (CARDI) (2010). A Manual on Integrated Farming Systems (IFS), *Agriculture Enterprise Development for Rural Belize (AED)*, BRDP Call for Proposal No.7 July.

Carree, M.A & Thurik, A.R., (2002). The Impact of Entrepreneurship on Economic Growth, Chapter prepared for the International Handbook of Entrepreneurship Research, edited by Zoltan Acs and David Audretsch, July 2002 Version, p.1-28.

Casadesus-Masanell, R. & Ricart, J. E. (2009). From Strategy to Business Models and Onto Tactics, Harvard Business School, *Working Paper* 10-036, pp. 1-43.

Cetorelli, N. (2003). Life-Cycle Dynamics in industrial Sectors: The Role of Banking Market Structure, *The Federal Reserve Bank of St. Louis Review* July/August 85(4):1-21.

Chaddad, F.R, & Cook, M.L. (2004). Understanding New Cooperative Model: An Ownership- Control Rights Typology, *Review of Agricultural Economics* 26(3):348-360.

Chandler, A.D, (1990). *Scale and Scope: the Dynamics of Industrial Capitalism*. Cambridge: The Belknap Press of Harvard University Press.

Chandler, A.D, (1962). *Strategy and Structure*. MIT Press: Cambridge, MA.

Chandra, V., Moorty, L., Nganou, J., Rajaratnam, B. & Schaefer, K. (2001). *Constraint to Growth and Employment in South Africa*. World Bank Report No 2:1-82.

Chen, S. & Ravaillon (2004). *"How have the World's Poor Fared since the Early 1980s?"* World Bank Research Observer 19(1):141-169.

Cheng, P. & Roulac, S.E. (2007). "Measuring the Effectiveness of Geographic Diversification" *Journal of Real Estate Portfolio Management* 13(1):1-44.

Chesbrough, H. (2010). Business Model Innovation: Opportunities and Barriers, *Long Range Planning (LRP), Elsevier* Ltd 43:354-363.

Chesbrough, H. (2006). *Open Business Models: How to Thrive in the New Innovation Landscape.* Harvard Business School Press, Boston, MA.

Chesbrough, H.W. & Appleyard, M. M. (2007). Open Innovation & Strategy*, California Management Review* 50(1):57-76.

Chevalier, J. (1999). Why Do Firms Undertake Diversifying Mergers? An Analysis of the Investment Policies of Merging Firms, University of Chicago working paper. University of Chicago, pp. 1-33.

Chow, H.K. & Choy K.M. (2009) Analyzing and Forecasting Business Cycles in a Small Open Economy: A Dynamic Factor Model for Singapore, *OECD Journal: Journal of Business Cycle Measurement and Analysis* 2009(1): 19-41.

Choy, K.M. (2009). Trade Cycle in a Re-export Economy: The Case of Singapore. Economic Growth Centre, Working Paper Series 2009/05. Nanyang Technological University, Singapore, pp. 1-31.

Christensen, C. (2008). *Disruptive Innovation and Catalytic Change in Higher Education.* Forum for the Future of Higher Education, pp. 43-46.

Churchill, N.C. & Lewis, V.L. (1993) The Five Stages of small business growth. *Harvard Business Review* 61(3):30-50.

CIDB (1963). Import and Export Control Act 44 of 1963, (http://www.cidb.org.za/Documents/PDM/Comp_Leg/act45of1963.pdf). [Accessed 27th April, 2016].

Coase, R.H. (1937). “The Nature of the Firm”. *Economica* (N.S.) 4:386-405.

Cohen, L; Manion, R & Morrison, K. (2012) Research Methods in Education (6th ed). New York: Rutledge. http://www.sagepub.com/upm-data/43179_2.pdf Research Philosophy and Quantitative Interviews, p15. [Accessed 27th April, 2016].

Conner, D.S., Hamm, M.W., Smalley, S.B., & Williams, D. (2005). Pasture-based Agriculture: Opportunities for Public Research Institutions, The C.S. Mott Group for Sustainable Food System at MSU. www.mottgroup.msu.edu, [Accessed 2 May 2016].

Conner, D.S., Campbell-Arvai, V. & Hamm, M.W. (2007). Value in the Values: Pasture-raised Livestock Products offer Opportunities for reconnecting Producers and Consumers. *Renewable Agriculture and Food Systems*: 23(1): 62-69 Cambridge University Press.

Cook, M.L., Chaddad, F.R. & Iliopoulos, C. (2004). Advances in Cooperative Theory Since 1990: A Review of Agricultural Economics Literature. In G.W.J Hendrikse, Restructuring Agricultural Cooperatives, 65-90.

Creswell, J.W (2009) *Research Design, Qualitative, Quantitative, & Mixed Methods Approaches*, Sage Publications, Inc.

Creswell, J.W (2012) Educational Research. Planning, Conducting, and Evaluating Quantitative and Qualitative Research. Fourth Edition. Pearson Education, Inc. Boston, U.S.A.

Creswell, J.W. (2013). *Qualitative Inquiry & Research Design, Choosing Among Five Approaches*. Sage Publications, Inc. Thousand Oaks, USA.

Creswell, J.W. (2014). *Research Design, Qualitative, Quantitative, & Mixed Methods Approaches*. Fourth Edition. Sage Publication, Inc.

DAFF (2010). Agricultural Marketing Policy for the Republic of South Africa. June,

DAFF (2011). *Agricultural Business Plan Guidelines*. Directorate Co-operative & Enterprise Development, June.

DAFF (2011). Agricultural Business Plan Guidelines. www.nda.agric.za/doaDev/AgricDevFinance/ Accessed 2 August 2016.

DAFF (2011). *South African Agricultural Production Strategy,* Concept Document 2011 – 2025.

DAFF (2012). *Profile of the South African Pork Market Value Chain*, Directorate Marketing.

DAFF (2015). *Profile of the South African Pork Market Value Chain*, Directorate Marketing.

DAFF (2013). Abstract of Agricultural Statistics.

DAFF (2014). *Economic Review of the South African Agriculture*. Pretoria.

Davidson, P. (2004) *Researching Entrepreneurship.* New York: Springer Verlag.

Dawes, M., Murota, R., Jera, R., Masara, C & Sola, P. (2009). *Inventory of Smallholder Contract Farming Practices: Revised Final Report,* December 2009, SNV Netherlands Development Organization, pp. 2-48.

Delport, C.S.L. & Fouche, C.B. (2005). Quantitative Data Collection Methods. In De Vos, A.S. (ED.), Strydom, H., Fouche, C.B. & Delport, C.S.L. *Research at Grassroots: For the Social Sciences and Human Service Professionals*. 3rd Ed. Van Schaik, Pretoria.

Delgado, C.L. (2006) Sources of Growth in Smallholder Agriculture in Sub-Saharan Africa: The Role of Vertical Integration of Smallholders with Processors and Marketers of High Value-Added Items*, Agrekon* 38:165-189 (Special Issue).

De Nies, T. (2013). *Constraints of the PROV Data Model*. iMind - Ghent University. https://www.w3.org/TR/prov-constraints/#uniqueness-constraints. [Accessed 04 August 2016]

De Villiers, M. R. (2012). Models for Interpretive Information Systems Research, Part 2: Design Research, Development Research, Design-Science Research – A Meta-Study and Examples. *Information Science Reference* (an imprint of IGI Global).

Dodge, H.R., Robbins, J,E. (1992). “An empirical investigation of the organizational Life Cycle model for small business development and survival”, *Journal of Small Business Management* 30(1): 27-37.

Dodson, S.C.A. (2013). *The Native Land Act of 1913 and its legacy*. Johannesburg, Forum. Advocate, April Edition. pp. 29-31.

Donaldson, L (2006). *The Contingency Theory of Organizational Design: Challenges and Opportunities.* Springer, US.

Dietze, K. (2011*). Pig for Prosperity, Rural Infrastructure and Agro- Industries Division.* Food and Agriculture Organization of the United Nations, Diversification Booklet Number 15, Rome, pp. 1-61.

Dixon, J., Tanjeri-Abur, & Wattenbach, H. (2004*). Framework for Analyzing Impacts of Globalization on Smallholders, Globalization and Policy Analysis*. Agricultural Management, Marketing and Finance Occasional Paper. http://www.fao.org/docrep/007/y5784e/y5784e00.htm [Accessed 20 May, 2016].

Drucker, P.F. (1954). *“The Practice of Management”* New York: Harper & Row.

DTI (2004). Co-operative Development Policy for South Africa. www.dti.za.gov. [Accessed 20 September, 2016].

DTI (2008). Department of Trade and Industry Annual Report. http://www.gov.za/sites/www.gov.za/files/dti%20AnnualReport0708.pdf [Accessed 20 September, 2016].

DTI (2012). Integrated Strategy on the Development and Promotion of Co-operatives 2012 - 2022, http://www.gov.za/sites/www.gov.za/files/33943_gen34.pdf [Accessed 2 October, 2016].

Dzansi, D.Y. (2011). Social Responsibility of Small Businesses in atypical Rural African Setting: Some Insights from a South African Study, *African Journal of Business Management* 5(14):5710-5723.

Eaton, C & Shephard, A (2001) Contract Farming, Partnership for Growth, A guide, FAO, *Agricultural Services Bulletin*, 145, Rome, pp. 1-161.

Eaton, C. & Shepherd, A.W. (2001). *Contract Farming, Partnership for Growth*, FAO of the United Nations, Agricultural Services Bulletin, (145):1-182.

ECSECC (2013). Quarterly Economic Update, Eastern Cape Social Economic Consultative Council, 1st Quarter, P1, July.

Ehling, P. & Ramos, S.P. (2005). *"Geographic versus Industry Diversification, Constraints Matter"* Working Paper Series, January, 425:1-50. https://www.ecb.europa.eu/pub/**pdf**/scpwps/ecbwp425.**pdf**?...[Accessed 2 October, 2016].

Emmons, W.R, Gilbert, R.A & Yeager, T.J. (2001*). "The Importance of scale Economics and Geographic Diversification in Community Bank Merger"* Research Division of The Federal Reserve Bank of St. Louis, USA. Working Paper Series, 2001-024.

Erdorf, S., Hartmann-Wendels, T., Heinrichs, N. & Matz, M. (2012). *Corporate Diversification and Firm Value: A Survey of Recent Literature*. CGS Working Paper 3(1):1-45.

Essink, S. (2013). The Community College Baccalaureate: A mixed Methods Study of Implementation and Best Practices. Doctoral Dissertation, University of Nebraska, Lincoln, U.S.A http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1156&context=cehsedaddiss [Accessed 26 July 2016].

Eukeria, M. & Favourate, S. (2014). Diversification as a Corporate Strategy and Its Effects on Performance: A Study of Zimbabwean Listed Conglomerate Food and Beverages Sector, International Journal of Economics and Finance 6(5):182-195.

European Institute for Sustainable Development in Agriculture, (EISA) (2010). *European Integrated Farming Framework*, Revised Version, August.

Food and Agricultural Organization (2001). Mixed Crop-Livestock Farming: A Review of Traditional Technologies based Literature and Field Experience. Animal Production and Papers 152. Rome: FAO.

http://www.fao.org/docrep/004/Y0501E/y0501e03.htm#P74_17109 [Accessed 19th November, 2016].

Fatemi, A. (1984). "Shareholder Benefits from Corporate Industrial Diversification", *Journal of Finance,* (39):1325-1344

Fatoki, O.O., & Smith, A.V.A. (2011). Constraints to Credit Access by new SMEs in South Africa: A Supply-Side Analysis, *African Journal of Business Management* 5(4):1413-1425, 18 February, 2011

FinMark Trust (2006). Small Business Survey Report (2006), Retrieved from http://www.finmark.org.za/annual-report-2006-2/ [Accessed 24th June, 2015]

Fiss, P.C. (2011). Building Better Causal Theories: A Fussy Set Approach to Typologies in Organization Research, *Academy of Management Journal* 54(2):393-420.

Fowler, F.J. (2009). Survey Research Methods, Applied Social Research Methods, *Sage Publications*, Inc., Fourth Edition.

Frankfort-Nachmias, C. & Leon-Guerrero, A. (2011). Social Statistics for a Diverse Society, *Sage Publication*, Inc., (6th Ed).

Freeman, C. & Perez, C. (1988). '*Structural Crises of Adjustment, Business Cycles and Investment Behaviour'*, In Dosi G., Freeman C., Nelson, R., Silverberg G. and Soete L. (eds) Technical Change and Economic Theory, Pinter, London pp. 38-66.

Galbraith, J. (1982). "The Stages of growth", *Journal of Business Strategy,* 3(4):70-79.

Gay, B & Weaver, S. (2011). Theory Building and Paradigms: A Primer on the Nuances of Theory Construction, *American International Journal of Contemporary Research* 1(2):24-32.

Global Competitive Report 2010/11, World Economic Forum.

Global Entrepreneurship Monitor, GEM SA Report (2010).

Global Entrepreneurship Monitor, GEM SA Report (2016).

Goss, D. (1991). *Small Business and Society*, Routledge, London, pp 1-192.

Gort, M. (1962). *Diversification and Integration in American Industry.* Princeton University Press, Princeton, NJ.

Govindarajan, V. Kopalle, P. K., Danneels, E. (2011). The effects of mainstream and emerging customer orientations on radical and disruptive innovations. *Journal of Product and Innovation Management* 28(S1):121–132.

Gradi, C. & Knobloch, C. (2010). Inclusive *Business Guide: How to Develop Business and Fight Poverty*, Endeva, Berlin.

Graham, J., M. Lemmon & Wolf, J. (2002). Does Corporate Diversification Destroy Value? *Journal of Finance* 57(2):695-720.

Gray, E.D. (2004). *Doing Research in the Real World*, Sage Publications, London.

Gregory, S.A. (1966). *"The Design Method*", Springer Science+Business Media, LLC, New York, pp.1-338.

Greiner, L.E. (1972). Evolution and Revolution as Organizations Grow: A company's past has clues for management that are critical to future success. Reprinted in 1997 by *Family Business Review* 10(4):397-410.

Greenberg, S. (2010). Status Report on Land and Agricultural Policy in South Africa, PLAAS, Research Report, www.plaas.org.za [Accessed 14th June, 2016].

Guba, E.G. & Lincoln, Y.S. (1994). Competing Paradigms in Qualitative Research. In Denzin, Norman K. and Lincoln, YS (Eds) Handbook of Qualitative Research. Thousand Oaks (CA): *Sage Publications*: pp. 105-117.

Habtay, S.R. & Holemen, M. (2012). From Disruptive Technology to Disruptive Business Model Innovation: In *Need for an Integrated Conceptual Framework*, Creativity and Innovation Management. Forthcoming.

Halog, A. & Manik, Y. (2011). Advancing Integrated Systems Modelling Framework for Life Cycle Sustainability Assessment. *Sustainability* 3(2) Pp 469-499 www.mdpi.com/journal/sustainability [Accessed 7 April 2016].

Hancock, B., Ockleford, E. & Windridge, K. (2009). An Introduction to Qualitative Research. The NIHR RDS EM / YH, 2007.

Hanks, S.H., Watson, C.J., Jansen, E. & Chandler, G.N. (1993). Tightening the Life Cycle Construct: A Taxonomic Study of Growth Stage Configurations in High-Technology Organizations. Entrepreneurship Theory and Practice. http://www.highbeam.com/ [Accessed 3 June 2016].

Harper, N.W.C. & Viguerie, S.P. (2002). *"Beyond Focus: Diversifying for Value"*, McKinsey on Finance, Winter, pp. 5.

Hartmann, M. et al. (2013). The Performance Effect of Business Model Innovation: An Empirical Analysis of Performance of Pension Funds. 35th DRUID Celebration Conference 2013, Barcelona, Spain, June 17-19.

Heale, R., & Twycross, A. (2015). Validity and Reliability in Quantitative Studies. Research Made Easy. http://ebn.bmj.com/content/18/3/66.full.pdf+html. [Accessed August, 2016].

Holcombe, R.G. (1998), Entrepreneurship and Economic Growth: *The Quarterly Journal of Austrian Economics,* 1:45-62.

Holloway, S.S. & Sebastiao, H.J. (2010). The Role of Business Model Innovation in the Emergence of Markets: A Missing Dimension of Entrepreneurial Strategy? *Journal of Strategic Innovation and Sustainability* 6(4):86-100.

Huarng, K. (2013). A Two-tier Business Model and its realization for Entrepreneurship, *Journal of Business Research*, 66(2013):2102-215.

Hussain, M.N. (2000). *Linkages between SMEs and Large Industries for Increased Markets and Trade: An African Perspective,* African Development Bank, Economic Research Papers 53:1-14.

Hyland, D. (2003). The Effect of Diversification on Firm Value: A Pre- and Post-Diversification Analysis. *Studies in Economics and Finance* 21(2):22-39.

Hyland, D. & Diltz, J.D. (2002). Why Firms Diversify: An Empirical Examination. *Financial Management*, 31(1):51-82.

IBM SPSS Statistics, Version 16.0 (2015).

International Fund for Agricultural Development (2010). *Integrated Crop-*

Livestock Farming Systems, http://www.ifad.org/lrkm/factsheet/integratedcrop.pdf [Accessed 4th August, 2016].

Jack, B. & Clarke, A. (1998). *The Purpose and use of Questionnaires in Research.* Professional Nurse (14)176-179.

Jarzabkowski, P. (2005). *Strategy as Practice: An Activity-Based Approach. Introduction. A New Perspective*, London, Sage.

Jenkins, B., Akhalkatsi, A., Roberts, B. & Gardiner, A. (2007). *Business Linkages: Lessons, Opportunities, and Challenges*. IFC, International Business Leaders Forum, and the Kennedy School of Government, Harvard University

Jones, N. (2010). *SMEs Life Cycle – Steps to Failure or Success?* pp. 1-14 www.moyak.com/papers/small-medium-entreprises [Accessed 7 July 2016].

Joyce, A., Paquin, R. & Pigneur, Y. (2015). The Triple Layered Business Model Canvas. A Tool to Design More Sustainable Business Models. *Journal of Cleaner Production* 135(2015):1474-1486.

Justo, R., Maydeu, A. & De Castro, J.O. (2005). *Indicators of Entrepreneurship Activity: Some Methodological Contributions*, European Council for Small Business and Entrepreneurship (ECSB), 2nd Inter-RENT Online Publication.

Karlsson, C., Friis, C. & Paulsson, T. (2004). Relating Entrepreneurship to Economic Growth[1] (CESIS/JIBS) Electronic Working Paper Series, September http://ww.infra.kth.se/cesis/research/publications/ [Accessed 9 July 2016].

Kaul, A. & Wu, B. (2016) Capabilities-Based Perspective on Target Selection in Acquisitions. *Strategic Management Journal* (37):1220-1239.

Kazanjian R.K. (1988). Relation of Dominant Problems to Stages of Growth in Technology-Based New Ventures. *Academy of Management Journal* 31(2):257-279.

Kemm, E.H (1976). Efficiency the Key to Future Pig Production, Animal and Dairy Science Research Institute, Irene, *South African Journal of Animal Science*, (6):155-162.

Kemm, E.H. (1993) *Pig Production in South Africa*, Agricultural Research Council (ARC) Bulletin, 427. Pretoria: V and R Printers.

Khurana, V.K. (2013). Innovation Process and Models, http://www.slideshare.net/VijayKrKhurana/innovation-process-models

Klaas, P. (2004). *Towards a Concept of Dynamic Fit in Contingency Theory*, http://www.systemdynamics.org/conferences/2004/SDS_2004/PAPERS/181KLAAS.pdf, [Accessed 20th September 2016].

Klein, P.G. and Lien L.B. (2009). "Diversification, Industry Structure, and Firm Strategy: An Organizational Economics Perspective, *Economic Institutions of Strategy Advances in Strategic Management* (26):289-312

Konishi, S.; Kitagawa, G. (2008). *Information Criteria and Statistical Modeling*. Spring.

Korb, K. A. (2002). Conducting Educational Research. http://korbedpsych.com/R02Varibles.html, [Assessed 21 July, 2015].

Kremen, C., Iles, A. & Bacon, C. (2012). Diversified Farming Systems: An Agro-ecological, Systems-based Alternative to Modern Industrial Agriculture. Ecology and Society, 17(14): 44. http://dx.doi.org/10.5751/ [Accessed 3 August, 2016].

Kroll, T. & Neri, M. (2009). Design for Mixed Methods Research. In S. Andrew & E.J. Halcomb (Eds.), Mixed Methods Research for Nursing and Health Sciences. West Sussex: Wiley-Blackwell.

Lahiff, E., Davis, N. & Monenzhe, T (2011). *Inclusive Business Models in the Agricultural Sector: Case Studies from South Africa's Limpopo Province*, PLAAS, Cape Town, 22nd November.

Lang, L.H.P. & R.M. Stulz, (1994). Tobin's q, Corporate Diversification, And Firm Performance. *Journal of Political Economy*, 102(6):1248-1280.

Laughlin, R. (1995). Methodological themes – empirical research in accounting: Alternative approaches and a case for ''middle-range'' thinking. *Accounting, Auditing and Accountability Journal* 8(1):63–87.

Lekule, F.P. & Kyvsgaard, N.C. (2013). Improving Pig Husbandry in Tropical

Resource-Poor Communities and its Potential to Reduce Risk of Porcine Cysticercosis, Acta Tropica (87):111-117, www.sciencedirect.com [Accessed 4 April 2016].

Lester, D.L. Parnell, J.A., Carraher, S. (2003). Organization life cycle: A five-stage empirical scale. *The international Journal of Organizational Analysis* 11(4): 339-354.

Leung, C.F. & Suen W. (2001) Some Preliminary Findings on Hong Kong Business Cycles, *Pacific Economic Review* (6):37-54.

Levy, B, Berry, a, Itoh, M, Kim, I., Nugent, J. & Urata, S. (1994). *"Technical and Marketing Support Systems for Successful Small and Medium-size Enterprises in Four Countries"*. World Bank Policy Research Working Paper 1400, Washington, DC. pp, 1-46.

Linder, J. & Cantrell, S. (2000). *Changing Business Models: Surveying the Landscape*, A Working Paper from Accenture, Institute for Strategic Change, May 24, pp. 1-15

Lipton, M. (2005). *The Family Farm in a Globalizing World*. 2020 Discussion Papers 40. International Food Policy Research Institute. Washington, DC. pp. 1-29.

Liu, Y., Mauer, D. C. & Zhang, Y. (2016). *The Hedging Benefits of Domestic and Global Diversification: Evidence from Economic Downturns*. Social Science Research Network. https://ssrn.com/abstract=2735922 [Accessed 29 November, 2016].

Mäkinen, S., & Seppänen, M. (2007). Assessing Business Model Concepts with Taxonomical Research Criteria: A Preliminary Study, *Management Research News* 30(10):735-748.

March, S.T. & Smith, G.F. (1995*). "Design and Natural Science Research on Information Technology."* Decision Support Systems 15(4):251-266.

Matsusaka, J. (2001). Corporate diversification, value maximization, and organizational capabilities. *The Journal of Business.* 74(3):409-431.

McCaslin, M. (2008). Pragmatism. In Lisa M. Given (Ed). *The Sage Encyclopedia of Qualitative Research Methods.* (pp. 672-676). Thousand Oaks, CA: Sage Publications, Inc. doi:10.4135/978142963909.n336

McDermott, J.J., Staal, S.J., Freeman, H.A., Herreo, M., Van de Steeg, J.A. (2010). *Sustaining Intensification of Smallholder Livestock System in the Tropics,* Livestock Science vol. 130(1-3) 95-109. www.elsevier.com/locate/livsci [Accessed 2 August, 2016].

McPherson, M.A. (1996). Growth of Micro and Small Enterprises in Southern Africa. *Journal of Development Economics* 48(1996): 253-277.

McHale, F.J. (1965). *"World Design Science Decade, 1965-1975".* World Resources Inventory.

McMillan, J.H., & Schumacher, S. (2006). *Research in Education: Evident Based Enquiry*. Sixth Edition. Pearson Education, Inc. Boston, U.S.A.

McQuarrie, EF (2012). *The Marketing Research Toolbox, A concise Guide for Beginners,* Sage Publication, 3rd Ed.

Mead, D.C. & Liedholm, C. (1998) "The Dynamics of Micro and Small Enterprises in Developing Countries. *World Development* (26):61-74

Michel, A. & Shaked, I. (1986). "Multinational Corporations vs. Domestic Corporations: Financial Performance and Characteristics", *Journal of International Business Studies* (10):53-66.

Mikhail, A. & Shawky, H. (1979). "Investment Performance of U.S.-based Multinational Corporations", *Journal of International Business Studies* (10):53-66.

Miller, R., Action, C., Maltby, J. & Fullerton, D. (2009). *SPSS for Social Scientists*. New York: McMillan.

Miller, D, & Friesen P.H. (1984). A longitudinal study of the corporate life cycle. *Management Science* 30(10):1161-1183.

Miller, D, & Friesen P.H. (1980). Momentum and Revolution in Organizational Adaptation. *Academy of Management Journal* 23(4):591-614.

Mmbengwa, V.M (2009). *Capacity Building Strategies for Sustainable Farming*

SMMEs in South Africa, PhD Dissertation, University of the Free State, Bloemfontein.

Mmbengwa, V.M, Ramukumba, T., Groenewald, J.A., van Schalkwyk, H.D., Gundidza, M.B. & Maiwashe, A.N. (2011). Factors that Influence the Success and Failure of Land Bank Supported Farming Small, Micro and Medium Enterprises (SMMES) in South Africa, *Journal of Development and Agricultural Economics* 3(2):35-45 http://www.academicjournal.org/JDAE [Accessed 13 October, 2016].

Montsho, T. & Moreki, J.C. (2012). Challenges in Commercial Pig Production in Botswana, *Journal of Agricultural Technology* 8(4):1161-1170 http://www.ijat-aatsea.com

Morin, K.H., (2013). Value of a Pilot Study. *Journal of Nursing Education*. Editorial (52):547-548.

Morris, M., Schindehutte, M. & Allen, J. (2005). The Entrepreneur's Business Model: Toward a Unified Perspective. *Journal of Business Research,* 58(6):726-735.

Mugumbate, J. & Nyanguru, A. (2013). Exploring African Philosophy: The Value of Ubuntu in Social Work. African Journal of Social Work 3(1): 82-100.

Nduli, N. (1995). Report of the BATAT Technology Design Team, http://www.nda.agric.za/docs/batat/tech.htm [Accessed 13 August, 2016]

Nagel, T. (2008). *Introduction to Entrepreneurship and Small Business Management*. Pretoria: UNISA Press.

Nazarova, V. (2015). Corporate Diversification Effect on Firm Value (Unilever Group Case Study). *Annals of Economics and Finance* 16(1):173-198.

Neneh, N.B. & van Zyl, J.H. (2012). *Achieving Optimal Business Performance through Business Practices: Evidence from SMEs in Selected Areas in South Africa*, http://www.econ.ufs.ac.za/default.aspx?id=16 [Accessed 13 May, 2016].

Nicdao, R.C. (2015). Transformational Leadership Practices of SUC Presidents: A Triangulation Design Study. *World Journal of Educational Research* 2(2):1-9.

Nidumolu, R, Prahalad, C.K. & Rangaswami, M.R. (2009). Why Sustainability is Now the Key Driver of Innovation, *Harvard Business Review*, pp1-10, September. www.hbr.org [Accessed 10 April, 2016].

O'Brien, J.P, David, P., Yoshikawa, T., & Delios, A. (2013). How Capital Structure Influences Diversification Performance: A Transaction Cost Perspective. *Strategic Management Journal* 35(7):1013-1031.

OECD (2006). *Agricultural Policy Reform in South Africa*, Policy Brief, OECD, April.

OECD (2006). *OECD Review of Agricultural Policies, South Africa, Highlights and Policy Recommendations*. OECD Publishing.

OECD (2006). *Review of Agricultural Policies*: South Africa, OECD Publishing.

Onwuegbuzie, A.J. (2016). A Call for Conducting Multivariate Mixed Analyses. *Journal of Educational Issues.* ISSN 2377-2263, 2(2):1-30.

Onwuegbuzie, A.J. & Collins, K.M.T. (2007). A Typology of Mixed Methods Sampling Design in Social Research, *The Qualitative Report* 12(2):281-316. http://www.nova.edu/sss/QR/QR12-2/onwuegbuzie2.pdf Accessed June, 2016.

Onwuegbuzie, A.J. & Johnson, R.B. (2006). *The Validity Issue in Mixed Research*, Mid-South Educational Research Association, Research in the School 13(1):48-63.

Onwuegbuzie, A., & Leech, N. (2005). On becoming a pragmatic researcher: The Importance of Combining Quantitative and Qualitative Research Methodologies. *International Journal of Social Research Methodology* 8(5):375-387.

Ormerod, R. (2006). The History and Ideas of Pragmatism, *Journal of the Operational Research Society* (57):892-909.

Osterwalder, A. (2004). *The Business Model Ontology: A Proposition in a Design Science Approach*, PhD Thesis, Licencié en Sciences Politiques de l'Université de Lausanne. pp 1-169.

Osterwalder, A. & Pigneur, Y. (2010). Aligning Profit and Purpose through Business

Model Innovation 3:1-17.

Osterwalder, A. & Pigneur, Y. (2009). Business Model Generation, www.businessmodelgeneration.com [Accessed 29 November, 2016].

Osterwalder, A., Pigneur, Y. & Tucci, C. L. (2005). *Clarifying Business Models: Origins, Present, and Future of the Concept,* Communication of the Association for Information Systems (CAIS) 15:1-40.

Pansiri, J. (2009). Evolution of a doctoral Thesis Research Topic and Methodology: A Personal Experience, *Elsevier*, Tourism Management 30:83-89 (www.elsevier.com/locate/tourman) [Accessed 10 August, 2016].

Pasanen, M. (2005). *Tracking Small Business Failure Factors and Trajectories*, European Council for Small Business and Entrepreneurship (ECSB), 2nd Inter-RENT Online Publication. Pp. 93-114.

Penrose, E.T. (1959). The Theory of the Growth of the Firm. Oxford University Press: New York.

Phengsavnh, P. & Stür, W. (2008). *Farmer-led Red Research in Village Pig Production in Lao PDR*. In: Thorpe W & Tesfaye Jemaneh (eds), Pig Systems in Asia and the Pacific: How Can Research and Development Enhance Benefits to the Poor? Proceedings of a regional workshop held in Bangkok, Thailand, 23-24 November 2006, co-organized by APHCA, FAO-RAP and ILRI. ILRI (International Livestock Research Institute), Nairobi, pp.57-63.

Pirog, R. (2004). *Sharing Risks and Rewards across Partners in Pastured Livestock Value Chains*, Animals in the Food System Conference, Kellog Biological Station, Hickoy Corners, Michigan, November 2-4, pp: 1-14.

PLAAS (2014). Inclusive Business Models in Agriculture? Learning from Smallholder Cane Growers in Mozambique, Policy Brief 66, March www.future-agricultures.org [Accessed 15 August, 2016].

Porter, M.E. (1990). *The Competitive Advantage of Nations*, New York: Free Press.

PRC (2011). Inclusive Business through Partnerships: A Special Contribution to

Fourth High Level Forum on Aid Effectiveness, Partnerships Resource Centre 29 Nov – Dec 1, Busan, Korea, pp. 1-39.

Preston, T.R. (2000). Livestock Production from Local Resources in an Integrated Farming System; a Sustainable Alternative for the Benefit of Small Scale and the Environment. Workshop Seminar, SAREC-UAF. http://www.mekarn.org/sarpro/preston.htm [Accessed 30 December, 2016].

Prowse, M (2012). *Contract Farming in Developing Countries – A Review*, Institute of Development Policy and Management, University of Antwerp, Imprimerie de Montligeon, pp.1-97.

Quinn, R. E. & Cameron, K. (1983). ‘‘Organizational lifecycle and the shifting criteria for effectiveness’’, *Management Science* 29(1):33-51.

Ramaila, M., Mahlangu, S. & du Toit, D. (2011). *DAFF, Agricultural Productivity in South Africa: Literature Review*, Directorate: Economic Services Production Economics Unit, pp. 1-29.

Rattray, J. & Jones, M.C. (2007). Essential Elements of Questionnaire Design and Development. *Journal of Clinical Nursing* 16(2):234-243.

Regner, P. (2008). Strategy-as-practice and dynamic capabilities: Steps Towards a Dynamic View of Strategy, *Human Relations* 61(4):565-588.

Robson, C. & McCartan, K. (2016). *Real World Research. A Resource for Social Research Methods in Applied Settings,* Fourth Edition. John Wiley & Sons Ltd, UK.

Robson, C. (2011). *Real World Research, A resource for Users of Social Research Methods in Applied Setting*, John Willey and Sons, Ltd Publications. 3rd Edition SAPPO: http://www.sapork.biz/about-sappo [Accessed 30 July, 2016].

Rogerson, C.M. (2000). Successful SMEs in South Africa: the case of clothing producers in the Witwatersrand”, *Development Southern Africa* 17(5):667-716.

Rose, S., Spinks, N. & Canhoto, A. I. (2015). *Management Research: Applying the Principles*. Routledge, New York.

RSA (2012). Codes of Good Practice on Broad-Based Black Economic Empowerment.

Issued in terms of Section 9(1) of the B-BBEE Acts 53, 2003, Notice 485 of 6 June, Gazette No. 35423:3.

RSA (2008). BBBEEE Transformation Charter for Agriculture. Gazette No. 30886, 20 March.

RSA (1981). Co-operative Act, 1981 (Act, No. 91 of 1981).

RSA (1922). Cooperative Society Act of 1922 (Act No. 28 of 1922).

RSA (2005b). Cooperative Act of 2005 (Act No. 14 of 2005).

Rumelt, R. (1974). Strategy, *Structure, and Economic Performance*. Harvard Business School Press, Boston.

Rumelt, R. (1982). Diversification, Strategy and Profitability, *Strategic Management Journal* 3(4):359-369.

Sako, M. (2012). *Business Models for Strategy and Innovation, Technology Strategy and Management*, Viewpoints, Communications of the ACM 55(7):22-24

Sandrey, R. & Vink, N. (2006). *How can South Africa Exploit New Opportunities in Agricultural Export Markets? Lessons from the New Zealand experience*, tralac Working Paper, No. 19. Stellenbosch: US Printers, pp. 1-54.

Sapsford, R. & Jupp, V. (2006). *Data Collection and Analysis*, Sage Publications Ltd, London, 2nd Edition.

Santalo, J. & Becerra, M. (2004). *The Effect of Diversification on Performance Revisited: Diversification Discount*, Premium, or Both? (Submitted for presentation at the 2005. Academy of Management Meetings in Hawaii).

Santalo, J. & Becerra, M. (2009). *Theory* of the Firm for Strategic Management: Economic Value analysis (1st ed), United Kingdom: Cambridge University Press.

Sargent, R. G. (2010). A New Statistical Procedure for Validation of Simulation and Stochastic Models, http://www.surface.syr.edu/cgi/viewcontent.cgi?article=1175&context=eecs [Accessed 03 August 2016].

Schaltegger, S., Lüdeke-Freund, F & Hansen, E.G (2011). Business Cases for Sustainability and the Role of Business Model Innovation, Developing a Conceptual Framework, Centre for Sustainable Management. pp. 1-32.

Scheers, L.V. (2011). SMEs' Marketing Skills Challenges in South Africa, *African Journal of Business Management* 5(13):5048-5056.

Schmitz, H. (1990). *"Flexible Specialization in Third World Industry: Prospect and Research Requirements"*. Discussion Paper DP/18/1990 International Institute for Labour Studies, Geneva.

Schmitz, H. (1992). *"Global Competition and Local Cooperation: Success and Failure in Sinos Valley"*, Brazil. World Development 27:1627-50

Schumpeter, J.A. (1934). *The Theory of Economic Development*, Cambridge, MA: Harvard University Press.

Schick, A. (2005). Sustainable Budget Policy: Concepts and Approaches, EOCD *Journal on Budgeting* 5(1):107-126. http://www.oecd.org/gov/budgeting/43481125.pdf [Accessed 12 August 2016].

Schultz, L. (2007). Using Your TI-83/84 Calculator for Hypothesis Testing: The Chi-Square Goodness-of-Fitness Test, Laura Schultz.

Scotland, J. (2012). Exploring the Philosophical Underpinnings of Research: Relating Ontology and Epistemology to the Methodology and Methods of the Scientific, Interpretive, and Critical Research Paradigms, Canadian Centre of Science and Education 5(9):1-16.

Scrase, I., Stirling, A., Geels, F.W. & Smith, A. (2009). *Transformative Innovation: A Report to the Department for Environment, Food and Rural Affairs*, SPRU – Science and Technology Policy Research, University of Sussex, pp. 1-67.

Servaes, H. (1996). The Value of Diversification during the Conglomerate Merger Wave. *Journal of Finance* 51(4):1201-1225.

Seifi, A., Moosavi, S.V. & Ardestani, E. (2012). A conceptual Framework for Evaluating New Business Opportunities for Corporate Diversification. *Journal of Enterprise Transformation* 2(2):105-129.

Shyu, J. & Chen, Y. (2009). Diversification, Performance, and the Corporate Life Cycle, Emerging Markets Finance & Trade, M.E. Sharpe, Inc. 45(6):57-68.

Siguaw, J.A., Simpson, P.M. & Enz, C.A. (2006). Conceptualizing Innovation Orientation: A Framework for Study and Integration of innovation Research, *Journal of Production Innovation* Management 23(6):556-574.

Singh, K. & Mahmood, I.P. (2009). Challenges of Diversification for SMEs, *Business Times*, pp13, 22 October 2009 Edition.

Singh, S. (2005). *Contract Farming for Agricultural Development and Diversification in Punjab: Problems and Prospect*, Indian Institute of Management, Ahmedadab, *Journal of Punjab Studies* 12(2):251-270.

Singleton, R.A (Jr.), Straits, B.C and Straits, M.M. (2010). *Approaches to Social Research*, New York Oxford University Press, 5th Ed.

Small Business Project (2010). Is South Africa a Good Place to Do Business? *SME Alert.* November Edition, pp. 1-8.

Smith, K.G., Mitchell, T.R. & Summer, C.E. (1985). Top level management priorities in different stages of the organizational life cycle. *Academy of Management Journal* 28(4):799-820.

Staatz, J.M. (1989). Farmer Cooperative Theory: Recent Developments. ACS Research Report No. 84, Washington, DC: USDA.

Statistics South Africa (2013). General Household Survey.

Statistics South Africa (2007). Census of Commercial Agriculture, 2007, Free State. Provincial Statistics for Selected Products, Pretoria.

Statistics South Africa (2013). Mid-Year Population Estimate 2013.

Statistics South Africa (2013). http://www.statssa.gov.za/publications/Report-03-11-01/, [Accessed September 2016].

Statistics South Africa (2013). Gross Domestic Product, Annual/Regional Estimates 2002-2012.

Statistics South Africa (2016). Quarterly Labour Force Survey. Quarter 1: 2016.

Stel, A.V., Carree, M. & Thurik, R. (2004). The Effect of Entrepreneurship on National Economic Growth: An Analysis Using the GEM Database, Scientific Analysis of Entrepreneurship and SMEs, SCALES Paper N200320, pp. 1-21.

Stiglitz, J. & Weiss, A. (1981). Credit Rationing in Markets with Imperfect Information. *Am. Econ. Rev.* 71(3):393-410.

Strydom, H & De Vos, A. S. (1998). Sampling and Sampling Methods. In De Vos, A. S. research at Grass Roots*: A Primer to the Caring Professions*. Van Schaik Publishers, Pretoria.

Sulle, E. (2010). A Hybrid Business Model: The Case of Sugarcane Producers in Tanzania. In Cotula, L and Leonard, R. (eds*), Alternatives to Land Acquisitions: Agricultural Investment and Collaborative Business Models,* London, UK, International Institute for Environment and Development. pp. 71-80.

Sullivan, P. (2003*). Applying the Principles of Sustainable Farming, Fundamentals of Sustainable Agriculture*, Appropriate Technology Transfer for Rural Areas (ATTRA), NCAT, www.attra.ncat.org [Accessed 10 May 2016].

Teece, D. J. (2010). Business Models, Business Strategy and Innovation, *Long Range Planning, Elsevier Ltd*. 43:172-194.

Teece, D. J. (2007) Explicating Dynamic Capabilities: the Nature and Microfoundations of (Sustainable) Enterprise Performance*. Strategic Management Journal* 28(13):1319-1350.

Tengeh, R.K., Ballard, H & Slabbert, A. (2011). Framework for Acquiring the Resources Vital for the Start-up of a Business in South Africa: An African Immigrant's Perspective, *European Journal of Social Sciences* 23(3):361-381.

The Edinburg Group (2014). *Growing the Global Economy through SMEs*, http://www.edinburgh-group.org/media/2776/edinburgh_group_research_-growing_the_global_economy_through_smes.pdf. [Accessed 1 September 2016].

Thomas, D. E. & Loraine, E. (2004). "What is the shape of the Multinational-Performance" Relationship? *Multinational Business Review*. (www.findarticles.com/p/articles), [Accessed 25 July 2016].

Thurmond, V. A. (2001). The point of Triangulation. *Journal of Nursing Scholarship* 33(3):253-258.

Tipraqsa, P. (2006). Opportunities and Constraints of Integrated Farming System in Northeast Thailand. A Case Study of the Huai Nong Lan Catchment, Khon Kaen Province. *Ecology Development Series* 35:1-9.

Trochim, W.M.K. (2006). The Qualitative Debate. [Online]: http://www.socialresearchmethods.net/kb/qualdeb.php [Accessed 6 July 2016].

Tobin J. (1969) "A general equilibrium approach to monetary theory" *Journal of Money Credit and Banking* 1:15-29.

Tohidi, H. & Jabbari, M.M. (2012). Presenting New Product in the Process Innovation, Procedia - *Social and Behavioral Sciences, Elsevier* 31:891-893.

Ugwumba, C.O.A, Okoh, R.N, Ike, P.C, Nnabuife, E.LC, & Orji, E.C. (2010). Integrated Farming System and its Effect on Farm Cash Income in Akwa South Agricultural Zone of Anambra State, Nigeria, *American-Eurasian J. Agric. & Environ. Sci*. 8 (1):1-6.

Umesiobi, D.O. (2010). Boar Effects and their Relations to Fertility and Litter Size in Sows, *South African Journal of Animal Science* 40(5):471-475.

Umesiobi, D.O. (2008). Effects of Sexual Restraint and Stimulation of Boars on Fertility and Fecundity Rate in Sows. *The Philippine Agricultural Scientist* 91(1):79-85.

Umesiobi, D.O. (2000). *Animal Production 1. Basic principles and Practices*. Ben Blaise Publication, Owerri, Nigeria.

UNDP (2008). Creating Value for All: Strategies for Doing Business with the Poor, Growing Inclusive Markets, July, pp 1-156.

UNIDROIT (2014). Contract Farming Today: The Right Equilibrium..., Workshop Report, Study S80A-Doc. 18, Buenos Aires, 25 March.

Varyani, M.E. & Khammar, M. (2010). A Review of Strategy-as-Practice and the Role of Consultants and Middle Managers, Published Thesis, Chalmers University of Technology, Sweden.

Velez, A. (2015). Evaluating Research Methods: Assumptions, Strengths, and Weaknesses of Three Educational Paradigms, http://www.unco.edu/ae-extra/2008/9/velez.html, [Accessed 11 November, 2016].

Vermeulen, H., Kirsten, J. & Sartorius, K. (2008). Contracting Arrangements in Agribusiness Procurement Practices in South Africa, *Agrekon* 47(2):198-221.

Vermeulen, S. & Cotula, L., (2010). *Making the Most of Agricultural Investment: A Survey of Business Models That Provide Opportunities for Smallholders*, IIED/FAO/IFAD/SDC, London/Rome/Bern, ISBN: 978-1-84369-774-9, pp. 1-106.

Vorley, B, Lundy, M & Macgregor, J (2008). Business Models that are Inclusive of Small Farmers and SMEs, *Global Agro-Industries Forum, New Delhi*, 8-11 April 2008, www.regoverningmarkets.org [Accessed 2 May 2016].

Wang K. (2005). Business life Cycle and Five Elements Theory. Doctoral Program, Graduate Institute of Business Administration, National Taipel University, Taipei, Taiwan, R.O.C. pp: 1-13.

Weill, P., Malone, T.W., D'Urso, VT., Herman, G. & Woerner, S (2005). *Do Some Business Models Perform Better than Other? A Study of the 1000 Large US Firms*, Sloan School of Management, MIT, Working Paper No. 226. pp. 1-34.

Welter, F. (2005). *Challenges in Entrepreneurship and SME Research*, European Council for Small Business and Entrepreneurship (ECSB), 2nd Inter-RENT Online Publication. http://www.ecsb.org/wp-content/uploads/2014/06/inter-rent_2005.pdf [Accessed 28 November, 2016].

Wennekers, S. & Thurik, R. (1999). Linking Entrepreneurship and Economic Growth. *Small Business Economics* 13:27-55.

Westen, D. & Rosenthal, R. (2003). Quantifying Construct Validity: Two Simple Measures. *Journal of Personality and Social Psychology* 84(3):608-618.

Whetten, DA (1989). What Constitutes a theoretical Contribution. *Academic of management review* 14(4):490-495.

Williamson, O.E. (1979). Transaction Cost Economics: The Governance of Contractual Relations. *Journal of Law and Economics* 22:159-187.

Wind, Y. & Bell, D (2007). Marketing Segmentation in "The Marketing Book" (Ed): Baker and Hart.

Whittington, R. (2006). Completing the Practice Turn in Strategy Research. *Organization Study* 27(5):613-634. www.etu.org.za/toolbox/docs/government/sbd.html [Accessed 29th January 2016].

http://www.fs.agric.za/WARD.html [Accessed 3 August 2016].

www.un.org/millenniumgoals [Accessed 3 March, 2016].

www.nbi.org.za/publication/reports [Accessed 19 January, 2016].

Yan, Z. (2009). A new Methodology for Measuring Firm Life-Cycle Stages, *International Journal of Economic Perspectives*, Forthcoming, pp. 1-14.

Yeasmin, S. & Rahman, K. F. (2012) Triangulation' Research Method as the Tool of Social Science Research. *BUP Journal* 1(1):154-163.

Zeuli, K.A. & Cropp, R. (2004). *Cooperatives: Principles and Practices for the 21st Century*, Madison, New York.

Zhang, W., Ricketts, T.H., Kremen, C., Carney, K. & Swinton, S.M. (2007). Ecosystem Services and Dis-serves to Agriculture. Ecological Economics 64:253-260. http://dx.doi.org/10.1016/j.ecolecon.2007.02.024 [Accessed 29th January 2016].

Zott, C., Amitt. R & Massa, L. (2011) Business Model: Recent Development and Future Research, Journal of Management Sciences, 10th of May, 1-24, http://jom.sagepub.com/content/early/2011/04/29/0149206311406265

Zott, C. & Amit. R. (2007). The Fit Between Product Market Strategy and Business Model: Implications for Firm Performance, Strategic *Management Journal* 29: 1-26.

Zott, C. & Amit, R. (2001). Value Creation in e-Business, *Strategic Management Journal* 22:493-520.

Zott, C. & Amit, R. (2006). *Exploring the Fit between Business Strategy and Business Model: Implications for Firm Performance*, Working Paper, pp. 1-42.

Zott, C. & Amit, R. (2007). Business Model Design and the Performance of Entrepreneurial Firms, *Organization Science* 18(2):181-199.

Zott, C., Amitt. R & Massa, L. (2011) Business Model: Recent Development and Future Research, *Journal of Management Sciences*, 10th of May, 1-24, http://jom.sagepub.com/content/early/2011/04/29/0149206311406265. [Assessed 30 September 2016].

QUESTIONNAIRE FORM

Title of Study: ***A Business Model for Sustainable SMME Pig Farming in the Central Free State of South Africa.***

Student: Kingsley Nwenenda Orlu

Dear respondents,

I humbly request to use a few minutes of your time to solicit your kind attention and response to my questionnaire. I am a student of the Department of Business Support Studies, Central University of Technology, Free State. I am carrying out a research study on *A Business model for Sustainable SMME Pig Farming in the Central Free State of South Africa*. The information you provide will be treated with utmost confidentiality and will be used for research only.

The objectives of the study includes the following:

1. To determine the key factors that lead to the sudden business failure syndrome amongst pig farming SMMEs in the Central Free State.
2. To determine the relationship between management strategies and performance and sustainability amongst pig farming SMMEs in the Central Free State.
3. To determine the relationships between size of operation and performance and sustainability amongst the pig farming SMMEs in the Central Free State.
4. To evaluate the relationship between livestock farming diversification and performance and sustainability amongst pig farming SMMEs in the Central Free State.
5. To provide marketing strategies that maximizes performance and sustainability amongst pig farming SMMEs in the Central Free State.
6. To formulate a business model that maximizes performance and sustainability amongst pig farming among SMMEs in the Central Free State.

The questionnaire is developed as a partial fulfilment for obtaining a Doctor of Technology degree in Business Administration at the Central University of Technology, Free State.

Please, kindly ensure that the questionnaire is returned on or before 20th of January, 2016 to my project promoter (supervisor) at the under listed contact details:

Prof Johan van Zyl

Department of Business Management,

Faculty of Economic and Management Sciences,

University of the Free State.

Bloemfontein, 9300

Tel: 051 401 3888, vanzyljh@ufs.ac.za

The Research Assistant will help you to answer the questions if it becomes necessary.

Company name	
Responsible person (respondent name)	
Position	
Telephone number/ Cell number	
Physical location	

Section A: Entrepreneurial Demographic Data

Question	*Please complete the information about the enterprise and the owner/manager. Please mark the appropriate answers with ' X'*						**Office use**	
1	Please indicate your position in the enterprise	1 –Owner	2 –Manager	3 -Owner/Manager				
2	Please indicate your gender	1 – Male	2 - Female					
3	Please state your age in years	1- (16-25 years)	2- (26-35 years)	3 - (36-45 years)	4- (46-55 years)	5-(above 55 years)		
4	Please indicate your ethnic origin/race							

	1 – Afrikaner	2 – English	3 - Other (European)	4 - Black RSA	5 - Other African	6 – Indian	7 - Other Asian		
5	Please indicate your educational status								
	1 - No formal education	2 - Primary	3 - Middle School	4 - High School	5 - Undergraduate	6 - Postgraduate			
6	Please indicate your highest level of business training								
	1 - None	2 – Apprenticeship	3 - Short courses	4 - High school	5 – Undergraduate	6- Postgraduate			
7	Please indicate your highest level of training in entrepreneurship								
	1 - None	2 - Apprenticeship	3 - Short courses	4 - High School	5- Undergraduate	6 - Postgraduate			
8	Please indicate the size category of your pig farming enterprise								
	1 – (survivalist)	2 – (small)	3 – (micro)	4 – (medium)					
9	Please indicate the number of your livestock								
	1 – (1 – 50)	2 – (50 – 100)	3 – (100 – 150)	4 – (Above 150)					
10	Please state the number of persons employed by your enterprise								
	1 – (1-5 persons)	2 - (6-10 persons)	3 - (11-50 persons)	4 - (51-100 persons)					
11	Please indicate the number of years your farming enterprise has been in operation								
	1 - (1-5 years)	2 - (6-10 years)	3 - (11-15 years)	4 - (16-20 years)	5 - (Over 20 years)				
12	Please indicate if you are a full time or part-time pig farmer								
	1 – (Full time)	2 – (Part time)							
13	Please indicate your enterprise current life cycle stage of operation								
	1 – (Introductory stage)	2 – (Growth stage)	3 – (Maturity stage)	4 – (Declining stage)					
14	Is your enterprise diverted into a new form of farming operations during the last five years?								
	1 – Yes	2 - No	3 – Others, specify below						
15	If yes to question 14 did it improve your annual return-on-investment in the subsequent years?								

	1 = Yes			2 = No				
16	If yes to question 14, please briefly describe below the improvement observed							
17	Please indicate what form of a business organisation you are involved with							
	1 - (Sole Proprietor)	2 - (Partnership)	3 – (Close Corporation)	4 – (Joint venture)	5 – (Pty Company)	6 – (Co-operatives)		
18	If you were to opt for some increase in member ownership of your enterprise which of the options in question 17 do you prefer							
19	Please list in order of priority your key competitive advantages.							
20	Please indicate if your operation has been supported by any external source(s) of finance during the last five years							
	1 - Yes			2- No				
21	If yes to question 20, please indicate which of the following sources your enterprise received any financial support							
	1 - Government institutions		2 - Non-government institutions		3 - Private individuals			
22	Is your enterprise currently indebted							
	1 - Yes		2 - No		3 - Others, please specify below			
23	Please indicate which of the following sources attracts your most debt							
	Fixed costs			Variable costs				
24	Have you encountered any debt obligation default in the last one year							
	1 - Yes			2 - No				
25	Do you market your product directly to end users?							
	1- Yes		2 - No		3 - Others, please specify below			

26	Do you belong to any association of pig breeders in South Africa?						
	1 – Yes		2 – No				
	If yes, specify name of association below and number of years of membership						
27	Does your enterprise receive the services of the agricultural extension programme						
	1 - Yes	2 - No	3 – Others, please specify below				
	Section B: Marketing Management Activities						
28	Which of the following channels of distribution is most related to your marketing activities						
	1 - Wholesalers	2 - Retailers	3 - Farmers market	Food processing firm	4 - Specialist food stores		
29	Does your business experience any form of competition with other farming enterprises						
30	1 - Yes	2 - No	3 – Others, please specify below				

Question	***Please indicate whether you agree or disagree with the following statements regarding your enterprise. Please mark the appropriate answer with ' X'***	Strongly disagree	Disagree	Neutral	Agree	Strongly agree		
31	Key challenges confronting your enterprise are related to the marketing of your products							
32	Key challenges confronting your enterprise are controllable							
33	Your enterprise initiatives are often adapted from other farming enterprises							
34	Increasing the number of partners of your enterprise will improve your return-on-investment							
35	Your annual production targets are often achievable							
36	Increasing the number of partners of your enterprise will improve your management capabilities							
37	Government policies and compliance requirements are favourable to your enterprise							
38	Operating cost is increasingly uncontrollably.							
39	The size of your farm has a significant impact on your return on investment							

Question	***Please indicate the extent to which you agree or disagree with the following statements regarding your enterprise. Please mark the appropriate answer with ' X'***	No extent	Little extent	Considerable extent	Great extent		
40	Price increase lowers total revenue while price decrease increases total revenue						
41	Price increase raises total revenue while price decrease lowers total revenue						
42	There is no change in revenue when price is changed						
43	Your enterprise receives operational supplies from other enterprises in your immediate environment						
44	Improving the way in which you do business will enhance your ability to generate more revenue.						

Section C: Innovation Management Activities

Question	**Please indicate the extent to which you agree or disagree with the following statements regarding your enterprise. Please mark the appropriate answer with ' X'**	strongly disagree	disagree	neutral	agree	strongly agree	**Office use**	
45	This enterprise is often the first to initiate actions (e.g., quality improvements) to which other competitors in the area respond.							
46	In this enterprise, it is firmly believed that changes in the market creates a positive opportunity for doing business							

47	In this enterprise, there is a strong liking for implementing plans only if it is very certain that they will work.							
48	This enterprise encourages individuals to think of ways of solving problems on their own.							
49	In this enterprise employees are not compelled to strictly adhere to laid down procedures in doing their tasks.							
50	This enterprise supports individuals or teams that work on their own without close supervision							

Section D: Firm Performance and Sustainability

Question							office use	
	From question numbers 51 to 54, please use a scale from 1 to 4, where 1 = Not very high and 4 = Very high. You can also indicate "Don't know" where you are unsure in rating the following:							
51	The enterprise's sales has been increasing significantly over the last 1-5 years, compared with those of major competitors							
52	The enterprise's revenue has been increasing significantly over the last 1-5 years, compared with those of major competitors							
53	The enterprise's cash flow has been increasing significantly over the last 1-5 years, compared with those of major competitors							
54	The enterprise's profitability has been increasing significantly over the last 1-5 years, compared with those of major competitors							
55	Please, estimate the enterprise's sales growth over the past 1-5 years							
	1 -Decreasing (more than 10%)	2 - Decreasing (6-10%)	3 - Decreasing (1-5%)	4 - No change (0%)	5 - Increasing (1-5%)	6 - Increasing (6-10%)	7 - Increasing (more than 10%)	
56	Please, estimate the gross profit (profit before tax) for the enterprise over the past 1-5 years							
	1 - Decreasing (more than 10%)	2 - Decreasing (6-10%)	3 - Decreasing (1-5%)	4 - No change (0%)	5 - Increasing (1-5%)	6 - Increasing (6-10%)	7 - Increasing (more than 10%)	
57	Please, estimate the enterprise's return on investment (ROI) (*cash generated or lost due to investment in the enterprise*) over the past 1-5 years							
	1 - Decreasing (more than 10%)	2 - Decreasing (6-10 %)	3 - Decreasing (1-5%)	4 - No change (0%)	5 - increasing (1-5 %)	6 - Increasing (6-10%)	7 - Increasing (more than 10%)	
58	Please, indicate the growth of the enterprise's employees over the past 1-5 years							

	1 - (0 person)	2 - (1-5 persons)	3 - (6-10 persons)	4 - (11-50 persons)	5 - (51-100 persons)		
59	Please, indicate the most priority in your enterprise's objectives						
	To increase revenue	To increase profitability	To increase cash flow	To increase market share	Others, please specified		
60	Please, indicate the number of employees who have left your enterprise over the past 1-5 years						
	1 - (0 person)	2 - (1-5 persons)	3 - (6-10 persons)	4 - (11-50 persons)	5 - (51-100 persons)		
61	Please, name the key active cost factors in your monthly operating expenses						
62	Please, indicate what are the most current challenges that are preventing your enterprise from achieving its revenue targets						
63	Please, name the key active sources through which your enterprise generate income						
64	Do you agree that changing your business model will enhance your enterprise annual return-on-investment						
	1 - Yes		2 – No		Others, please specify below		
65	How satisfied are you with the overall performance of your enterprise?						
	1 – very dissatisfied		2 – dissatisfied		3 –satisfied	4 – very satisfied	
66	Have you directly received any support from government financial or intervention programmes?						
	1 = Yes		2 = No		Others, please specify below		

67	To what extent have the government intervention programmes influenced the performance of your enterprise?						
	Positive extent	Negative extent	Neutral extent	Others, please specify below			
68	Which of the following areas is your enterprise focusing on to increase profitability?						
	Marketing management	Business management	Financial management	Operations management	Others, please specify below		
69	Specify below which management area in question number 68 above your enterprise is satisfied with						
70	Please list in order of priorities five major factors that negatively influence your business performance						
	1	2	3	4	5		

THANK YOU FOR YOUR TIME!

ANNEXURE C: INTERVIEW QUESTIONS FOR OWNER/MANGERS OF PIG FARMING SMMEs.

- Greetings
- Introduction of research protocols
- Opening remarks and establishment of rapport.
- Simplification of broad meaning of terms and concepts in the interview questions
- The Research Assistant facilitate in answering the questions if it becomes necessary.

Entrepreneurial Demography

s/n	Items	Remarks
1	Company name	
2	Responsible person (respondent name)	
3	Position	
4	Telephone number/ Cell number	
5	Physical location	
6	Gender	
7	Age	
8	Ethnic origin/race	
9	Please indicate your educational status	
10	Please indicate your highest level of business training	
11	Please indicate your level of training in entrepreneurship	

12	Please generally describe your business profile in terms of size, workforce, operational life cycle, years of operation, etc.	

MAIN QUESTIONS

Questions 1

Please provide key factors that are most likely to lead to the sudden failure of your business and provide explanations?

Question 2

Are you satisfied with the overall performance of your business? How do you evaluate your management strategies? How does it influence your performance and sustainability, please provide more explanations?

Question 3

How many pigs do you have, how many acreage does your pig farm occupy. To what extent does the size of your pig farming operation influence the sustainable performance of your pig farming business, please give an elaboration?

Question 4

Have your attempted any livestock farm diversification, If yes, to what extent does diversification influence the sustainable performance of your pig farming business? How does your debt obligations affect your performance and sustainability? Please provide explanations?

Question 5

How do you market your pigs, how do you ensure that your product, price, promotion and distribution are acceptable to the market, how does your existing marketing strategies enhance the sustainable performance of your pig farming business, please provide explanations?

Question 6

Do you agree that changing the way you operate your pig farming business will enhance your performance and sustainability, what kind of changes do you prefer, please provide explanations?

Question 7

At what life cycle stage do you consider your business to be in (business lifecycle was illustrated by interviewer). How does your current debt liability affect your business and your current life cycle stage?

OTHER QUESTIONS

- Do you have any other questions which you would like my answers regarding my research?
- Thank you for giving off your valuable time to respond to my questions. I find your responses to be quite helpful and informative. Once again, all information you provided will be treated with utmost confidentiality and will be used for research only.

Good bye.

Central University of Technology, Free State

Private Bag X20539

Bloemfontein, 9300

Republic of South Africa

http://www.cut.ac.za/

+27 (0)51 507 3911

Personal contact

kingsleyorlu@gmail.com

Cell: +27 (0)82 700 2332