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DETERMINANTS OF SUCCESSFUL COOPETITION BETWEEN SMEs IN SADC COUNTRIES – IMPLICATIONS FOR STRATEGY AND FIRM PERFORMANCE

By

Tshepo Feela

Thesis presented in fulfilment for a degree of Doctor of Philosophy to the Faculty of Commerce, Law and Management, University of Witwatersrand

February 2020

Declaration

I, Tshepo Feela declare that this research report entitled *"Determinants of successful coopetition between SMEs in SADC countries – implications for strategy and firm performance"* is my own unaided work. I have acknowledged, attributed, and referenced all ideas sourced elsewhere. I am hereby submitting it in fulfilment of the requirements of the degree of Doctor of Philosophy at the University of Witwatersrand, Johannesburg. I have not submitted this report before for any other degree or examination to any other institution.



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Signed at Johannesburg 30th March 2020

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Abstract

The purpose of the study was to investigate the existence of coopetition (the simultaneous competition and collaboration between two or more firms) amongst the SMEs in the SADC as well as to ascertain whether these relationships have a positive effect on firm performance. Firm performance is divided into financial performance, strategic performance, and innovation performance. Furthermore, an additional aim is to investigate which variable(s) (foresight, risk aversion and exploiting opportunities) moderate the relationship between coopetition and firm performance. The results show that there is strong coopetition amongst SMEs in SADC and that coopetition has a positive and significant effect on firm performance. However, although no variable moderates this relationship, risk aversion has a positive and significant direct effect on firm performance.

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Carmen, my everything. Thank you.
To everyone that contributed to this thesis, thank you.

Definition of Key Terms and Concepts

Abbreviation	Description
SADC	Southern Africa Development Community
WEF	World Economic Forum
ICT	Information and Communications Technology
U.S.	The United States of America
GDP	Gross Domestic Product
BEE	Black Economic Empowerment
BBBEE	Broad-Based Black Economic Empowerment
SME	Small Business Enterprise
SMME	Small Micro Medium Enterprises
TIA	Technology Innovation Agency
IDC	Industrial Development Corporation
R&D	Research and Development
DTI	Department of Trade and Industry
RBV	Resource Based View
IQ	Intelligence Quotient
AU	African Union

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Chapter 1: Introduction

1.1 Background to the study

The Southern African Development Community (SADC) was formed in 1992 with the aim of achieving economic development, peace and security, growth, and alleviation of poverty. There are 15 member states, namely, Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

According to the World Bank *World Development Indicators* of 2015, economic growth differs per country in the SADC region. However, on average, the GDP per capita growth rate was 3% in the last decade. For the SADC, as a whole, the economies, in the aggregate, grew by 4.7% annually in the last decade, with reasons for this decent performance attributable to a variety of sectors in each country. This was an impressive rate when compared to the 2% per year of the European Union.

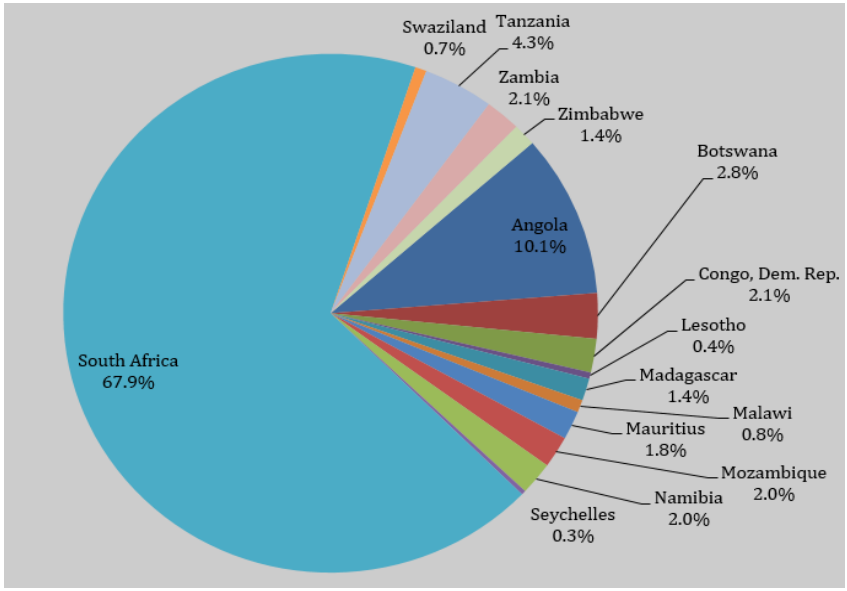


Figure 1: GDP share of SADC countries

Source: World Bank's *World Development Indicators* (2015)

The growth in these economies can be partly attributed to the upsurge in governments' policies to encourage entrepreneurship to resolve the widespread high unemployment rate and for the purposes of capital retention to aid economic growth.

The World Economic Forum's *Global Competitive Report* of 2014 -2015 indicates that some of the inhibiting factors against a successful business environment in the SADC include lack of access to finance, corruption, red tape, insufficient human capital and the lack of physical infrastructure. Despite these troubles, the number of Small Medium Enterprises (SMEs) in SADC has increased tremendously in the past 10 years. Research has shown that the SMEs employ one half to two thirds of the labour force in the SADC countries (Bouvard, Coudroy, Gast, Gundolf & Jaouen, 2016). SMEs play a pivotal role in the economic development of the SADC and remain a priority in the economic development policies of the member countries.

1.2 Definition of Coopetition

An inherent characteristic of SMEs is that they live and die quickly due to the challenges of limited resources, management's lack of ability to adapt to change, shortage of skilled labour, failure to compete with larger firms due to the lack of economies of scale and the opportunity to lower their prices and attract more customers (Akinyemi, 2016). Establishing a competitive advantage is difficult in fragmented industries dominated by entrepreneurial SMEs with limited resources (Katz, Aldrich, Welbourne & Williams, 2000). Small firms that adopt the low-cost strategy lack the economies of scale that their larger counterparts have. Thus, increasing the challenge to compete effectively.

Customer satisfaction is always important and, especially in recessionary times. Fewer customers have the discretionary income to acquire high quality, high priced goods, and services; therefore, they opt for cheaper alternatives. It is, therefore, important for SMEs to satisfy the needs of these customers in order to build long term relationships. SMEs cannot, by virtue of their size and limited product offerings, satisfy the needs of a large number of customers. In addition, the increase in competition by firms from developed countries continues to threaten the existence and/or survival of the small firms in the SADC region as technology helps to converge the global environment into one competitive platform. Novel ideas and strategies are necessary for the small firms to survive and maintain a competitive advantage over their bigger and more established rivals. One way to do this is through engaging in successful coopetition across industries and the SADC region.

There are several well-established dichotomous approaches to defining coopetition. Coopetition can be defined as a process based on simultaneous and mutual cooperative and competitive interaction between two or more parties (Dorn, Schweiger & Albers, 2016). By

working together, firms are able to increase customers' goods and services and capture a larger market at a lower cost than either firm would be able to attain on its own (Thomason, Simendinger & Kiernan, 2013). Companies that have been viewed in the past as competitors are increasingly cooperating to achieve joint and, particularly individual, competitive advantage.

For successful coopetition to take place, there should be a correct balance of competition and co-operation between well aligned firms. By this view, coopetition is defined as the simultaneous collaboration and competition between two or more SMEs in the same industry offering the same or similar goods and/or services to the same market, specifically to achieve mutual benefits and enhance the competitive advantage of the respective SMEs, both jointly and severally, by becoming more efficient.

Typologies of coopetition range from *cooperative dominant*, where the level of cooperation and competition is about the same, to *competitive dominant*, where competition is higher than cooperation (Bengtsson & Kock, 2000). Another typology of coopetitive relationship is termed *reciprocal coopetition*, where two firms co-operate and compete on equal terms (Walley, 2007). *Multipolar coopetition* exists where other players in the game determine the coopetition between two firms (Bengtsson & Kock, 2000).

In their seminal work, Nalebuff and Brandenburger (1996) used game theory to develop the concepts of coopetition and to highlight the different strategies that can be used by each player given their relative position in the game. Each player can have one or multiple roles and their role determines how they play the game. In traditional theories, there are usually a win-lose scenario in which one company would make a profit at the expense of the other competitors. Recent literature has emerged with win-win scenarios where competitors can have increased shares in the market simultaneously without harming each other.

In classical economic theory, competition has been viewed as the main driver for economic stimulation and collaboration, which, in some instances, was viewed negatively to imply collusion, especially in industries populated by few firms. It is only recently that collaboration and co-operation has been unburdened of the negative connotation. Porter's work on the bargaining power of entities has helped develop the benefits that could stem from coopetition relationships.

Coopetition is therefore, viewed as a process that can evolve over a single continuum or two continua with possibilities of a significant number of combinations of co-operation and competition. In the competitive continuum in a coopetitive relationship, competition can be spread from weak to strong and it can be based on the economic relation of competition (Bengtsson, Wilson, Bengtsson, Eriksson & Wincent, 2010). The strength of competition can be determined based on structural, relational, and cognitive characteristics. A player is tagged a competitor to an entity if the customer values the entity's product less when they have the other players' product than when they have the entity's product alone (Nalebuff, Brandenburger & Maulana, 1996). The paradigm of competition illustrates how interdependence between firms can yield a zero-sum game as each firm strives for something that the other firm cannot acquire (Thomason et al., 2013).

Similarly, the co-operative continuum can span from weak to strong and the measure thereof is based on the degree of complementarity, trust and tie strength. A player is a complementor if customers value the entity's product more when they have the other players' product than when they have the entity's product alone (Nalebuff et al., 1996).

The coopetitive process can be influence by the environment in which the players compete and collaborate, and while the external environment plays a role, internal firm characteristics may determine the simultaneous degree of collaboration and competition, and ultimately, the success of the coopetitive relationship. Contrary to the competitive paradigm, the co-operative paradigm stems from the realisation that pooled resources, skills and capabilities, can result in a positive sum structure or a win-win situation (Thomason et al., 2013).

However, for coopetition between firms to be successful, there must be the right fit. Each firm is characterised by many traits, including endowments resources, skills and vision, among others. Furthermore, each industry is unique; some industries are capital intensive others not, certain leadership styles are more dominant in some industries than in others, ownership plays a bigger role in determining the success of the business in some industries than management thereof (Herring, 2016). The successful coopetition of firms from different industries in different countries is dependent on several dominant determinants in those particular industries as well as countries (Thomason et al., 2013).

1.3 Problem Statement

For many years, in Africa, big businesses have enjoyed extensive support from government, financiers and other stakeholders. This situation is changing quickly in many economies of the world, as the focus shifts towards the development of SMEs. SADC economies have seen big businesses struggle to survive, characterised by downsizing and retrenchments of thousands of people in the past few years (Lechner, Soppe & Dowling, 2016). This situation has forced individuals to start their own businesses not only for survival, but also to create wealth.

Without a doubt, the propagation of SMEs is a good thing since the development thereof contributes significantly to job creation, economic welfare enhancement and social stability (Audretsch, 2007). In countries, such as Japan, SMEs are responsible for the bulk of the country's business establishment. In the US, SMEs have introduced innovative products and services, created new jobs, and opened new markets. SMEs in Taiwan are responsible for 98 percent of the nation's GDP; even though these businesses are limited in access to funds and are relatively very small, they make a huge contribution to the employment of the Taiwanese people.

More surprising is the failure rate of SMEs. Some fail at their infancy, others a few years from start-up. For example, it is estimated that 50 percent of all start-ups fail within their first year and 70 to 80 percent fail within the first three to five years (Zulu-Chisanga, Boso & Leonidou, 2016). The failure rate can be attributed to lack of funding, minimal infrastructure, and extremely competitive environments, especially with pressures from bigger businesses. SMEs operate in the same environment as their larger counterparts but without the benefits of relatively easy access to funding, human resources and strategic benefits of economies of scale (Guerrero, Urbano, Fayolle, Klofsten & Mian, 2016).

To survive and mitigate the risk of failure, a number of SMEs have embarked on collaborative strategies to increase their innovative activities and know-how (Narula, 2004) . Due to the acceleration of technological changes, many small firms experience difficulty in becoming innovators and are often pushed out of the market and forced to close shop (Schiavone & Simoni, 2011). Collaboration and innovation are regarded widely as important change processes that sustain business development in increasingly competitive markets (Franco, 2003).

Due to their limited financial and human resources, SMEs need to compete and form collaborative agreements with other firms to overcome some of these constraints and improve the level of innovation and overall entrepreneurial orientation (Mthanti & Ojah, 2017). Some SMEs have been successful in their collaboration relationships and others have failed (Franco, 2003). Those that have been successful enjoy sustainable growth and are able to compete in their respective markets against bigger businesses (Franco, 2003).

Literature on the determinants of a successful coopetitive relationship is based on studies done on well-established companies in developed economies. Some examples would include the Dell and IBM coopetitive relationship (Bandura, 2006), IBM and Microsoft (Kessler, 1998) and SAP with Oracle (van der Aalst, 2002). Most of the research focuses on SMEs and the coopetitive relationships in other developed countries and very few investigate coopetitive relationships in the context of Africa and more specifically, the SADC countries.

The summation of the determinants of successful coopetition by literature ignores the challenges faced by SMEs in Africa. Rather these determinants are based on economies with significant resources and adequate skills and may not be as effective or relevant in the conditions and challenges faced by SMEs in the SADC and/or other emerging economy regions. Furthermore, current literature is very clear on how coopetition can be measured in order to determine the extent of influence on the success of the relationship.

Further enquiry is needed, based on empirical evidence of the SMEs that have had successful competitive and collaborative relationships, to exhume the determinants of these successful relationships in the context of SADC and similar economies or regions. Knowing what determines a successful coopetitive relationship will help more SMEs in their efforts to collaborate and achieve their sustainable growth goals which may lead to strengthening their position in their competitive environments. Without this knowledge, we will continue to see more, sadly tap-rooted, SMEs fail as the market becomes increasingly complex and small businesses seek to form collaborative agreements based on trial-and-error. Intra-industry collaboration is perceived as a major source of a company's competitive strength and vital to a firm's survival in an economic environment where innovation tends to be costly and timing of market entry is critical (Yan, Zhai, & Fan, 2013). A coopetitive relationship is seen as a hugely promising way to reduce the risks and costs associated with industrial innovation (Dorn et al., 2016).

Importantly, there is a need to investigate the intermediary variables previously overlooked that influence the success of a coopetitive relationship amongst the SMEs in the SADC region in order to determine the effects of coopetition on the firm performance in different industries. This will help highlight the importance of collaborative agreements from a micro-economic perspective. It will also show the extent to which prominent industries are influenced by coopetitive relationships which may attract more SMEs, thereby increasing economic activity. A Z-score will be used to measure the likelihood of failure, to show the statistical probability that the intermediary variable yields unfavourable results and coopetition is unsuccessful or leads to poor firm performance.

1.4 Purpose of the study

In the considered attempt to seek resolution of the problems flagged in the preceding section, the over-arching purpose of this PhD work is as follows.

The key objective is to investigate the determinants of successful coopetitive relationships in different industries across the SADC region by studying 300 SMEs across 15 SADC countries in different industries. These industries in the ICT, Manufacturing, Construction, Electricity and Agriculture industry or sector, as the case may be and in accordance to the industry contribution to the country's GDP. This research is designed to unearth the determinants of successful coopetition that are appropriate and relevant to the SMEs of the SADC region, in order to aid small businesses in strategy formulation that achieves a sustainable competitive advantage and to increases contribution to economic growth and its reduction of unemployment.

1.5 Research questions and objectives of the research

The main research questions of the study are: (1) what are the determinants of successful coopetition among SMEs[1] in the SADC and does coopetition have a positive effect on firm performance? These research questions are addressed through efforts designed to meet the following objectives:

[1] Coopetitive relationship could occur between SME and SME(s) or between SME and mature firm(s).

- Investigate firm level determinants of successful coopetition in SADC based SMEs; that is entrepreneurial foresight, ability to exploit opportunities and the entrepreneur's risk aversion.
- Investigate the relationship between coopetition and firm performance
- Investigate the moderating effects of the determinants on the relationship between coopetition and firm performance.

1.6 Relevance of the research

SADC governments have tabled and adopted different strategies and programmes to promote SMEs in their respective countries; yet, overall, their efforts have not been as effective as desired (Berry et al., 2002). SMEs still find it challenging to compete with multinational companies that are bigger and better, in addition to the constraints they currently face (Berry et al., 2002).

The Coopetition theory offers an innovative strategy with which the SMEs can have an improved fighting chance. Current literature, however, is focused on the coopetition of bigger firms with large amounts of resources or small firms in developed and mature economies; therefore, there is limited research that is specific to the SADC region with its prevailing and importantly different set of challenges. Research suggest that the determinants for successful coopetition in small firms include: trust, resource capability, commitment and mutual benefit (Thomason et al., 2013). These may, on the contrary, not be relevant in underdeveloped economic environments, plagued by corruption and limited resources with different meanings of benefit.

This research makes an empirical and theoretical contribution to literature by focusing the study on SMEs in the SADC region. In investigating the relevant determinants of successful coopetition in the SADC environment with its unique challenges, the research helps small businesses in strategy formulation to achieve a sustainable competitive advantage and to continue their contribution to economic development and the reduction of unemployment. Furthermore, it helps policy makers in the development of policies that will see SMEs surviving long enough to have a significant impact in their respective economies.

1.7 Limitations of the study

The research is not without any shortcomings. Firstly, it focuses on only five sectors of the economy, the five sectors are chosen in accordance with their contribution to the overall GDP of the SADC countries as per figure 1. There may exist different determinants and variables in other sectors that may not align robustly with theory. Secondly, the research focuses only on three variables; entrepreneurial foresight, ability to exploit opportunities and the entrepreneur's risk aversion within the SMEs in the SADC. Other variables not considered in this work should be studied, as they may have significant effect on the success of coopetitive relationships and impact on firm performance.

1.8 Outline of the study

Conceptually the research is divided into seven major phases, which flow as follows:

II. Literature review

III. Analysis of collected data

IV. Discussion of results

V. Conclusion and recommendations

Chapter 2: Theoretical perspective of the literature

2.1 Introduction

There is extensive literature on entrepreneurship and SMEs. For the most part, researchers have generated incomplete definitions of entrepreneurship. While the concept involves individuals and the presence of exploitable profitable production opportunities, the focus has been primarily on the individual and the attributes they should possess to qualify as an entrepreneur, and this has led to somewhat incomplete definitions. In this chapter, the focus shifts to the exploitable production opportunities and the mechanism that can be used. Little attention is given to the entrepreneur as an individual but rather entrepreneurship as a mode of exploiting profitable production opportunities.

In the last decade, the coopetition theory has attracted much attention from the business management scholars. Rooted in principles of game theory and elements of social capital theory, coopetition is a neologism that aims to provide a pioneering method of exploiting opportunities.

The definitions of entrepreneurship and coopetition are outlined in this chapter. Furthermore, the elements and theories of both concepts are explored in the context of SMEs and the consequences of a coopetitive relationship are examined, especially, in order to develop a theoretical framework. The chapter concludes by investigating the antecedents and precursors of coopetition amongst businesses and develops a summative theoretical framework of the key determinants of successful coopetition based on entrepreneurship theory and resource-based theory.

2.2 Methodology

The literature review chapters follow entrepreneurship theory and value creation within the framework of SMEs and their co-operative relationships, with coopetition as a strategy for firm survival, firm growth and the exploitation of opportunities. We look at entrepreneurship as a basis for economic theory and explore the importance of SMEs in economic growth with Solow's growth model as the curtailing backdrop by linking Schumpeter's innovator and the importance of innovation in growth theory. Both the neo-classical (Solow, 1956) and endogenous growth (Romer, 1986) models of economic growth acknowledge the importance of technological innovation in stimulating growth, through generating technological progress

and raising productivity. The early work of Schumpeter (1911) established conceptually the ‘‘entrepreneur as innovator’’ as a key figure in driving economic development. The innovative activity of entrepreneurs feeds a creative ‘‘destruction process’’ (Schumpeter, 1942) by causing constant disturbances to an economic system in equilibrium, creating opportunities for economic rent.

A further exploration of game theory is used to usher in coopetition theory, its elements, and consequences. A theoretical framework of coopetition is used to examine the determinants of a successful coopetitive relationship, with a generalized view of the predictor variables. The aim here is to develop a comprehensive theoretical model that summarizes the different theories and highlights the shortcomings in the literature in order to address the research questions in chapter 1. The study involves a detailed review of published material on the subject matter including discussion papers, textbooks and works in peer reviewed journals.

2.3 Definition of Entrepreneurship

For more than two centuries, researchers have been arguing on the precise definition of entrepreneurship, constantly refining and expanding on existing definitions to develop some holistic classification, which may have led the focus away from the real challenges of entrepreneurship (Zulu-Chisanga et al., 2016). Entrepreneurship is a multidimensional concept, and, depending from which perspective it is viewed, the definition of the term can have a different focus. Some look at it from an economic point of view, others from management, sociology and psychology perspectives (Bula, 2012).

An all-inclusive definition of entrepreneurship has been elusive to scholars since the development of the term itself. While the concept remains on the minds of many scholars in different disciplines such as economics, sociology, political science and psychology, many attempts have been made to build a framework for a general definition that satisfies the view of all scholastic disciplines. Researchers have tried to provide a specific definition for entrepreneurship that identifies the key elements which they believe make entrepreneurship distinct from other forms of thought process (Sikalieh, Mokaya & Namusonge, 2012).
Regardless of the definition used, the consensus is that entrepreneurship is paramount to economic theory, economic growth and drives many countries’ economic policies (Sikalieh et al., 2012)

Richard Cantillon is credited with the discovery of economic theory and his consideration of the role of entrepreneurship in the economy. While it is largely accepted that entrepreneurship is a driver of economic growth, Cantillon points out in his seminal "*Essai sur la Nature du Commerce en General*" that entrepreneurship creates knowledge, information and economic wisdom (Brown & Thornton, 2013). According to Cantillon (2001), entrepreneurship is persistent in the economy and is applicable in all the activities of the supply chain, from the production of raw material to the distribution of finished goods (Cantillon, 2001). Entrepreneurs are considered as producers of all kinds, including doctors, bankers, farmers, shop keepers and other merchants. Thus, the economy is driven by entrepreneurs who participate in the entire value chain in any form.

This forms the fundamental linkage between entrepreneurship and economic theory. It is thus then that he defines an entrepreneur as

> '*Anyone who invests in acquiring and employing resources with the purpose of selling goods in the future at an uncertain price'* (Cantillon, 2001)

By this definition, Cantillon gives a generalised definition of an entrepreneur without the limitations of personal or environmental traits. Anyone who invests in this process is an entrepreneur. The investment in acquiring and employing of resources implies some ownership in the resources. The owner assumes some risk derived from the motive of acquiring and employing these resources. Therefore, entrepreneurship by the above definition, involves ownership of resources and the employment thereof as well as assuming some risk related to selling of goods in the future at an uncertain price. Cantillon's definition is in line with that of Knight and Mises but differs greatly from Schumpeter's.

Schumpeter (1948) argued that economic development emerged when new combinations appear discontinuously. New combinations might include:

- the introduction of a new good/ service, or a new quality of a good/service,
- the introduction of a new method of production,
- the opening of a new market,
- the conquest of a new source of supply of raw materials or components,
- or the reorganization of any industry

Schumpeter also asserted, “the carrying out of new combinations we call ‘enterprises’, the individual whose function it is to carry them out we call ‘entrepreneurs.” Baumol (1993) believes that entrepreneurs are always present. However, how the entrepreneurs act depends heavily on the rules of the game and the reward structure in the economy. The endogenous Growth theory models support Schumpeterian models that profits are the reward and inducement to innovations and risk taking in entrepreneurship (Bula, 2012).

Kirzner (2015) recognizes the central role played by alertness of the entrepreneur, for example, the discovery of possibilities hitherto overlooked, the speculative ability to see into the future. Furthermore, the discovered opportunities must offer gain to the potential discoverer himself. Then he acts, in the light of the future as he envisages it, to enhance his position in that future. Marshall (1949) is concerned with the equilibrium of the entrepreneurship paradigm. To Schumpeter, the crucial element is that managers of corporations cannot fill the role played by the entrepreneur (Schumpeter, 1949), this ties back to Cantillon’s argument of ownership in the resources employed for entrepreneurial activities.

The Marshallian analysis rooted in the Neo-classical theory attempts to explain the equilibrium conditions in the market, with the assumption of perfect competition, free entry and exit, and perfect knowledge and information (Bula, 2012). Marshall’s main aim is to show that there is no exploitation of labour under perfect competition since everyone earns his marginal contribution. He uses innovations in the market process by many small competitors to show the importance of large scale production for economic progress and innovation (Bula, 2012).

Marshall introduces the concept of innovation in his definition of entrepreneurship, emphasizing that entrepreneurs continuously seek opportunities (i.e. innovation) to make production more efficient and labour more productive (Bruton, Ahlstrom & Li, 2010; Bull & Willard, 1993). His concept of innovation is illustrated in his seminal work *Principles of Economics* first published in 1890 and was important in the neo-classical school of thought, in which he alludes that the entrepreneur is tasked with the supply of commodities and the provision of innovation, that is, to find new ways to make the supply of commodities more efficient. The importance of innovation is emphasized as follows:

"*Those businessmen who have pioneered new paths have often conferred on society benefits out of all proportion to their own gains, even though they have died millionaires*" (Marshall 1890, 1930, p. 598).

The small firms in an assumed perfect competition have a large impact on economic progression through their efforts to innovate (Marshall, 1949). This can be achieved by the individual firm or through some collaborative effort to drive innovation in the model, $Y_t = F(K_t, L_t, A_t)$. Marshall used, in his attempt to create an equilibrium, many small players, hence the perfect competition and not monopolist market.

Schultz (1975), on the other hand, believes that entrepreneurship is closely related to the current situation of disequilibria. It is this disequilibrium that offers the opportunity for entrepreneurs to rearrange their resources to achieve maximum value (Schultz, 1975). The rearranging of resources is the key to determining an entrepreneur's degree of ability (Bula, 2012). This implies the inclusion of management or people who do not necessarily own the resources, however, entrepreneurship ability can be augmented by investment and thus can be analysed in the demand and supply framework (Baumol, 1993; Bula, 2012). This is the view adopted by Say (1836); he perceived the entrepreneur as an agent of production rather than the risk bearer, as concluded by Cantillon. Say regarded the entrepreneur as the manager of resources or the firm, thereby making him an input in the production process. In addition to Cantillon's management and risk bearing definition, the principle quality of an entrepreneur is good judgement (Bula, 2012).

For avoidance of inclusivity, this research advocates for the adoption of Schumpeter's definition of entrepreneur as well as an outcome based on economic approach to the study of entrepreneurship. These include starting new ventures and adopting success strategies within existing SMEs (Bull & Willard, 1993) to better position them in the future, the acquiring and arranging of resources. It considers the Marshallian approach of small firms to drive innovation in Schultz disequilibria as sources of exploitable opportunities.

In summation, this research accepts entrepreneurship as the process of acquiring, arranging and managing resources (Cantillon, 2001), throughout the value chain (Say, 1836), during periods of equilibria (Schultz, 1975), and to develop new combinations (Schumpeter, 1936) in order

to be in a better position to sell products and services in the future at an uncertain price (Kirzner, 1988).

2.4 Entrepreneurship theories

2.4.1 Cantillon's entrepreneurship and economic theory (1755)

A noteworthy contribution made by Cantillon is his consideration of entrepreneurship in the framework of economics. Much of the literature before the publication of his *Essai* came from authors with religious backgrounds. Spanish scholastics were among the first to incorporate economic issues into their religious and philosophical paradigm. Also, worth noting are the Mercantilists, whose writings were motivated by their self interest in business and lacked a systematic explanation that described trade and commerce. Similarly, with the Anti-mercantilist, their contribution lacked theory that precisely described economic phenomena (Brown & Thornton, 2013).

Cantillon could capture the essence of entrepreneurship in his theory and describe in detail the role of an entrepreneur and entrepreneurship in the economic framework. In the neoclassical context, entrepreneurship is often excluded from the analysis of economic progress and growth, as noted by Brown and Thornton (2013)

"The problem, then, is not that no economists recognize the role of entrepreneurship, but rather that entrepreneurship remains outside the basic framework of mainstream economic analysis, and especially the mainstream economic analysis of growth." (Holcombe, 2007)

Cantillon's contribution can be seen as a revolutionary break, influencing the thought process of many scholars to eliminate the political and ethical concerns and, instead, focus on the economic features of the human action (Brown & Thornton, 2013). His published work influenced a more systematic and scientific view of the Physiocratic school of economics which later influenced the French liberals, Turgot and Condillac, and had much bearing on Classical economists, such as David Hume and Adam Smith (Thornton, 2009).

Cantillon's *Essai* embodies a profound replication of and denunciation of existing economic knowledge. In Part 1 of the *Essai*, he began by discarding the mercantilist notion that money was wealth and then began to build his analysis of commerce from the ground up, with an

analysis of the property rights of landowners and the establishment of villages, market towns, and cities. Next, he provided an analysis of labour and wage rate differentials that concludes with the remarkable finding that the true cost or "intrinsic value" of something, is its opportunity cost. He showed that there was a mutual interdependence among the economic classes and that the economy would be self-regulating because entrepreneurs would obey the command of price signals. He then provided a population theory that predates and exceeds that of Malthus and integrated it into his theory of wealth. In Part 2 he analysed barter, market prices, money and its velocity, and changes in the quantity of money and its relation to changes in the interest rate. Part 3 explains foreign trade, exchange rates, banking, inflation, and the business cycle.

There are three main characters in Cantillon's economy, the first being the property owners which are the main consumers. The production in the economy deemed as supply is primarily to meet their needs, that is the demand. The two remaining characters are distinguished by the nature of their income; this led to Cantillon's entrepreneur living on uncertain income (Brown & Thornton, 2013). The entrepreneur buys goods at a cheaper price from the farmers and transports them to the city to sell at a higher uncertain price. The risk of the uncertain price is driven by the market conditions in the city and the entrepreneur is at liberty to do whatever necessary to position himself to sell the acquired good at a desirable price.

Cantillon's theory of entrepreneurship is particularly supply-sided. In its essence, Cantillon's theory of entrepreneurship is that entrepreneurs function by assuming risk under uncertain conditions (Cantillon, 2001). They buy goods at a certain fixed price and sell them at an uncertain price in the future. According to Hebert and Link (2006), this is an important aspect of Cantillon's theory, that the focus is on the function and not the personality of the entrepreneur across all elements of the value chain and exchange (Hébert & Link, 2006).

Cantillon highlights further conditions that facilitate the selling of products by the entrepreneur. He notes the role of entrepreneurship in spatial economics; there are villages, market towns and cities in a state, all of which are interrelated and depend on the decision of the entrepreneur for the size, location, and proximity to one another. The size and location of the villages depend on the decision of the consumer which drive the production and labour required to meet their demand. If an entrepreneur decides to live in the village, this affects the size and composition of the market. To reduce transport costs, the seller seeks to be located close to the village.

The size and location of the villages are the results of entrepreneurial decision of property owners, labourers, artisans, and farmers based on the goal of reducing transportation costs. Therefore, size of the market and location of the business are the key determinants of the entrepreneurial decision in this theory. Similarly, bankers, butchers and brewers would locate their businesses in the city to exchange with other entrepreneurs, therefore the size of the city is a function of the entrepreneurs who chose to live there as well as surrounding villages. Cantillon's contributions to economic geography, location theory, and transportation economics are all related to the decision of the entrepreneur about where to profitably locate.

2.4.2 Jean-Baptiste Say's theory of the entrepreneur

Say extends the function of the entrepreneur from Cantillon's theory, however, he emphasizes the position of the entrepreneur in the entire system as a superior kind of labour (Van Praag, 1999). The entrepreneur plays a central role in co-ordinating resources in both production and distribution, making the entrepreneur a co-ordinator and a leader. In his *A treatise on Political Economy or the Production, Distribution and Consumption of Wealth* (1803, 1971), Say explicitly rejects the 'zero-sum game' economy (Say, 1836).

"They all take it for granted, that what one individual gains must need be lost to another; ... as if the possessions of abundance of individuals and of communities could not be multiplied, without the robbery of somebody or other" (Say, 1803, 1971, p. 70).

Say, to some extent, advocates for corporative strategies that yield non-zero-sum games and sees this as important for wealth creation and economic advancement of the country. Accordingly, production gives resources (capital) characteristics they did not possess before (Say, 1836). Furthermore, there are three types of industry that create value that were considered: agriculture, manufacturing and commercial industry and the functioning of these industries depend on theoretical knowledge, the application of knowledge and execution (Van Praag, 1999). These tasks are seldom performed by one person and the main task of producing a product from the application of knowledge is the responsibility of the entrepreneur for the economic prosperity of the country (Van Praag, 1999).

In extension to Cantillon's theory, Say includes certain requisite qualities that the entrepreneur should possess, including talent, knowledge, and experience to be successful. He also notes

that the entrepreneur, while this is a form of superior labour, must have invested some of his capital in the enterprise. As a consequence, these characteristics limit the number of entrepreneurs in the market (Van Praag, 1999).

In summary, the entrepreneur is a co-ordinator and manager of resources and plays an important role in the production, distribution and consumption of goods. He must possess certain qualities to qualify as the leader and co-ordinator at both market and firm level.

2.4.3 Marshall's Neo-classical approach

In the usual interpretation of neo-classical model, the market regulates itself. All the individual agents have their objectives clearly stated. With perfect information, the firms choose the best profit-maximizing mode of production, given their production function. The firm chooses inputs and calculates the best decision that yield maximum values for its variables. The consumer chooses products that will maximize their utility levels. This situation creates a demand and supply equilibrium. The equilibrium is set until some exogeneous factors come into play and a new equilibrium is established. The system regulates itself with no consideration of the efforts of the entrepreneur. The entrepreneur has disappeared (Van Praag, 1999).

> *"Obviously, the entrepreneur has been read out of the model. There is no room for enterprise or initiative. The management group becomes a passive calculator. One hears of no ... brilliant innovations, of no charisma or any of the other stuff of which entrepreneurship is made; one does not hear of them because there is no way in which they can fit into the model. The model is essentially an instrument of optimality analysis of well-defined problems which need no entrepreneur for their solution"* (Baumol, 1968, p. 67; Baumol, 1993, p. 13).

Neo-classists have not catered for the entrepreneur in their model. Marshall took the task in his seminal *Principles of Economics* to show the importance of the entrepreneur in the neo-classical thinking (Van Praag, 1999). The entrepreneur is key to innovation, an important element in economic progress. Successful entrepreneurship requires some capacity and skill. As per Marshal, it requires general ability which depends on the entrepreneur's background, education, and distinctive ability. Secondly, it requires a certain specialised skill that comes

from knowledge of trade and the ability to see opportunities. Thirdly, the entrepreneur, being the employer, must have leadership ability (Van Praag, 1999).

The success of businesses is constrained by the abilities required. The price of goods is determined by the market equilibrium and as long as the rents earned by entrepreneurs are higher than earnings in other occupations, entrepreneurship will seem attractive and have more people starting businesses. Of course, there is a limit to the number of entrepreneurs in the market and only the fittest survive; the substitution principle referred to by Marshal.

In summary, Marshallian economy revolves around the entrepreneur. Entrepreneurs are responsible for production and distribution; they facilitate demand and supply in the market and capital and labour within the firm. Furthermore, entrepreneurs assume risks associated with production. They are innovators and work to minimize costs. However, for an entrepreneur to be successful, there are certain requirements from his abilities, the combinations of which are rare in society, hence, entrepreneurs come at a high price.

2.4.4 Schumpeter's equilibrium disturbing theory (Schumpeter, 1934)

In his book, *The theory of economic Development,* Schumpeter starts by illustrating a scenario in which the entrepreneur is excluded from the economy. In this set up, each day is the same as the previous one and all options have been explored. The market is at a steady equilibrium with no incentive for disturbance. In an alternate scenario, one with the entrepreneur, he seeks new opportunities and ways to improve efficiency. The entrepreneur is concerned with innovation and carries out new combinations. He continuously disturbs the equilibrium with ongoing innovation, creating a permanent change and permanent disequilibrium (Schumpeter, 1934).

Schumpeter opposed the notion that innovation is exogenous, but rather internal effort from the entrepreneur within the firm. An entrepreneur need not be the owner of the business but any person who carries out new combinations[2] in whatever position. The entrepreneur must innovate and lead, he is rather focused on which objectives to pursue rather than how to pursue them. He need not be the capital and risk bearer, that is left to the banker (Schumpeter &

[2] The 'new combinations' including the inception of new goods and/or services, new technologies, the acquiring of new sources to supply raw materials, new business models, new strategies to improve efficiency and opening up of new markets (Van Praag, 1999)

Backhaus, 2003). Many small firms exist alongside big ones because of their ability to innovate, to offer something the big firms cannot, eventually driving out the old means of production. The entrepreneur leads this process (Schumpeter & Backhaus, 2003).

Schumpeter's entrepreneur is a leader and an innovator. He does not bear the risk, nor is he a manager or a capitalist. The innovator is the key to economic growth. He drives the economy to a higher equilibrium through new combinations, including new strategies. The industries consist of small and big companies and competition between small firms and competition between large firms is different and this has opened opportunities for innovation in a different manner between the two groups.

Schumpeter proposed the Mark I concept in *The Theory of Economic Development* (1934), which postulates that innovation in an industry is carried out and characterized by the ease of entry of new firms in the market. New entrepreneurs enter the market and challenge the established firm's ways of production and distribution and shift the innovation bar higher. However, Mark II takes a contradictory view and postulates that the innovation is carried by large established firms that use their resources to create barriers to entry for small firms and continue innovation through R&D, an advantage that small new firms do not have due to the lack of resources (Malerba & Orsenigo, 1995). This then begs the question whether small firms should collaborate and compete with larger firms for the benefit and advancement of innovation?

Recent studies suggest a Schumpeter Mark III. Dolfsma, and Van der Velde (2014) have concluded in their study that it is small firms that stimulate industry innovation rather than large firms or new firms. The view is however not explicit and further studies are required.

2.4.5 Knight's approach (Knight, 1971)

In his doctoral thesis *Risk, Uncertainty and Profit,* published in 1921, Frank Knight made a major contribution to the theory of entrepreneurship by distinguishing between risk and uncertainty (Van Praag, 1999). He explicitly expanded on Cantillon's theory by providing a deeper analysis of the risk-bearing function of the entrepreneur. He conducted a thorough analysis of the characteristics required to be a successful entrepreneur: judgemental decision maker and uncertainty bearer (Knight, 2012).

According to Knight, uncertainty in the environment in which the entrepreneur operates involves the calculation of some probability on an uncertain event, but unlike risk, there is no reliable basis of measurement hence the necessity for judgement on the part of the entrepreneur. This judgement should be employed at the formation of the estimate and at the actual estimation of its value (Van Praag, 1999). This true uncertainty forms the basis of Knight's theory and had been ignored in economic theory. The entrepreneur must, in all respects, deal with risk and uncertainty. According to decision theory, under risky prospects, the probability associated with the desired outcome is unknown and the entrepreneur must exercise judgement that may be based on experience, industry knowledge or intuition. With uncertainty prospects, the associated probability of the outcome is assumed to be known. The entrepreneur can increase the probability of the desired outcome by employing certain strategies; these may include the use of analytical techniques and preparing for multiple outcomes.

It is seldom that the business decisions made by the entrepreneur includes calculable probabilities. He is tasked with steering the business in a certain direction and to deal with the uncertainty of that environment. The entrepreneur deals with the uncertainty of the market; he is responsible for dealing with the changing consumer needs and purchasing power and he should position himself in a manner that reduces the uncertainty through the improvement of technology and the organization itself. Economic progress is the responsibility of the entrepreneur. Knight believed that the ability of the entrepreneur is the key determinant of the size of each business. The ability to deal with uncertainty depends on the entrepreneur's degree of self-esteem and the power to judge personal qualities as compared to those of other entrepreneurs (Van Praag, 1999). Entrepreneurial ability includes the ability to lead and command control over workers, foresightedness, and management of resources. Success, as an entrepreneur, also depends on the availability of capital.

Knight's entrepreneur bears all the uncertainty and that is how he contributes savings to society; he makes decisions and is responsible for those decisions. He must have high levels of self-esteem and luck to be successful. The entrepreneur is rewarded by profit, prestige, and job satisfaction.

2.4.6 Kirzner's higher order knowledge in entrepreneurship (Kirzner, 1997)

Kirzner elevated the position of an entrepreneur within the market in his *Competition and Entrepreneurship* publication of 1973:

> *"One of our complaints concerning contemporary theories of price arises from their virtual elimination of entrepreneurship. What is required, I have argued, is a reformulation of price theory to readmit the entrepreneurial role to its rightful position as crucial to the very operation of the market"* (Kirzner, 1973, p. 75).

Kirzner believed that the entrepreneur requires no special abilities but to be alert to discover and exploit opportunities for profit. The entrepreneur must possess higher order knowledge. The entrepreneurs are the forces that drive the market towards equilibrium even though the equilibrium is never reached (Kirzner, 2015). Furthermore, entrepreneurship is not restricted to the ownership of resources; while profit opportunities require investment of capital, the entrepreneur can source the funds from the capitalists if he is in the position to finance the interest. Kirzner's entrepreneurs still bears some uncertainty.

According to Kirzner (2015), it is the systematic error in the entrepreneur's assessment of profit opportunities that drive market process. The entrepreneur seeks to correct these errors in the previous assessment, and this results in the exploration of new opportunities. The errors are emphasized in the shift in the equilibrium of demand and supply, and the entrepreneur's efforts to correct these errors move the markets towards a higher order equilibrium. In this market, the entrepreneur plays a predominant role as an alert explorer of opportunities for profit and is responsible for short-run changes in production and price as well as long term progress and growth.

2.5 Summary of theories

Table 1: Determinants of successful entrepreneurship

	Determinants of entry	**Determinants of success**	**Determinants of being a successful entrepreneur**
Cantillon			Alertness and foresight
			Bears Risks
Say	Sufficient reputation to obtain capital	Judgement, perseverance, knowledge of the industry	Bears Risks
Marshall	Risk lover	Intelligence, general ability (depending on background and education) knowledge of trade, bears risk, leadership, and own capital	Good fortune
Schumpeter	Willingness to start (higher if less alternative opportunity for social distinction, more ambition, energy, creativeness)		Leadership
Knight	Ability to obtain capital. Willingness and motivation	Ability to deal with uncertainty: self-confidence, foresight, intellectual capacity	Good luck
Kirzner	Alertness	Creativeness and leadership to exploit profit opportunities	

Source: Van Praag (1999)

2.6 Application of entrepreneurship theories

The summary above provides a comparison of the classic views of entrepreneurship theories and the contributions made by the different prominent authors. Cantillon, Schumpeter and Kirzner explicitly described the entrepreneur as the party responsible for the market movement, as opposed to the equilibrium situation. With Cantillon, the entrepreneur moves the market towards an equilibrium, Schumpeter's entrepreneur destroys the equilibrium and pushes the

market to a higher equilibrium while Kirzner's entrepreneur strives for an equilibrium position that is never achieved.

According to Cantillon, Knight and Kirzner, the contribution of the entrepreneur stems from imperfect information. He deals with risk, uncertainty and ignorance and he is responsible for economic progress, according to all economists except Cantillon. Cantillon also does not have a clear link between the entrepreneur and the firm, however, Say, Marshall and Knight support the entrepreneur as an independent owner, manager, and decision maker. Schumpeter goes further to include the intrapreneur as employees within the firm that are in the position to carry out new combinations and he excludes all the business owners who cease to carry out the same. In Kirzner's explanation, the firm stems from the purchasing and selling decisions of resources made by the entrepreneur.

The descriptions of the main tasks of the entrepreneur somewhat overlap, from Schumpeter's risk-bearing entrepreneur, to Cantillon's entrepreneurs that bear risk as a consequence of buying at a certain price and selling at an uncertain price, to Say's risk of losing capital to experimental change, to Marshall's theory of taking risk linked to activities of the firm but Knight defines the entrepreneur as the person who makes decisions in times of uncertainty.

Other tasks and positions relating to capability, conduct and attitude required to succeed vary with each author. Kirzner and Cantillon advocate foresight and alertness, Marshall and Say are inclined towards leadership, management, and industry knowledge. Schumpeter speaks of attitude, willingness to deviate from conventional behaviour and Knight includes neo-classical abilities as a requirement. Other requirements include intelligence, education, family background, introduced by Marshall and Knight. According to Marshal, having a father who is an entrepreneur increases the chance of succeeding as an entrepreneur.

In an effort to translate the theories into usable definitions for empirical research, Van Praag (1999) used a US sample from the National Longitudinal Survey of Youth consisting of a homogenous group of 2244 white males. They were interviewed annually from their early youth and their records followed for a period of five years (1985-1989). In that period, 264 converted from waged employees to self-employed and the determinants to start are based on this sample. A separate Dutch sample of 1763 individuals born between 1939 and 1940 and who attended primary school in the same province was used to test the same variables in the

US sample. The results tabled below show which determinants had a positive and which had a negative impact on starting and succeeding in these two separate samples.

Table 2: Empirical determinants of successful entrepreneurship

	Start		Success	
Determinants	**Dutch sample**	**US sample**	**Dutch sample**	**US sample**
Risk-aversion	-	n/a	n/a	n/a
Own capital	n/a	+	n/a	0
I.Q.	+	n/a	0	n/a
Parent self-employed	+	n/a	0	n/a
Other family background variables	0	0	0	0
Age	n/a	0	-	+
Education	+	-	+	0
Self-employment experience	n/a	+	n/a	0
Experience in the industry	n/a	n/a	n/a	+
Experience in the occupation	n/a	n/a	n/a	+
Unemployed at start	n/a	n/a	n/a	-
Start motivated by challenge	n/a	n/a	+	n/a
Self-esteem	n/a	0	n/a	0

Source: Van Praag (1999)

'+' and '- 'indicates a positive and negative significant effect, respectively. '0' indicates an insignificant effect and n/a means the variable is not available in the sample.

The results obtained above show that own capital, I.Q, self-employed parent, age, self-employment experience, industry experience, education, experience in the occupation and motivation have a positive and significant impact on the success of the entrepreneur. Similarly, risk-aversion, age, education, and unemployment at start have a negative impact.

It follows that, given that entrepreneurs are the decision makers in SMEs and they determine the strategies that the firm should follow, such as coopetition, the determinants for successful entrepreneurship should play a role in determining the success of coopetitive relationships entered by the firm in order to exploit profitable opportunities.

Entrepreneurship theories can thus be separated in two elements, namely, the creators and the discoverers. The creators follow Schumpeter's definition and notion of creating new

combinations through innovation to improve on old combinations. Schumpeter's definition of entrepreneurship refers to the importance of innovation and creating new combinations that shift the old market equilibrium. Thus, those that create or innovate are categorized as creators.

The discoverers on the other hand are concerned with meeting the needs of a market through the discovery of new products based on the needs of the market through the distribution of commodities (Van Praag, 1999).

Table 3: Theoretical base of entrepreneurship theories

Creation theories	Discovery theories
• Cantillon • Schumpeter • Say • Marshall	• Knight • Kirzner

The theories of entrepreneurship discuss individual level attributes which the entrepreneurs possess. Coopetition however, is a firm level strategy and the individual level attributes are brought to firm level strategies by the owners of the firm. Entrepreneurs use these attributes to drive business and implement strategies such as coopetition.

2.7 Coopetition

Coopetition can be defined as a process based on simultaneous and mutual co-operative and competitive interaction between two or more parties (Dorn et al., 2016). By working together, firms are able to increase customers service and capture a larger market at a lower cost than either firm would be able to attain on its own (Thomason et al., 2013). Companies that have been viewed in the past as competitors are increasingly co-operating to achieve competitive advantage.

Research suggests that SMEs face many challenges compared to their larger size counterparts. Gnyawali and Park (2009) argue that small enterprises are vulnerable due to limited market presence, high costs of R&D and limited resources and capabilities to advance technological innovation. As a result, researchers have suggested that collaboration is key for strategy and performance of SMEs. These alliances help SMEs to compete with larger rivals, access resources and enter into new markets. Gomes-Casseres (1997) argued with examples that

SMEs need alliances with competitors so they can attain economies of scale, scope in R&D and develop technological standards. In his research of Mips Computer systems, he concluded that the company, although small with fewer than 1000 employees, was able to take on bigger rivals, such as IBM and Hewlett-Packard, by creating a large network consisting of small semi-conductor firms (Gomes-Casseres, 1997).

There is no doubt about the growing importance of coopetition as a strategy for both SMEs and larger companies. Eikebrokk and Olsen (2005) demonstrated empirically that coopetition among small firms helped to enhance the novelty of their business and combined complementary strengths in product and technologies (Eikebrokk & Olsen, 2005). Mione (2009) argued that common norms and technologies are created when small firms work together and they compete to sell their technologies (Mione, 2009). It is also suggested that coopetition may have a positive impact on profits (Powell, White, Koput, & Owen-Smith, 2005).

Typologies of coopetition stream from co-operative dominant, where the level of co-operation and competition is about the same to competitive dominant where competition is higher than co-operation (Bengtsson & Kock, 2000). Another typology of coopetitive relationship is termed reciprocal coopetition where two firms co-operate and compete on equal terms (Walley, 2007). Multipolar coopetition exists where other players in the game determine the coopetition between two firms (Bengtsson & Kock, 2000).

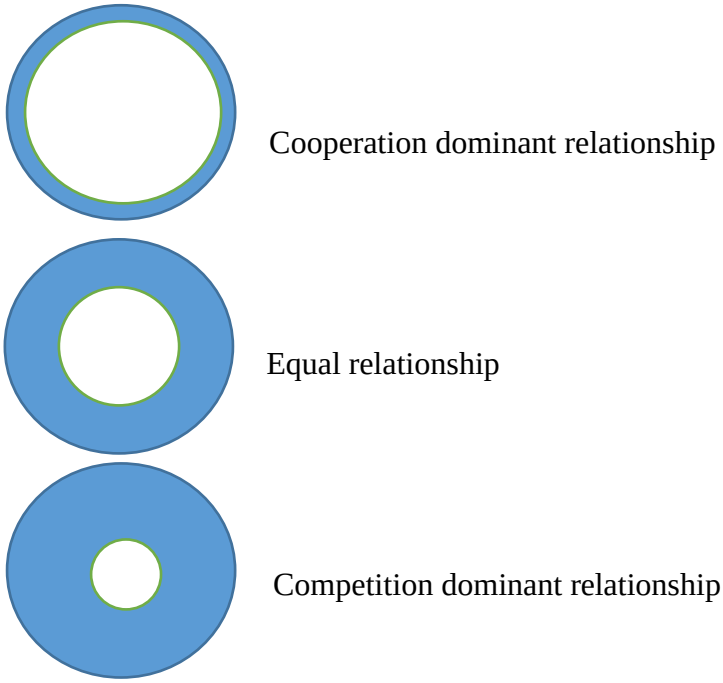


Figure 2: Types of coopetitive relationships

Source: Nalebuff and Brandenburger (1996)

In their seminal work, Nalebuff and Brandenburger (1996) used game theory to develop the concepts of coopetition and to highlight the different strategies that can be used by each player, given their position in the game. Each player can have one or multiple roles and the role determines how they play the game. In traditional theories, there were only win-lose scenarios but recent literature has emerged with win-win scenarios.

In classical economic theory, competition has been viewed as the main driver for economic stimulation and collaboration viewed negatively to imply collusion. It is only recently that that collaboration and co-operation has been unburdened of the negative connotation. Porter's work on the bargaining power of entities has helped develop the benefits that could stem from coopetition relationships.

Coopetition is viewed as a process that can evolve over a single continuum or two continua with possibilities of a number of combinations of co-operation and competition. In the competitive continuum in a coopetitive relationship, competition can be spread from weak to strong and it can be based on the economic analysis of competition (Bengtsson et al., 2010).

The strength of competition can be determined based on structural, relational, and cognitive characteristics. A player is tagged a competitor to an entity if the customer values the entity's product less when they have the other players' product than when they have the entity's product alone (Nalebuff et al., 1996). The paradigm of competition illustrates how interdependence between firms can yield a zero-sum game as each firm strives for something that the other firm cannot acquire (Thomason et al., 2013).

Similarly, the co-operative continuum can span from weak to strong and the measure thereof is based on the degree of complementarity, trust and tie strength. A player is a complementor if customers value the entity's product more when they have the other players' product than when they have the entity's product alone (Nalebuff et al., 1996).

The coopetitive process can be influenced by the environment in which the players compete, and while the external environment plays a role, internal firm characteristics may determine the simultaneous degree of collaboration and competition, and ultimately, the success of the coopetitive relationship. Contrary to the competitive paradigm, the co-operative paradigm stems for the realisation that pooled resources, skills and capabilities can result in a positive sum structure or a win-win situation (Thomason et al., 2013).

2.8 Theories of Coopetition

Three theoretical streams provide a conceptual basis for coopetition, namely, Resource Based View, including knowledge-based view, Network theory and Game theory. The theoretical focus relies mostly on these theories because of their suitability to analyze co-operative interactions between firms.

2.8.1 Resource based theory

It is unquestionable that many of the SMEs face challenges in their endeavours to compete in their respective markets and one of the main impediments is their limited resources. Some of these resources include in-house knowledge, technological innovation, skilled personnel, efficient procedures, capital and R&D, amongst others (Abor & Quartey, 2010). Resource based theory helps us to understand the mechanism by which a firm can achieve a competitive advantage, using its resources to position itself ahead of competitors. If a resource is controlled by a monopolistic group, it will, when all other conditions remain the same, diminish the returns available to other users, as in a case of a patent holder (Wernerfelt, 1984).

It is well known that an efficient production process can lead to higher returns if it cannot be bought in an open market and it can serve as entry barrier against competitors. Similarly, economies of scale can lead to high returns for the firm. One of the advantages of coopetition amongst SMEs is that it allows the firms in the relationship to achieve economies of scale which leads to higher returns and the ability to compete in the market against larger companies.

Knowledge of skilled labour is one of the important resources in a firm and often SMEs suffer in the market due to their inability to afford skilled labour. Coopetition encourages knowledge sharing between the entities. If the firms execute the experience curve strategy effectively, competitors should battle with the firm to lower costs. However, if the experience leaks to the competitors this will have adverse effects on the firm. Thus, skilled labour retention is important for SMEs and higher returns may lead to the affordability thereof.

Another key resource is technological leads which allow the firm higher returns and enables it to keep skilled labour so the organisation can develop further ideas and generate returns to fund R&D. On the other hand, competitors can reinvent the firm's ideas with much less effort than what it took the first firm (Barney, 2001); it is important for SMEs to keep growing and advancing technologies to keep abreast of the competition.

In general, resources can be used to produce more than one product and a resource is only as valuable as it creates a resource position barrier. Firms should strive to harness the resources that are scarce in the market and which the competitors will find difficult to obtain. Furthermore, in coopetitive situations, while resources sharing is important, companies should look for resources that combine well with what they have, and which create value as perceived but which no one currently has or they are among the few who succeed in building this resource. An example is managerial skills which can be analysed much like technological leads. When two or more companies enter into a coopetitive relationship, the combined managerial skills can serve as resource barrier for the other firms and may lead to higher returns for the firms in the relationship (Wernerfelt, 1984).

While neo-classical microeconomics assume that in general, resources and capabilities are elastic on the supply side, the resource-based view acknowledges that some resources may be inelastic in supply, as indicated in the work of Ricardo (1891) where he examines the kinds of profits that can be generated by the factors of production, given the fixed supply of fertile land

in the farming industry. Of course, when demand for a certain resource (factor of production) increases, the price of acquiring that resource will increase and ultimately the supply of the resource will increase (Ricardo, 1891). For example, a shortage of skilled managers in a particular market will increase the price of hiring these managers and may cause an increase in the number of people with the required skills to move into that market, either by training to acquire these skills or moving from other markets.

The inelasticity implies that firms that possess these resources may be able to generate above average profits (Barney, 2001). When faced with the challenge of resource shortages, SMEs may opt to develop coopetitive relationships in order to share and benefit from pooled resources which each firm would otherwise not have individually. The aim is to create a situation where a firm's resources position makes it more difficult for other firms to catch up. RBV is also useful when SMEs are trying to enter new markets, a resource matrix can be used to take stock of the company's current resources and the additional resources needed to enter the new market successfully.

In addition to the neo-classical microeconomics perspective, the resource-based view can be aligned to structure and conduct performance (SCP) based theories of industry determinants of firm performance and evolutionary economics (Barney, 2001). Each perspective depends on the context of analysis and all are equally useful. Resource based theory established in accordance with evolutionary economics focuses on the ability of firms to develop superior performances in changing environments through their unique ability to develop new capabilities. These capabilities generate rents that are Ricardian in nature (Barney, 2001). The neo-classical economic resource-based theory is appropriate for studying the rents generated by these capabilities and evolutionary economics for analysing how these capabilities are developed. Both frameworks are appropriate for the Schumpeterian analysis of entrepreneurship. Inherent in microeconomics is the equilibrium analysis that is useful for modelling rents generated by new capabilities, as often done in Game theory.

2.8.2 Network theory and innovation performance

Network theory is based on the study of interactions between agents in a network that can be represented graphically (Lin, 1999). The theory is by far and large, an extension of social capital theory as it creates social capital for the community and individuals. These networks also create categorical differences in the market when two or more communities interact in a

network-like manner that is different from other networks and, subsequently, provide an alternative to markets and hierarchies (Powell, 1990). In communities, such as Silicon Valley, networks are the defining feature to innovation and they create trust among the agents in the network (Powell, 1990). They also encourage conformity and synergy between the firms through the diffusion of knowledge and technology (Lin, 1990). Examples of networks include; social networks among individuals, such as friendship, formal contractual relationships between firms and affiliations to certain industry bodies.

In the context of coopetition, firms in coopetitive relationships form a network in which resources, knowledge and technology can be diffused. Coopetition encourages stronger relationships within the network as trust is fostered and greater synergy in the objectives of the firms is developed (Lin, 1990).

In their study, Pittaway et al. (2004) argue that for an innovative firm that seeks both complex and radical innovative processes, a diverse set of network relationships and partners is beneficial because such a firm can then integrate different knowledge bases, behaviours, and habits of thought. Specifically, formal, and informal information flow between partners can create unexpected novel combinations of knowledge. Knowledge which, in most instances, counts as a benefit, whether mutual or otherwise. This may, in some instances, motivate the parties to enter into a coopetitive relationship. However, some firms may build innovation relationships with customers to lower the risk level that is associated with the overall relationship depending on the risk aversion of the parties. Thus, customer knowledge assists firms in creating new innovations; however, the results are generally more incremental, and productivity gains are thus lower.

Moreover, Pittaway et al. (2004) state that network types and innovation types are directly connected. In addition, some findings indicate that low networking activity reflects as low innovation competence (Ritter & Gemünden, 2003; Pittaway et al., 2004). Ferrary and Granovetter (2009) emphasise that the economic success of an SME is connected to both the entrepreneur or innovation and to the degree of embeddedness of the SME in social networks. These networks provide financial resources, advice, partners, and experts (Ferrary & Granovetter, 2009). Understanding the key benefits of different actors is essential. The benefits of supplier integration are numerous. One benefit is that supplier integration leads to ground-breaking innovations when supplier integration specifically concerns innovation (Kaufmann &

Tödtling, 2001; Romijn & Albu, 2002). Second, the supply relationship is recognised as one of the most important factors affecting innovation performance and productivity (Lincoln et al., 1998). However, firms most often consult customers when initiating a network relationship for the purpose of innovation (Kaufmann & Tödtling, 2001).

According to Ragatz et al. (1997), customers are the most important partners when firms seek incremental innovations. Furthermore, Conway (1995) finds that customers are essential for generating new ideas, and firms that are able to obtain critical information from customers are commercially more successful. Suppliers and customers may be the two most important network partners for an entrepreneurial firm.

2.8.3 Game theory in coopetitive studies

Game theoretical models are used in many situations to analyse various markets and are rarely used in the case of coopetition. This is because coopetition is generally viewed as a management concept and not necessarily an economics concept and game theory uses seemingly complex mathematics. Secondly, game theory is unsuitable to the aim of coopetition models, that is to bring sophistication to certain concepts such as value net, thirdly, coopetition studies use case study methods that involve observing companies, industries and countries over a certain period and game theory models are not readily available for such a task (Okura, 2014).

Even though game theory is rarely used in coopetition studies, several authors have published important work on the topic using game theory. Brandenburger and Nelebuff (1996) used game theory in their analysis of coopetitive situations; Gnyawali and Park (2009) used a game theory approach in coopetition situations and the advantages of using game theory in coopetition have been amply set out by Okura (2207, 2008, 2009, 2012) and Ohkita and Okura (2014). Pesamaa and Eriksson (2010) showed that game theory is useful in describing interdependent decisions of investigating actors. Lado et al. argued that behaviour in interfirm relationships can be explained by game theory (Lado, Boyd & Hanlon, 1997). Ghobadi and D'Ambra (2001) speak extensively about knowledge sharing as they summarized the strengths, weaknesses, and characteristics of game theory in coopetitive relationships.

The first of three advantages of using game theory in coopetition studies is its suitability in analysing inter-firm relationships where individual actions affect the payoff of others (Lado et al., 1997) as shown in Ohkita and Okura (2014), where they considered a scenario where legal

software firms decide the amount of investment to drive illegal software firms out of the market and the number of software firms. This situation contains cooperative investment that is financial collaboration between the software firms, each firm contributed a certain sum of money towards the initiative to decrease competing number of illegal software firms. There exists an inter-firm relationship between the legal software firms, however their relationship with illegal software firms must also be considered. The second is that game theory can isolate co-operative and competition aspects of coopetition using multiple stages. In practice, the situations can be depicted as extensive form games and a subgame-perfect equilibrium can be derived using backward induction in which the second stage is considered and then the first stage is investigated. For example, Okura (2009) considered a scenario in which life insurance firms had to decide on the amount of investments for preventing insurance fraud and their quantities. In this situation, the decisions of the firms to co-operatively conduct the investments and competitively choose their quantities must be considered.

Thirdly, results from game theory analysis are reliable and can be generalized since game theory provides sophisticated equilibrium concepts and solutions, as is shown from the results of Okura (2012) where he considered the decision of insurance firms to invest in training their employees in order to maintain market confidence. Although the results were based on the insurance industry, the method can be applied in other markets (Okura & Carfì, 2014).

2.8.4 Factors influencing coopetition

SMEs entering coopetitive relationships are often led by entrepreneurs and managers. According to entrepreneurship theory, certain factors influence the success of entrepreneurship and accordingly these factors are the common attributes that entrepreneurs share to be successful (Brown, 2013). Once the reasons to enter a coopetitive relationship have been identified, entrepreneurs should seek partners who are aligned and share the same goals and seek the same benefits from the relationship, furthermore, they should seek partners with the same attributes for success. This might aid the coopetitive relationship to be fruitful.

Table 4: Possible factors influencing the success of a coopetitive relationship

Determinants of successful entrepreneurship	Reasons for coopetition	Factors influencing the success of coopetition
Foresight	Resource advantage	Trust
Risk bearing	Increase market competition	Managerial involvement
Leadership	Generate new capabilities	Foresight
Industry knowledge	Competitive advantage	Risk bearing
Ability to exploit opportunities	Entry into new markets	Leadership
Management ability	Technological advancements	Industry knowledge
	Rent seeking	Ability to exploit opportunities
	Co-ordination	Management ability
	Mutual benefit	

The aim of the research is to test whether the same determinants for successful entrepreneurship could influence the success of a coopetitive relationship amongst SMEs in the SADC region.

2.9 Application of theories

The increase of SMEs in the SADC region is of paramount importance for economic growth and to address the socio-economic factors that continue to plague the African continent. Coopetition theory points to an alternative remedy for the not so successful current strategies of SMEs (Lechner et al., 2016). The conceptual bases of coopetition reside in the Resource based view and Game theory. A syncretic model proposes that ‘‘success in today’s business world often requires that firms adopt both competitive and cooperative strategies simultaneously’’ (Lado, Boyd, & Wright, 1992).

Game theory provides another perspective with a dynamic picture of the interactive process of competition and co-operation (Brandenburger & Nalebuff, 1995). Network theory, on the other hand, explains how competitors, through coopetition, can learn about their partners and have access to resources (Gnyawali & Park, 2009).

Entrepreneurship theories set out several determinants for a successful entrepreneurship, the question is whether these factors have any influence on the success of coopetitive relationship between two or more firms and whether, perhaps with other factors that shape coopetition in SMEs, they may influence firm strategies in co-operative games?

2.10 **Conclusion**

In this chapter, the different theories that relate to coopetition were explored to frame the problem statement identified in chapter 1. Several definitions of entrepreneurship were unpacked, and antecedents thereof discussed in detail with the determinants of successful entrepreneurship highlighted. The chapter further looked at coopetition and the relevant theories discussed and the importance of coopetition for SME development detailed.

The determinants of successful coopetition, according to current literature, were also discussed and the need for further exploration emphasised, suggesting that the same determinants for successful entrepreneurship could have influence on the success of coopetitive relationships between SMEs.

Chapter 3: Determinants of successful coopetition

3.1 Introduction

By definition, coopetition is made up of two elements, competition and collaboration, which are put together to form a new paradigm that is separate from the two original concepts. Much like two parents having a baby, the baby is a separate person with its own personality. There is significant literature on competition and on collaboration, and an increasing attention to coopetition. The determinants of competition are well known, and research has also emphasised key elements that enable successful collaboration for the purpose of gaining competitive advantage over rivals.

SMEs in general face many challenges and often adopt strategies that are impractical to their environment mainly due to the shortage of resources to execute such strategies. Coopetition allows firms to pull together current resources and gives small firms a fighting chance in the ever-competitive markets that are dominated by larger companies. It is, therefore, important that coopetition between SMEs is executed successfully. The success of this relationship is partly dependent on choosing the right partner that is well aligned, whether by organisational culture, characteristics of the entrepreneur or common interest in the benefits of the relationship.

In order for the relationship to be successful and the anticipated benefits derived, certain conditions must be present. These conditions include the right fit between coopetitive partners. It is assumed that SMEs are run by entrepreneurs, and the research is conducted with this view. The determinates of successful coopetition are therefore investigated using entrepreneurs as the drivers of SMEs and thus the suggested influential factors are examined from the standpoint of the quality characteristics of a good entrepreneur because relationships between firms are largely explained by relationships between individuals (Barnes, 1954). In its basic form, the research seeks to determine the extent to which the suggested factors play a role in the choosing of a coopetitive partner and whether these factors have any influence on the relationship once the partner is chosen and the relationship is established.

The previous chapter identified possible determinants of successful coopetition drawn from several theories of entrepreneurship. An outline of the relationship between predictor variables and the predicted variable was proposed. This chapter is an extension of that literature review, and the proposed determinants which include foresight, ability to exploit opportunities and risk

aversion. These are discussed in detail to indicate their influence on coopetitive relationships between SMEs. Furthermore, external market conditions that may influence this relationship are also discussed, however, the focus is placed mainly on the endogenous factors.

3.2 Literature review

There are several published works that discuss the determinants of successful coopetition but none that suggest foresight, exploiting opportunities and risk aversion involvement as determinants. Most of the literature is focused on larger companies with extensive resources and very few discuss coopetition in a SME context.

Coopetition is becoming a popular strategy among SMEs, primarily because of the benefits that can be derived from such a strategy (Dorn, 2016), more so in sectors that are knowledge intensive, that use interdisciplinary technologies and manufacture short life cycle products. Several determinants of successful coopetition (trust, commitment and benefit) have been discussed in literature, including market conditions (Kaysi & Nehme, 2016), availability of capital (Thomason et al., 2013) and organizational culture (Czakon, Mucha-Kus, & Rogalski, 2014). However, most of the research is focused on larger companies and the determinants identified are suited for firms of bigger size. Furthermore, there is a need for a study of endogenous determinants which are more likely to give the SME some control over the coopetitive relationship[3].

3.3 Methodology

Extensive use of empirical literature is relied upon to discuss the different variables, with each one supported by recent studies and conclusions drawn therefrom. The chapter looks at what literature is available on the subject matter and to what extent the topic has been explored.

The proposed constructs (i.e., envisaged determinants of coopetition) as opposed to those used in literature would suggest that the same determinants for successful entrepreneurship have some influence on the success of coopetition, especially within the SME framework

[3] The endogenous factors such as leadership, foresight and risk aversion are, to some extent, within the control of the entity and can be seen as resources to be used to place the firm in a strong strategic position within the coopetitive relationship unlike the exogenous factors such as market conditions which the entrepreneur has no control over, these can be employed or acquired if they are not readily available within the firm.

3.4 Successful coopetition

Morris, Kocak and Ozner (2007) conceptualized 'successful coopetition' using 647 small businesses in Turkey by examining trust, commitment, and mutual benefit as the key determinants of successful coopetition. They found that mutual benefit and commitment are positively related to firm performance. Thus, this research adopts this definition of successful coopetition, that is, when there is trust, mutual benefit and commitment between the partners in a coopetitive relationship, moderated by certain variables to have a positive effect on firm performance, it is deemed successful (Morris, Koçak, & Özer, 2007). This study goes deeper by investigating some endogenous factors that are present in the entrepreneurship framework. It assumes that the same determinants of successful entrepreneurship are responsible for the success of coopetition in SMEs, primarily because SMEs are run and managed by entrepreneurs and small firms possess behavioural advantages, such as, entrepreneurial dynamism, responsiveness to changing circumstances and flexibility (Thomason, 2013).

The use of coopetition by small firms in fragmented industries is often strategic and unintentional due to the lack of resources, social complexes, and imperfect knowledge. Examples of less intentional coopetition may arise from customer inquiries when a coopetitive partner refers a client to a competitor for a product or service they themselves do not carry. Doctors may refer patients to a specialist or a real estate agent refers a home buyer to another real estate agent in a different area or a computer sales person referring a client to a different competing store that has the product the client seeks (Thomason, 2013). Walley (2007) suggested that multifaceted coopetitive relationships are most likely to be found among larger companies in concentrated industries than smaller firms in fragmented industries. However, on the contrary, larger companies avoid multifaceted relationships through mergers and acquisition.

From a resource-based view, smaller firms do not have the resources to avoid multifaceted coopetition and must engage in coopetition to advance technological development and stretch current resource further in order to compete effectively in these fragmented markets. Small firms may engage in multiple coopetitive relationships to enhance trust, commitment, and mutual benefit (Thomason, 2013).

3.4.1 Mutual benefit

Relationships between firms are pursued to the extent that they are helpful in achieving utility for the firm. Accordingly, dyadic relationship must benefit both parties even though the benefits are not equal. Several authors have stressed the importance of mutual benefit in co-operative relationships as the basis for trust and commitment (Morris, 2007). Benefits can be derived from both competitive and co-operative relationships, the difference being that competition does not require the benefits to be mutual because of conflicting interests. The co-operative side of coopetition involves compatible interest (Bengtsson, 2010).

Coopetition allows for firms in the relationship to benefit from the pooling of resources to compete against rivals in the market. Dowling and Roering (1996) argue that it is the pooling of these unique resources that forms the main reason for coopetition while Morris (2007) suggests that coopetition is a strategy for resource acquisition. Nevertheless, all these authors agree that there is a fundamental coherence with regards to benefits for the parties in the relationship and even though the benefits may not be equally allotted, they form a key and necessary component for the coopetitive relationship to exist.

The relationship structure itself is dependent on certain factors which in turn, influence the mutual benefit structure. It has been suggested that foresight (Lado & Boyd, 1992), ability to exploit opportunities (Mione, 2009) and the entrepreneur's risk aversion (MacCrimmon & Wehrung, 1990) influence the relationship structure and affect the motivation of the parties to act upon the opportunities of shared interest. The benefit structures will certainly differ with each relationship structure, spanning from competitive dominant to co-operative dominant relationship and the greater the competitive rivalry between the firms, the less will be the opportunity for mutual benefit.

3.4.2 Trust

Literature has over emphasized the importance of trust in long term relationships and how trust is the basis for mutual confidence between firms (Morgan, 1994). Although most studies focus on trust in vertical relationships, that is between suppliers, distributors, and customers, it also necessary from a coopetition perspective to investigate trust in horizontal relationships between firms competing in the same market or industry.

In competitive relationships, some level of trust, although small, does exist. Companies may trust each other to act ethically within the bounds of competition. Generally, companies within

a certain industry have some common interest and there is a level of trust among the members of the industry that its welfare will not be undermined.

Coopetition, on the other hand, creates a unique context of trust in that partners need to trust in two different areas: competition and co-operation. Each partner must trust that the other will share resources, meet deadlines, use information and at the same time, they must trust that the competitor will not engage in savage practices that will undermine their market position. There should be a balance between self-interest and mutual interest between firms (Morgan, 1994).

Trust in a relationship has been associated with a number of factors including honesty and reliability (Sherer, 2013). Jap (2001) suggested that common expectations regarding benefits are another determinant of trust and Parker (2000) showed that communication and timely dissemination of information are major contributors. It has also been found that the level of participation by the firms in the coopetitive relationship are partly influenced by the dependency of each other and high levels of trust can lead firms to participate more (Gnyawali, 2011).

The major challenge faced by SMEs is learning to trust their competitor, especially at the critical stages of start-up. It may be problematic for SMEs to trust each other when resources are scares and market position is limited while competing against their larger counterparts that may put them out of business. It would, therefore, require judgement and insight on the part of the entrepreneur to make the decision to coopete. Furthermore, the level of trust may be determined by the entrepreneur's risk aversion and to what extent they trust the other party to balance self-interest against mutual interest.

3.4.3 Commitment

Commitment can be defined as 'the desire to maintain a valued relationship through ongoing investment' (Morris, 2007). The desire includes the willingness to make financial and non-financial investments such as resources and information. As noted by Garaffo (2002), commitment levels in coopetitive relationships are built around cooperative research and development activities, exchanges of existing knowledge, partnerships for defining new standards and efforts to integrate existing businesses.

Commitment involves two parties adjusting their expectations, approaches, processes, and approach to resource allocation to accommodate each other so both parties' needs, requirements and characteristics are reflected (Le Roy, 2016). The viability of the relationship

over time is determine by the parties' commitment levels (Le Roy, 2016) which are linked to benefit sharing (Morris, 2007). Amaldoss (2000) demonstrated that commitment is greatest when benefits are shared equally. However, firms in coopetitive relationship may seek different benefits and sometimes these are very hard to measure. As is the case with SMEs, due to their structural and economic challenges, there lies the risk of under-committing with the intention of pursuing self-interest benefits. Further, because each firms' efforts affect the other partner in the relationship, the implications for under-commitment becomes more severe (Sherer, 2003).

Dussauge (2000) suggested two different alliances for coopetitive relationships: scale and link. The two differ in terms of resource contributions made to the alliance. Scale alliances are partners contributing similar resources, while link involve partners with different resources. The resource contribution is the main driver of commitment as it influences the perceived mutual benefit between the parties in the relationship (Dussauge, 2000).

In summation, trust forms the basis of commitment levels and both constructs develop over time. Eventually, one influences the other. When partners in a relationship have high levels of commitment and trust, it is easier for them to adapt to the relationship by making the necessary changes that will generate returns over time (Morris, 2007). Ultimately, when there is trust in the relationship, commitment is fostered, and the relationship can last its intended term because partners share resources, critical information and experience which leads to lower perceived risk levels and the emergence of a greater sense of security in using partner resources.

Mutual benefit also fosters commitment, firms will commit more when there is opportunity for greater benefit such as lower costs, wider distribution, increased market share, improved productivity and increased customer satisfaction. Similarly, trust has a positive effect on mutual benefit which ultimately affects the relationship's success (Le Roy, 2016).

3.4.4 Determinants of successful coopetition and the SADC context

SMEs are the main drivers for economic growth and are the steppingstone for the industrialization of both developed and developing economies (Muriithi, 2017). These businesses account for 99% of all businesses in developing countries and therefore their importance cannot be over-emphasized (Fjose, Grunfeld & Green, 2010). For example, SMEs account for 52% of the private work force in the USA GDP while in China, SMEs employ 80% of the urban population and contribute 60% to the GDP (Muriithi, 2017). Notably, at the centre

of Africa's growing economy are the SMEs which account for more than 95% of all firms in Sub-Saharan Africa (Hategа, 2007).

Table 5: Some of African SMEs contributions to employment and GDP

Countries	Contributions to GDP (%)	Contributions to employment (%)	References
Ethiopia	3.4%	90%	Central Statistic Agency (CSA), 2003; Gebrehiwot, 2006
Ghana	70%	49%	Ghana Bank Doing Business Report, 2013; World Bank, 2006; Abor & Quartery, 2010;
Kenya	40-50%	80%	Mwarari & Ngugi, 2013;
Nigeria	50%	70%	Ariyo, 2011; Kolasiński, 2012;
Rwanda	20.5%	60%	Mukamuganga, 2011
South Africa	50-60%	60%	DTI, 2012; Willemse, 2010;
Tanzania	60%	20%	Echengreen & Tong, 2005; Ngasongwa, 2002
Uganda	18%	90%	Uganda Ministry of Trade, Industry and Cooperatives (MTIC), 2015
Zambia	8%	30%	Mbuta, 2007
Zimbabwe	40%	15%	Katua, 2014; Zwinoira, 2015

Source: Muriithi, 2017

The difference between economic conditions of Africa and those of the rest of the developed countries is well known and much research exists emphasizing the constraints experienced by SMEs in in Africa. SMEs in Africa face many challenges that hinder their growth (Nikolic, Dhamo, Schulte, Mihajlovic & Kume, 2015). Although SMEs in Africa are key to economic growth and poverty elevation, many obstacles that restrict their growth are the reason for their high mortality. According to Adcorp (2014), SMEs in Africa have a very high mortality rate with only five out of seven surviving their first year and in South Africa, 50% to 95 % fail in their first year depending on the industry (Willemse, 2010). A study by Yeboah (2015) established that 75% of SMEs in Southern Africa do not make it past the first year, making it the highest failure rate in the world. Although the African continent has shown significant improvement in business environment and attracted investments from different parts of the world in the last ten years, it is still ranked the most difficult region to do business with SMEs by the World Bank.

While SMEs in Africa contribute immensely to the reduction of unemployment, their contribution to the GDP is significantly lower (Muriithi, 2017) and this is due to the high mortality rate, difficulty of doing business in the respective economies, extreme competition

for large firms, both local and foreign. Some of the main challenges highlighted in literature include; access to finance (Ariyo, 2004), electricity supply which prevents businesses from running at full capacity (Fjose et al., 2010), poor management where some entrepreneurs are competent and have specialised skill, yet they lack the ability to run and manage businesses (Brink, Cant & Lightelm, 2003), competency and capability, which is developed from the entrepreneurs; ability to use resources in order to identify and exploit opportunities (Muriithi, 2015), corruption spanning from government to the private sector (Benzing & Chu, 2012) and access to reliable information that will allow business owners to plan ahead and identify current and future opportunities (Kamunge, 2014). Other challenges include unstable political environment, stringent legal frameworks, and lack of co-operation (Katua, 2014).

These are just a few of the many challenges that hinder SME growth in the SADC and in order to survive, businesses have to employ some novel methods to reduce the high mortality rate. Coopetition is one of the strategies that SMEs in the SADC region can employ in order to overcome some of the challenges and make a significant contribution to employment and to the GDP. As stated in the previous text, for coopetition to be deemed successful between two or more firms, there needs to be trust, mutual benefit and commitment, along with moderating factors that will increase firm performance. Coopetition is only successful when it has a positive significant effect on firm performance.

It is proposed that in order to achieve successful coopetition, the entrepreneurs of the respective firms in the relationship should have foresight to be able to plan and work towards a common goal, thus fostering commitment towards the identified objectives. Secondly, the entrepreneurs should have the ability to identify and exploit opportunities to achieve monetary and non-monetary benefits for all parties in the coopetitive relationship. Coopetition in its essence is Non-Zero-Sum game and each party wins. When all firms concerned have set out clear objectives (from identified opportunities) for the relationship, trust and commitment is maintained. Thirdly, SMEs in the SADC operate in a very uncertain environment and firms are forced to take risks in order to achieve the desired payoffs. Coopetition helps in reducing the risk by spreading it among the firms in the coopetitive relationship therefore allowing individual firms to take bigger risks than they would individually. This in turn, allows greater commitment to the relationship and may lead to higher benefits or payoffs.

Foresight - Although popular in the corporate world, planning does not suit most SMEs. To have a deep analytical approach to planning on how to exploit opportunities in an environment

with high uncertainty and lack of reliable information only means a waste of time and resources because by the time all planning is done, the opportunity might not exist (Bhide, 1996). The 1990 National Federation of Independent Business' study of 2 994 start-ups showed that entrepreneurs who spend a long time planning, studying and reflecting are less likely to survive than those that plan less (Bhide, 1996). Therefore, entrepreneurs with foresight are most likely to identify opportunities and exploit them with much less planning. In the SADC region where information is not reliable, the economic environment is unstable, there is instances of corruption and lack of resources, business owners with foresight may be able to identify opportunities in the chaos and employ coopetitive strategies to share resources to allow them to exploit said opportunities. This may be done through R&D efforts, joint financial contributions to overcome the lack of financing from funding institutions and to achieve greater economies of scale and learning and anticipating trends in order to supply customers with relevant products with less reliance on external information, as in the case of Levi Strauss, by recognizing the opportunity to supply protective clothing and later, denim jeans.

Exploiting opportunities - Generally, entrepreneurs who seek to exploit opportunities generate many ideas at once and quickly discard non-feasible ones. This is one of the skills that requires judgement and reflection. While the business environment offers a large number of opportunities, entrepreneurs need to be able to recognize and exploit them in order to survive.

According to Kuratko and Hodgetts (2004), entrepreneurship is defined as "a dynamic process of vision, change, and creation. It requires the application of energy and passion towards the creation and implementation of ideas and creative solutions. Essential ingredients include the willingness to take calculated risks…the ability to formulate an effective venture team; the creative skill to marshal needed resources; the fundamental skill of building a solid business plan; and finally, the vision to recognize opportunity where others see chaos, contradiction and confusion." Entrepreneurs in the SADC region are faced with challenges, however, the same challenges offer opportunities to invent new ideas, to find alternative energy supply to the shortage of electricity, efficient ways of production against ailing infrastructure and new funding models against the lack of resources and financing fuelled by corruption. The entrepreneur's ability to see beyond the impediments and recognize the opportunities that exist may encourage commitment in coopetitive relationships because of the gains in learning, resources and knowledge which may aid the exploitation of the identified opportunities.

Risk aversion – Being an entrepreneur is inherently taking risks. In some cases, entrepreneurs use their own resources to start their businesses with the risk of failure. With the high mortality rate of SMEs in SADC, the risk is that much higher for entrepreneurs in the region. However, to avoid taking risk is just as detrimental to the business with much less chances of desired payoffs. SMEs need resources to grow - one of which is access to finance. In Africa, the problem of SME funding has been lingering for decades (Mosia, 2018). This is due to the high risk of SME and inadequate financial facilities. SME are seen as risky by financial institutions because they offer no guarantees, their assets are limited and often have no positive trading record (Sevara & Kazuo, 2018) and yet SME have to take risks to survive. It has been determined in literature that entrepreneurs who take risks are more likely to succeed than their risk averse counterparts. Collaboration between firms with a similar risk appetite fosters commitment and trust between the parties (Thomason, 2013) and may lead to a successful coopetitive relationship. This is key in reducing the riskiness of SMEs in the eyes of funders. Businesses in coopetition have a larger pool of resources, including assets they otherwise would not have individually, and these can be offered as guarantees in order to access some financial facilities from funding institutions. Secondly, firms in coopetition benefit from higher productivity due to economies of scale, access to new knowledge and resources which subsequently may lead to higher profitability and a positive trading record, making it easier to access funding. Thirdly, coopetition may lead to increase in sales and products, thereby increasing internal financial resources making the firms less dependent on external funding. It is therefore necessary in the SADC context that SMEs with similar risk appetite form coopetitive relationships to surmount the access to finance hurdle and allow for greater room to take more risks.

In the presence of what may seemingly be long standing impediments to the success of SMEs in the SADC, foresight, ability to exploit opportunities and low risk aversion may be the key drivers of successful coopetitive relationships between SMEs, given the many challenges they face in the area. The importance of successful coopetition in this environment is high and SMEs could rid the environment of many obstacles that hinder growth and performance, allowing small businesses to contribute to economic growth in a way similar to those in developed countries.

3.5 Successful coopetition and firm performance

The topic begs the questions whether small firms that engage in coopetition perform better than those that do not? And whether strong coopetitive tendencies result in larger performance gains than weaker coopetitive tendencies? Extensive evidence exists to suggest that coopetition may enhance performance. Of course, it may depend on the measure of performance that is employed in the context. While profit is most common measure of performance among SMEs, there is a wide array of other measures, both financial and non-financial, such as innovativeness and market position (Morris, 2007).

Combs and Ketchen (1999) demonstrated that relationships among non-competing firms has the potential to reduce costs, resulting in higher profits for all partners. This was done using profit as a performance indicator. Coopetition, in its essence, requires structural changes, more so for firms with limited scope and scale. Firms in coopetitive relationships often change the organizational structure to support the new inter-firm relationship in order to allow easy flow of resources and information. Meijaard (2005) recorded evidence that organisational structure affects firm performance.

Competitive position is another important performance indicator (Ritala, 2012). Coopetition is considered as a way for firms to gain competitive advantage in their respective markets. Ritala (2002) argues that firms participating in coopetition will have enhanced competitive positions depending on the degree of coopetition. They can also strengthen their competitive position by leveraging off their partner's resources (Dussauge, 2000).

3.5.1 Direct effects of coopetition alignment on firm performance

Recent research has produced considerable evidence that coopetition is beneficial to the innovative output of firms in general. For example, Quintana-Garcı´a and Benavides-Velasco (2004) found that it was beneficial in the introduction of new product lines compared with other types of collaboration. Other studies have reported similar conclusions, suggesting that coopetition, as a particular type of R&D relationship and knowledge source, helps firms to generate both incremental and radical innovations (Belderbos, Carree & Lokshin, 2004; Tether, 2002). Furthermore, it has been shown that including competitors in the R&D relationship portfolio is beneficial in terms of innovation output (Belderbos et al., 2004; Faems et al., 2009). Classical economics literature implies the opposite – coopetition is seen as a vehicle for price discrimination, thereby mainly improving profitability and lowering the incentive to innovate.

However, the competitive environment has become more global, rapid, and unpredictable in recent years. This development has not only strengthened the motivation to engage in various types of alliances in general (Contractor & Lorange, 2002) but has also resulted in increased collaboration among competitors in value-creating and innovativeness-enhancing rather than collusive practices (Gnyawali & Madhavan, 2008; Gomes-Casseres, 1994; Jorde & Teece, 1990; Walley, 2007). Thus, in the context of this study, including a set of competitors in the firm's alliance portfolio is suggested to be positive for innovation performance. Hence, the following hypothesis is put forward.

H1: Coopetition alignment is beneficial to a firm's innovation performance.

Although there is already considerable evidence that coopetition is beneficial to innovation performance, there is much less evidence concerning its effects on market performance. Much of the extant quantitative research has been conducted on the level of individual alliances (e.g. Kim and Parkhe, 2009), rather than of the firm and its alliance portfolio. The most notable evidence on the firm level is provided by Luo, Rindfleisch and Tse (2007), who found that coopetition was beneficial in terms of return on equity up to a certain threshold. Existing conceptual and qualitative analyses imply somewhat similar results, at least when the issue is approached from the alliance portfolio perspective.

In fact, the strategy of allying with strategically chosen competitors and competing fiercely with others could be considered potentially superior in terms of combining the benefits of both collaboration and competition (Lado, Boyd & Hanlon, 1997). For example, in developing mobile telephony technologies, the Finnish-based firm, Nokia, has adopted the strategy of collaborating with a diverse portfolio of partners, including some carefully selected competitors (Dittrich & Duysters, 2007). Many more examples exist in literature that highlight how coopetition has helped firms achieve their innovation goal. Through resource sharing, including knowledge, experience and technical skill, firms were able innovate.

H1b: Coopetition alignment is beneficial to a firm's financial performance.

SMEs face many challenges in the market in which they compete, with limited resources; they strive to survive by competing effectively. Coopetition strategy allows for small firms to do so with the aim of increasing profitability by efficient use of resources to lower costs, improve productivity, higher customer satisfaction and increased market share. For the purpose of this research, profit, sales growth and competitive position are used as performance indicators.

H1c: Coopetition alignment is beneficial to a firm's strategic performance.

Strategic performance comprises, amongst others; customer satisfaction, employee satisfaction, increase in number of employees and social performance. Coopetition, according to Chin et al. (2008) has a positive effect on a firm's strategic performance, that is, it enhances customer satisfaction and employee satisfaction.

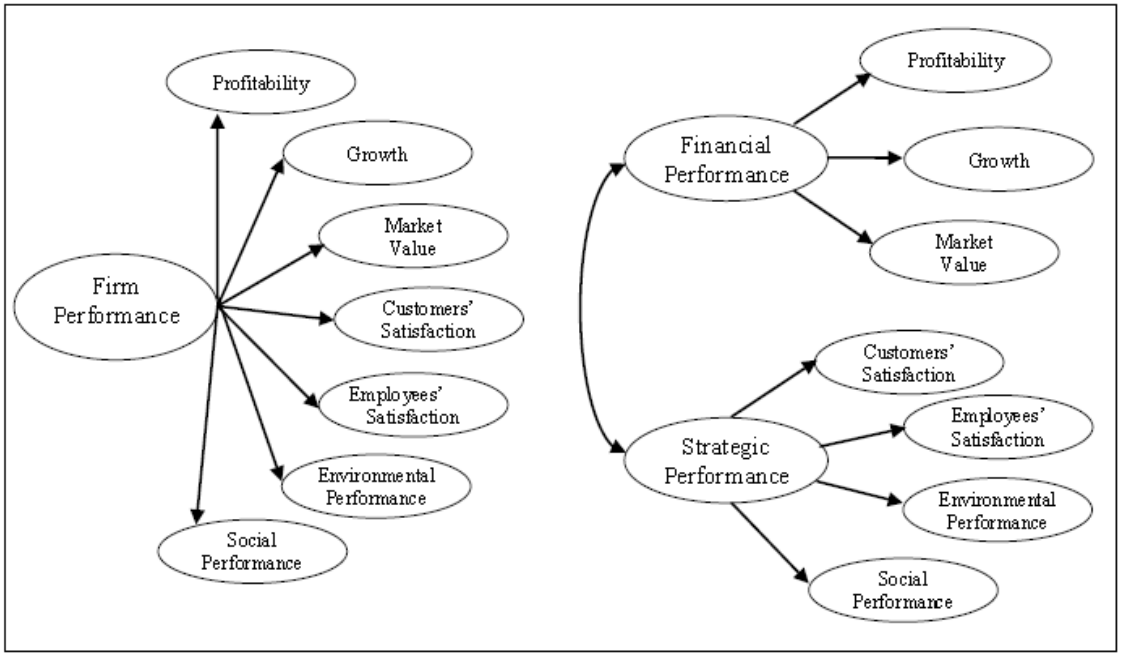


Figure 3: Dimensions of firm performance

Source: Brito (2012)

For the purpose of this research, innovation performance, financial performance and strategic performance are considered for inclusivity and ease of measurement among the SMEs.

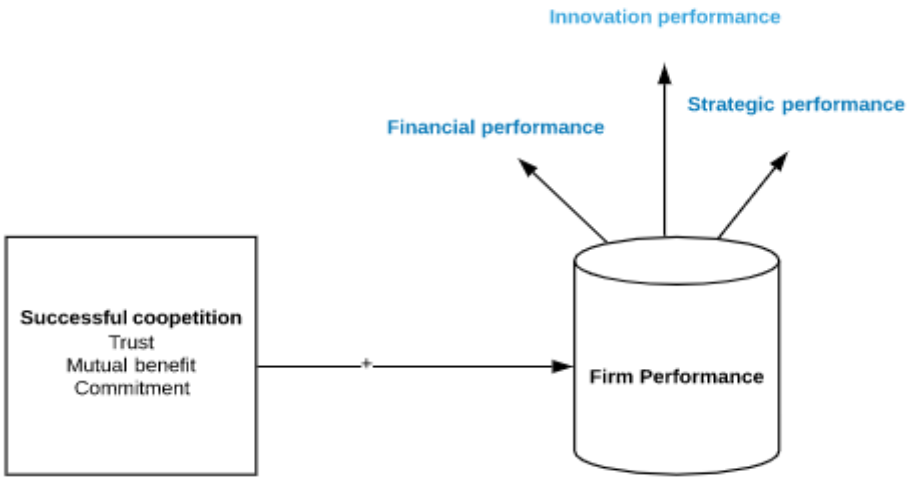


Figure 4: Relationship between successful coopetition and firm performance

Source: Articulated by author

Based on the argument above, it is suggested that successful coopetition has a positive influence on firm performance. Morris (2007) found in his model linking dimensions of successful coopetition (trust, mutual benefit and commitment) that mutual benefit and commitment have a positive significant effect on performance and the t-value for the trust dimension was non-significant. Furthermore, in the multi-group analysis of younger versus older firms, it was found that there was no difference and the results held true for both. It is therefore evident that coopetition is important for SMEs in that it enhances performance of the firms and just as important are the determinants of successful coopetition.

According to Oxley, Sampson and Silverman (2009), there are two types of explanation as to why coopetition can increase firm performance: (1) some alliances 'soften' the competition in the industry, making the business more profitable for all, and (2) alliances may lead to increased competitiveness only among the partnering firms, increasing their performance in relation to that of all other firms. These benefits of coopetition, in the sense of competitive dynamics, may explain why a coopetition strategy could be beneficial in conditions of both low and high competition intensity. Thus, two competing sets of hypotheses are formed in the remainder of this section. In the case of low competition intensity, the two aforementioned benefits of coopetition (competition-tension-lowering and competitiveness-enhancing effects) provide strong reasoning for the use of such strategy. First, coopetition has the potential to affect the competitive dynamics within an industry (Bengtsson, Eriksson & Wincent, 2010; Gnyawali &

Madhavan, 2001; Roy & Yami, 2009), and such an impact is likely to be stronger when there are not that many competitors offering similar products.

Classical economics literature has long been suggesting that collaboration between competitors lowers or softens competition within industries (Lamoreaux, 1985; Pate, 1969). In contemporary legislative and technological environments, such 'softening' is not necessarily a cartel-like agreement aimed at colluding against consumers or suppliers (e.g. Gnyawali & Madhavan, 2008; Jorde & Teece, 1990; Walley, 2007), at least when the competition has not completely disappeared (for a discussion, see Bengtsson, Eriksson & Wincent, 2010). It may rather be a shift in competitive forces towards a more favourable positioning from the point of view of a focal firm engaging in coopetition (Roy and Yami, 2009). In fact, Dussauge and Garrette (1998) found that certain types of coopetition alliances – so-called quasiconcentration alliances – lower the competitive pressures within industries, while the effect was not as visible in other types. However, even in these instances allying with the fiercest rivals can ease the competitive pressure from the perspective of the firm more than from the perspective of the whole industry. The reasoning, according to the literature on strategic groups (Cool & Schendel, 1987; Thomas & Venkatraman, 1988) and the cognitive categorization of rivalry (Porac et al., 1995), is that firms perceive their rivals and competitive dynamics differently inside and outside of the industry. Thus, coopetition may improve performance from the perspective of the individual firm much more than from the perspective of the industry on account of the decreased firm-specific competition intensity.

Second, coopetition is also likely to have a competitiveness-enhancing effect under low competition intensity, and such effect is particularly strong when the competitive field is limited (e.g. Roy & Yami, 2009). As a recent example of such situation, Nokia and Intel have collaborated in developing the MeeGo smart-phone operating system, the logic being that together they can increase their competitiveness within a field in which there are only a few major competitors (iOS from Apple, Windows Phone from Microsoft, and Android from Samsung). In sum, when the two aforementioned benefits of coopetition (decreasing competition tension and enhancing competitiveness) are taken into account within environments with low competition intensity, the following hypotheses can be put forward - we can deduce that, coopetition alignment is beneficial to a firm's innovation performance in conditions of low competition intensity and coopetition alignment is beneficial to a firm's market performance in conditions of low competition intensity.

Table 6: Key empirical research on coopetition and performance

	Author(s)	Research objectives	Research setting	Unit of analysis	Measures	Key Findings
Financial Performance						
1	Ritala et al. (2008)	What is the relationship b/w firm performance and the amount of strategic alliances with firm's key competitors?	• The global ICT sector (56 large companies - 10 largest firms from each group) • N=36 (having at least one or more coopetitive relationships)	Firm-Portfolio	• Coopetition: - The relative number of key competitors among the firm's strategic alliance partners - The relative number of strategic alliances among the firm's key competitors • Performance: ROA, Sales	• A high relative number of strategic alliances among a group of firm's key competitors contributes negatively to firm performance. • Mixed results: statistical sign is negative and significant (p<.05); correlation(r) is 0.42 (positive).
2	Luo, Rindfleisch, & Tse (2007)	The impact of competitor alliances on financial performance.	• Industries: electronics, pharmaceuticals, machinery, chemicals, paper & forest, apparel, rubber & plastic, computer industry.	Firm	• Coopetition: Survey - Competitor alliances (CA) intensity: five items - Competitor-oriented strategies (COS): six items - Competitor-oriented objectives (COO): four items • Performance: ROE	• Competitor alliances intensity has an inverted U-shaped relationship to firm profitability (p<.01; r=.27). • Competitor-oriented strategies are positively related to firm profitability (p<.01; r=.17). • Competitor-oriented objectives are negatively related to firm profitability (p<.01; r=-.12).
Innovation Performance						
3	Ritala & Hurmelinna-Laukkanen (2009)	Firm-specific success factors in coopetition	• A cross-industry survey to 213 Finnish companies	Firm	• Survey • DV: Level of incremental and radical innovation • IVs: Potential absorptive capacity (5 items); Appropriability regime (7 factors)	• In coopetition, both potential absorptive capacity (p<.05; r=.11) and appropriability regime (p<.01; r=.18) have a positive effect on incremental innovation. • In the case of radical innovations, appropriability regime has a positive effect (p<.001; r=.24), while the effect of absorptive capacity is not statistically significant (r=.08).
4	Nieto & Santamaria (2007)	The effects of different type of partners on the degree of novelty of product innovation.	• Survey by Spanish Ministry of Science and Technology from 1998 to 2002 • 6500 observations from 1300 firms	Firm-Portfolio	• Coopetition: Collaboration with competitors exclusively • Innovation: survey - the characteristics (high or low novelty) of product innovation	• Collaboration with competitors exclusively has a negative impact on the novelty of innovation and produces the least level of novel innovations (p<.01); r=-.00). • Collaboration with multiple partners produces positive effects on innovation (p<.01; r=.29)

	Author(s)	Research objectives	Research setting	Unit of analysis	Measures	Key Findings
5	Quintana-Garcia & Benavides-Velasco (2004)	The role of coopetition on innovation performance.	• European biotechnology industry. • Small and medium sized dedicated biotechnology firms.	Alliance	• Coopetition: alliance with direct competitors - other small and medium sized dedicated biotechnology firms. • Innovation: technology diversity (number of technologies), product lines (number of products on the market)	• Coopetition (alliance with direct competitors) generates positive effects on innovation ($p<.001$; $r=.65$). • Downstream alliance (with pharmaceutical or chemical firms) and compete through subsidiary: positive effects on innovation ($p<.001$; $r=.55$). • Other types: insignificant or negative effects on innovation.
Consequences: competitive behavior or JV stability						
6	Gnyawali et al. (2006)	How does coopetition affect firms' competitive behavior?	• Global steel industry network in 1995, compising of 45 major firms.	Firm-Network	• Coopetition: simultaneous cooperation and competition.	• A firm's centrality is positively related to its volume of competition actions. • A firm's structural autonomy is positively related to the diversity of its competitive actions. • Market diversity moderates the impact of centrality and structural autonomy on competitive behavior.
7	Park & Russo (1996)	The predictors of JV failure (whether a JV between direct competitors is more likely to fail).	• 204 JVs in the electronics industry b/w 1979 and 1988	Joint Venture	• Coopetition: JVs between direct competitors (same SIC code)	• Coopetition with competitor in a JV is significantly more likely to fail.
Coopetition Management						
8	Chin, Chan, Lam (2008)	Success factors critical to coopetition strategy management.	• Hong Kong manufacturing industries • Survey: 149 responses • 6 interviews	Firm	• Coopetition: a revolutionary mindset that combines competition and cooperation. • Survey: Hierarchical model consisted of four levels and three categories	• Identified seven critical success factors and 17 critical success sub-factors comprising three categories: management commitment, relationship development, and communication management. • Management leadership and development of trust are the most important success factors.

Source: Park (2011)

3.5.2 Coopetition within the Economics framework

Coopetition agreements can be positioned within transaction-cost economics paradigm. They can be explained as form of governance that can be used to minimize the effects of collaboration between competitors. Transaction cost theory predicts a higher failure rate when partners are in direct competition because competitors are assumed to both be seeking to maximize their share of the market. However, through asset specific investments which include better production, human capital and physical assets, parties in co-operative relationships can maximise value for each other (Manyadu, 2011).

The figure below indicates the fields of economics that are relevant to coopetitive studies, that is game theory, strategic management and new institutional economics. Game theory in coopetition has been studied by several authors. For example, Brandenburger and Nalebuff (1996, pp. 5–8) argued that game theory is useful for understanding coopetitive situations. Lado et al. (1997, p. 113) argued that game theory can explain behaviour in the context of interfirm relationships. Clarke-Hill et al. (2003) and Gnyawali and Park (2009) explained the game theory approach in coopetition situation. Okura (2014) and Ohkita and Okura (2014) explained the advantages of using game theory in coopetition studies. Game theory is concerned with relationships that seek to maximize payoff through co-operative games in such instances as zero-sum games.

Strategic management considers coopetition as one of the dynamic strategies for value creation. The dynamics of collaboration is the bedrock of the management theory that links to the microeconomic elements through game theory. Brandenburger and Nalebuff (1995) discuss intensively the impact and benefits of coopetition in management theory.

Coopetition is also underpinned by New Institutional Economics which is concerned with the social and legal norms and rules that underlie economic activity. Related to the construct of contracts under the transaction cost paradigm, this enables the fruition of co-operative relationship under set guidelines and rules.

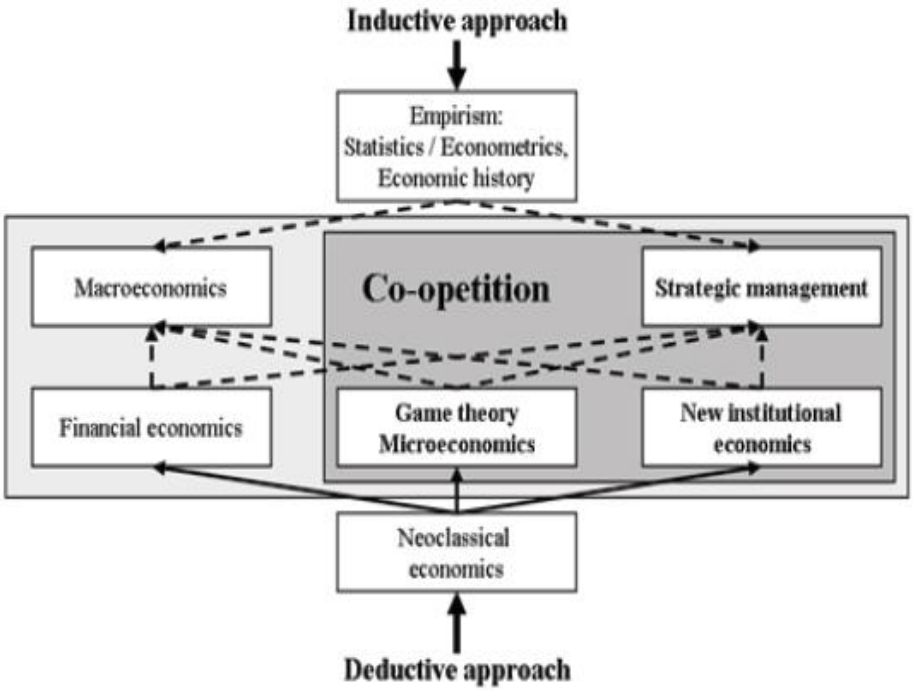


Figure 5: Fields of economics that are relevant to coopetition

Source: Stein (2011)

3.6 Foresight in coopetitive relationships

Undoubtedly, foresight is an important aspect in strategy formulation and execution. It drives all planning, the firm's mission, and vision. It is also a key attribute for all entrepreneurs to possess. Foresight allows entrepreneurs to assess forthcoming circumstances in their competitive environments and act accordingly, it is the means by which entrepreneurs can be proactive towards risk. A lot of literature in entrepreneurship theory has emphasised the importance of foresight as a crucial element for both the entrepreneur and stakeholders. Foresight is an aspect of strategic thinking; it is based on exploration and options.

Foresight can be defined as a systematic process to look into the long-term future of technology, environment, the economy and of the business (Miles, Meissner, Vonortas & Carayannis, 2017). Different aspects of the literature make different assumptions about the foresight possessed by economic agents; macroeconomics, for example, assumes perfect foresight of the whole future as was the case in Brock and Turnovsky (1981) where they used a representative agent model to study the effects of policy on macroeconomic equilibrium. Rational-expectations econometrics also assume adequate foresight when substituting actual values with

expected values, because with little foresight there would be great inefficiencies due to large errors.

More notably are models that exhibit myopic expectations that include knowledge of current circumstance but no foresight of the future. These models suffer when there are lags, sometimes of several years, an example is a model that assumes that agents in an initial equilibrium have adjusted fully to an initial policy which is then replaced by a new policy that was not foreseen by the agents in the initial equilibrium. Given these shortcomings, it is imperative to then ask how much foresight the agents have (Miles, 2017).

Technological and strategic foresight are the two elements relevant to coopetition studies because the relationship aims to create technological innovation and strategic moves to gain greater advantage over competitions. Technology foresight, a systematic means of assessing technological developments, which could influence the dynamics of competition within an industry, offers an essential tool for this endeavour. It helps when making choices in complex situations by exploring alternative options, and/or bringing together firms with complementary experiences and knowledge (Miles, 2017). In doing so, and discussing various visions with stakeholders, it also leads to a more transparent decision-making process. Foresight processes can reduce uncertainty as well, because participants can align their endeavours once they arrive at a shared vision. It is common knowledge that SMEs are faced with technological challenges, coopetition eases the burden and allows firms in the relationship to make innovative progress at a rate higher than each firm would separately. Technological foresight is key in industries that require up-to-date technology and innovation.

Strategic foresight is concerned with the internal affairs of the business and the use of available resources to address future challenges. Within the Schumpeterian school of thought, the entrepreneur is responsible for carrying out new combinations to achieve technological advancement by making use of current resources and rearranging them to form these new combinations. The resources are not only limited to those owned by the firm as other resources may be acquired through coopetitive relationships in order to create new combinations.

Partners in a coopetitive relationship need to have complimentary foresight to pull resources in the same direction. It is therefore important to know how much foresight the other has so that both firms can work together towards successful coopetition. To measure foresight, the method from Douglas and Stuart (1997) is adopted.

Proposition 1: Individual (owner/manager) foresight moderates the relationship between successful coopetition (trust, commitment, mutual benefit)[4] and firm performance.

3.7 The ability to exploit opportunities

The suggestion that entrepreneurs exploit opportunities to create wealth dates back centuries (Cantillion, 1755; Smith, 1776; Ricardo, 1966; Knight, 1921; Kirzner, 1997; Schumpeter, 1939). In these circumstances, individuals identify imperfections in the market and seek to exploit them as opportunities to generate economic profits. Significant amounts of research have explored how entrepreneurs exploit opportunities and the implications thereof, from the formation of market equilibria (Smith, 1776) to technological progress and the business cycle (Schumpeter, 1939).

Recent literature has emerged after the recognition that the way opportunities are formed has bearing on the manner in which they are exploited (Alvarez, Barney, & Anderson, 2013). Two perspectives on the matter are prominent, the first implies that opportunities are formed by exogeneous shocks to the pre-existing markets which are discovered by the entrepreneur. The second suggests that they are formed endogenously and are created by the entrepreneur (Shane & Venkataraman, 2000).

According to the neo-classical economic framework, opportunity exists when competitive imperfections exist in the market. This definition suggests that agents acting under conditions of perfect competition will not be able to generate economic wealth (Alvarez, 2013). Therefore, for opportunities to exist for the generation of economic wealth, there must be competitive imperfections such as entry barriers, heterogeneously distributed information, transaction cost, resource barriers and so forth. Thus, inherent in the definition of an entrepreneur, is someone who is able to exploit these opportunities for wealth creation.

There has been a wide array of arguments on the difference between entrepreneurs and non-entrepreneurs in explaining why some are able to recognize opportunities and others are not. Some of the arguments leaned towards psychological factors such as extroversion, risk taking propensity (Caird, 1991), need for achievement (Begley & Boyd, 1986), self-efficacy (Baron, 1999) and locus of control (Shapero, 1975). Others leaned toward non-psychological elements such as age, gender, and career experience (Shane, 2001). Overall, efforts to find systematic

[4] When there is trust, mutual benefit, and commitment between the partners in a coopetitive relationship, it is deemed successful, as per literature.

difference between entrepreneurs and non-entrepreneurs have had limited success (Alvarez, 2013) and only cognitive differences have been found. Even then, personality and demographic differences were statistically insignificant.

In Kirzner's definition of entrepreneurship, alertness distinguishes entrepreneurs from non-entrepreneurs, suggesting that the former possesses the ability to recognize opportunities. He, however, is not clear whence this ability comes, and it may perhaps be the result of personality, cognitive traits, or some bounded rationality in complex market information (Kirzner, 2015).

March (1991) makes a clear distinction between exploration and exploitation of opportunities. Both vary in timing, duration and required resources and often the firm faces a trade-off between the two as discussed in theories of limited rationality. When resources are limited, SMEs must choose to explore or exploit current opportunities, the choice is dictated by the aspirations of the firm. The firm may choose to explore further if the current opportunities present returns that are below target and may choose to exploit if the returns are above a desirable target. Exploration to the exclusion of exploitation may see the firm suffer costs of experimentation without receiving any benefits. Exploitation is concerned with production, refinement, implementation and execution of planned strategies (March, 1991).

Alvarez, Barney and Anderson (2013), on the other hand, suggest that firms should explore, either to discover or to create opportunities. This, however, suggests that opportunities already exist and are lying in wait somewhere to be discovered - a notion rooted in a critical realist epistemology that assumes a certain external reality. Indeed, the firms have no way of knowing how the opportunity will unfold in a risky environment, with incomplete contract theory and hierarchical governance of transaction cost economics (Williamson, 1985) serving as guidelines, it cannot be known how decisions are made.

Therefore, firms in coopetitive relationships must agree on the decision to exploit the opportunities presented by the relationship and each partner must perceive the returns to be higher than their individual targets. Partners with a difference in views of whether to explore or exploit current opportunities may cause the coopetitive relationship to crumble, more so when resources are limited and not pooled in one direction, there will not be a mutual benefit from the relationship.

Proposition 2: Individual (owner/manager) ability to exploit opportunities moderates the relationship between successful coopetition (trust, commitment, mutual benefit) and firm performance.

3.8 Risk aversion of the entrepreneurs

Rooted in the work of Knight (1921), in the theory of competitive equilibrium under uncertainty, individuals have labour which they can supply as workers to the labour market or as entrepreneurs running firms. All firms have access to the same risky technologies and may generate profits from them (Knight, 1921). However, in the equilibrium, the more risk averse individuals become workers and the less risk averse individuals become entrepreneurs (Ahmed, 1985).

Knight assumes that for each firm there is an entrepreneur who makes decisions for the firm to maximize expected utility (Kihlstrom & Laffont, 1979). Each individual in Kihlstrom and Laffont's model has the choice to be an employee or the entrepreneur. The decision of course, depends on several factors, including the availability of capital to create the firm, labour skill, entrepreneurial ability and most notably, the attitude towards risk (Kihlstrom & Laffont, 1979).

For an individual to be an entrepreneur, he must thus have low risk aversion, and more so to be a successful entrepreneur. In line with this notion, the entrepreneurs in a coopetitive relationship should have similar risk aversion for the relationship to be successful. Recognizing and exploiting opportunities in risky markets is key and the level of risk aversion will determine whether the agents gravitate towards the desired equilibrium of co-operating while competing in order to achieve the target payoffs. A similar risk appetite fosters commitment of the individual firms to the coopetitive relationship (Thomason, 2013).

The more risk averse individuals are likely to lead the firm towards the less risky equilibrium, that is to continue with the current state of competition and not engage in coopetitive relationships with uncertain outcomes based on imperfect information distribution in the market. It is therefore justified to assume that risk aversion will negatively relate to the success of the coopetitive relationship as the perceived cost of the potential benefit is greater than the benefit itself and will undoubtedly have a negative impact on the extent of commitment by the firms in the relationship. The following proposition is made:

Proposition 3: Individual (owner/manager) risk aversion (avoidance) moderates the relationship between successful coopetition (trust, commitment, mutual benefit) and firm performance.

Table 7: Determinants and theoretic linkage

Determinant	Authors of relevant theory	Impact on coopetition
Foresight	Cantillon, Knight	Commitment, trust
Exploiting opportunities	Kirzner, Schumpeter	Benefit
Risk aversion	Say, Marshall	Benefit

Source: Author's compilation

From the above propositions, the following conceptual model for empirical enquiry serves as a guideline for the research design.

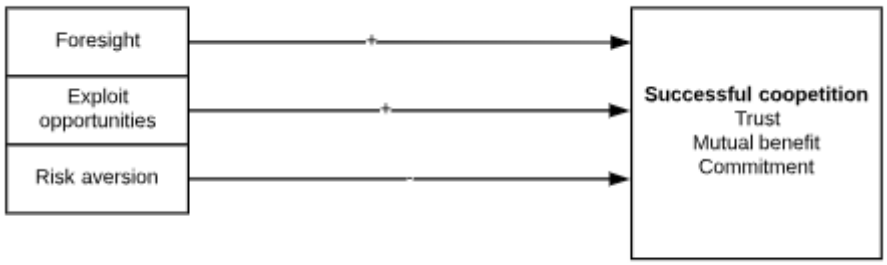


Figure 6: Exploratory model of successful coopetition

Source: Articulated by author

3.9 Conclusion

In this chapter, all the suggested determinants for successful coopetition were discussed in detail (foresight, exploiting opportunities, risk aversion). A summative linkage of the proposed determinants to entrepreneurship theories was provided. Furthermore, proposition of each determinant and their positive or negative relation to successful coopetition were discussed. The chapter, accordingly, concluded with a logical explorative model of successful coopetition.

While other determinants (leadership, industry knowledge and management ability) were consider in addition, it was found to be a challenge to measure the variables as they are individual characteristics that would require an extensive method to measure and the limited availability of studies concerned with the measurement of these variables makes it difficult to consider these variables in this study.

Chapter 4: Methodology

4.1 Introduction

In this chapter, the aim of the investigation is outlined alongside the sample, the measurement instruments, the design of the study, as well as the method that is deployed for the relevant empirical tests of the study. Furthermore, the data analysis is explained in detail. The aim is to investigate the relationship between the proposed determinants and successful coopetition and the moderating effect between coopetition and firm performance, which, in turn, would yield strategy and policy articulations that would enhance SME's sustainability and contributions to the economic growth agenda.

4.2 Research design

A cross-sectional design was applied for this research. Leedy and Ormrod (2010, p. 186) highlight that a cross-sectional design involves sampling and comparing people or variables from several different groups. The researcher can collect the required data for a single time period. Cross-sectional designs are commonly used in developmental studies, however, they can also be used in other different disciplines (Leedy & Ormrod, 2005).

This research made use of the quantitative research strategy. Quantitative research involves looking at amounts, or quantities, of one or more variables of interest and the relationships thereof (Leedy & Ormrod, 2010: 94). This form of research is most appropriate where there is an objective reality that can be measured, supportive of quantitative studies, confirmatory or predictive and in deductive reasoning and statistics, among others (Leedy & Ormrod, 2010: 107).

4.3 Data collection and sample

The aim of the research was to investigate whether entrepreneurs' (in the node of SMEs') foresight, ability to exploit opportunities and risk aversion influence the success of coopetition in SMEs within the SADC region. Data was collected from a random sample of 9045 SMEs in different industries across the SADC region. Data was collected using online questionnaires generated on SurveyMonkey. The sample was obtained from the Thomson Database and filtered accordingly. The survey was then sent by email to each potential respondent and a period of six months was given to collect responses.

4.4 Data analysis

4.4.1 Measuring the variables

4.4.1.1 Foresight

Firms often enter in a coopetitive relationship to share resources and cut the costs of investments. If a firm, for example, knows that the coopetitive relationship it will enter in the future will allow the firm to minimize its investment, it should do precisely that.

Foresight between coopetitive partners is key in dealing with uncertainty and a common vision may assist to synergise the objectives and strategies of the partners.

In Amsteus (2011), the construction and estimation of the instrument used to measure foresight is detailed. The Likert items were assessed through interviews and pre-testing with managers in different industries. Confirmatory factor analyses were employed and subscale and model fit was assessed (Grim, 2009). The 12 Likert item scale was found to be valid and reliable and were employed in this research to measure foresight.

The aspects of the instruments are divided into time and analysis with dimensions such as the current situation (internal and external conditions), planned course of action and goals (desired future state) investigated. It is also acknowledged that prior knowledge has significant influence on the foresight of the entrepreneur, primarily in identifying exploitable opportunities and dealing with uncertainty (Amsteus, 2011).

4.4.1.2 Exploiting opportunities

The ability to recognize and exploit opportunities is dependent on several factors, as described in literature. These seem to be continuously present in scholars' description of successful entrepreneurs and their endeavour to exploit opportunities. For the purpose of this research, a questionnaire was used to rate the entrepreneur on each element and cumulative score used to calculate on a scale their ability to exploit opportunities. The measure is composed of prior related knowledge (Cohen & Levinthal, 1990), risk taking propensity (Caird, 1991), self-efficacy (Baron, 1999) and locus of control (Shapero, 1975). These determinants were chosen due to the consensus of their validity in published literature.

The measurement instruments used for E1, a base line test was adopted from Hestenes and Wells (1992). The instrument was used to assess prior knowledge in students. The measure is appropriate in this instance in that it will give an indication of the entrepreneurs' prior

knowledge and how that relates to their decision making when faced with different scenarios with hidden opportunities (Hestenes & Wells, 1992).

Wallach and Kogan (1964) developed a Choice Dilemmas Questionnaire (CDQ) to obtain the probability preference in everyday situations. The same method was used to measure risk propensity of the entrepreneurs in the sample. Several hypothetical questions were presented to the respondents to choose between safe and risky alternatives. The respondents were then asked to indicate the probability of success that is sufficient for him to choose the risky alternative. An example of a typical CDQ question:

> "Mr. A, an electrical engineer, who is married and has one child, has been working for a large electronics corporation since graduating from college five years ago. He is assured of a lifetime job with a modest, though adequate, salary, and liberal pension benefits upon retirement. On the other hand, it is very unlikely that his salary will increase much before he retires. While attending a convention, Mr. A is offered a job with a small, newly founded company which has a highly uncertain future. The new job would pay more to start and would offer the possibility of a share in the ownership if the company survived the competition of the larger firms. Imagine that you are advising Mr. A. Listed below are several probabilities or odds of the new company's proving financially sound. Please check the lowest probability that you would consider acceptable to make worthwhile for Mr. A to take the new job.
>
> The chances are I in 10 that the company will prove financially sound.
>
> The chances are 3 in 10 that the company will prove financially sound.
>
> The chances are 5 in 10 that the company will prove financially sound.
>
> The chances are 7 in 10 that the company will prove financially sound.
>
> The chances are 9 in 10 that the company will prove financially sound."

The CDQ is widely used in research to measure risk propensity despite its short comings, which are of not much importance in this research as the aim is to have comparative results between respondents (Kogan, 1964).

4.4.1.3 Risk aversion

In the expected utility (EU) framework and its variants, including prospect theory (Kahneman & Tversky, 1979), risk attitude is nothing more than a descriptive label for the shape of the utility function presumed to underlie a person's choices. Risk aversion is fundamentally a parameter used to determine the amount of satisfaction or utility we derive from a certain experience (Thomas, 2016). A person's risk attitude describes the shape of his or her utility function (derived from a series of risky choices) for the outcomes in question.

A commonly used metric of risk attitude is defined as u"(x)/u'(x), where u' and u" denote the first and second derivatives of the utility function u, respectively (Arrow, 1971; Pratt, 1992). The terms 'risk averse' and 'risk seeking' within the EU framework technically refer only to the curvature of the utility function, which is insufficient to be the total measure of risk aversion. Risk attitude, a person's standing on the continuum from risk aversion to risk seeking, is commonly considered to be a personality trait, and greater risk taking is sometimes found to be associated with greater personal and corporate success (MacCrimmon & Wehrung, 1990).

The Arrow-Pratt measure of risk aversion's u"(x)/u'(x) invariance to an affine[5] transformation is an essential property of the utility function. This would however, give us a negative number as a risk-averse entrepreneur's measure because by rule, any utility function must be increasing in its argument as per monotonicity properties (Pratt, 1992). From a theoretical standpoint and as early as 1978, several instruments have been developed aiming at a risk propensity mind-set. Notably, contributions by Lopes (1988), Lopes and Ogden (1998), Sitkin and Pablo (1992) and Weber (1988) proved significant in developing questionnaires to measure risk aversion.

According to Rohrmaan (2002), there are two principal approaches in measuring risk aversion; (1) choice problems with risk options also known as the gamble, (2) statement describing risk taking mind-set or behaviours. This research employs the latter due to the notions that the former is highly hypothetical and not easily understood by everyone.

Risk attitudes are inherently variables which moderate risk decision; Figure 7 is based on the assumption that an entrepreneur's risk aversion influences, in addition to the outcomes of risk

[5] adjective, describing a function with a constant slope. Distinguished from linear which sometimes is meant to imply that the function has no constant term; that it is zero when the independent variables are zero. An affine function may have a non-zero value when the independent variables are zero (Thomas, 2016)
Examples: $y = 2x$ is linear in x, whereas $y = 4x + 9$ is an affine function of x.
And $y = 2x + z^2$ is affine in x but not in z.

cognition and perception processes, how positive or negative a risk appraisal is. Thereby, increasing or decreasing the likelihood that a risky course of action may be taken.

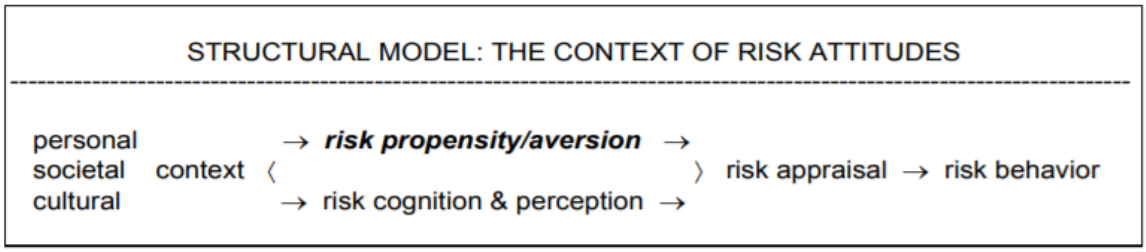


Figure 7: The potential role of risk attitudes

Source: Rohrmann (2002)

To measure the risk orientation of the entrepreneur we used the Risk Orientation Questionnaire with the following rationale:

- General orientation towards risk taking.
- Using standard format of attitude scale presenting statements and asking for level of agreement on a 5-point scale.
- Providing statements for expressing risk propensity and risk avoidance.

4.4.2 Determinants of successful coopetition -Theoretical framework

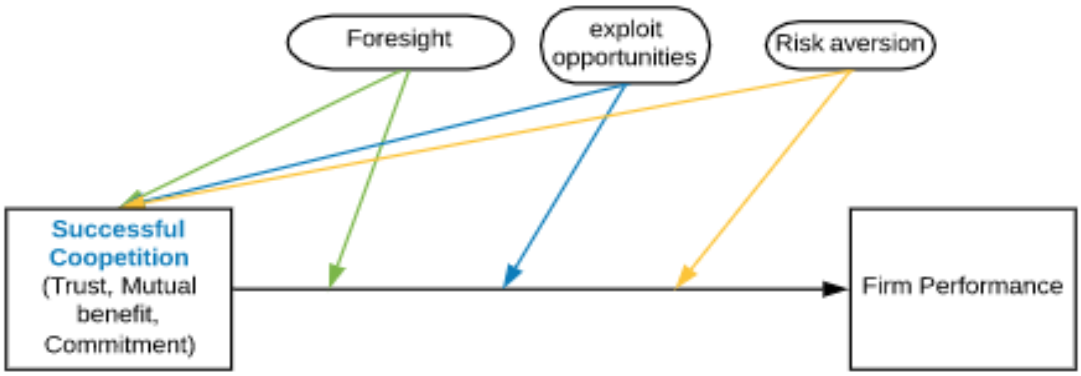


Figure 8: Theoretical framework

Source: Authors articulation

The model above shows the relationship between different aspects of theory discussed in this chapter. The model depicts interrelationship between successful coopetition and firm

performance as mediated by foresight, ability to exploit opportunities and risk aversion. While we know from theory that coopetition is successful when trust, mutual benefit and commitment are present, the study aims to investigate the influence of the moderating variables on the relationship between the constructs of successful coopetition and firm performance.

4.4.2.1 Proposed hypotheses

H_1: Successful coopetition has a positive effect on firm performance.

H_2: Successful coopetition moderated by foresight has a positive effect on firm performance.

H_3: Successful coopetition moderated by the ability to exploit opportunities has a positive effect on firm performance.

H_4: Successful coopetition moderated by risk aversion has a positive effect on firm performance.

4.4.3 Demographic factors

Seven items were included which could act as a mediator between the predictor and predicted variable. According to Weathington, Cunningham and Pittenger (2012, p. 261), a mediator variable illustrates why a relationship occurs and how the relationship is exemplified.

These pertinent items included:

- Gender: Male; Female.
- Race: Asian; Black; Coloured; White.
- Age: Years.
- Years of formal schooling: Less than 12 years;12 years (matriculation);1st Degree / Diploma; Higher degree / Higher diploma
- Number of years with present employer: Years.
- Type of work: Support/administration; Management of support/administration; Core business/ operations; Management of core business/operations.
- Post level: top management; senior management; professionally qualified, experienced specialists and middle management; skilled technical and academically qualified workers, junior management, supervisors, foremen and superintendents; semi-skilled and discretionary decision making; unskilled and defined decision making.

4.4.4 Questionnaire development

To conduct the study, a questionnaire was developed that included the seven key constructs: Successful coopetition as a function of foresight, exploiting opportunities, risk aversion, leadership, industry knowledge and management involvement. To enhance reliability and validity of measurement and to include a wider variability between survey individuals, multi-item measures were generated for each construct.

Through a wide study of literature, both theoretical and empirical, the constructs and their measures were generated, based on previous empirical studies in the field. Each construct had at least three items for measurement in order for confirmatory factor analysis to be used. A 7-point Likert scale was used for measuring the perception of the individuals being surveyed (where 1: Strongly disagree and 7: Strongly agree) for all measures in the theoretical model. Firm size and number of employees were used as control variables to explain extraneous effects and to limit the possibility of their effects on the relationship between the main variables. Firm size has been considered as an important variable in observing organizational variables (Chen & Paulraj, 2004). In strategic management particularly, the bigger the firm, the more likely they are able to use organizational resources and skills to execute coopetitive strategies (Eikebrokk & Olsen, 2005). Table 8 presents the constructs and measurement items

Table 8: Constructs and measurement items

Successful coopetition
Variables and items
Trust
It represents the entrepreneurial perception that one of the partners in the coopetitive relationship is reliable in their obligations inside an interchange relationship. It is based on a scale developed by Norman (2002) for a study of 61 business alliances in order to identify trust in a network of telecommunication industries and software firms in the United States of America (Cronbach Alfa= 0,89).
-We can trust other firms in the industry to form strategic alliances. *-In my opinion, there is a high level of harmony in the working relationship between businesses in this industry.* *-I trust that the members of the coopetitive relationship in this industry will be good for my business.* *-I trust that the decisions of the members in the coopetitive relationship will be good for my business.*

Mutual benefit

Adopted from a questionnaire issued to 647 randomly selected small business owners in Turkey to develop a coopetition scale to measure the dimensions of coopetition by Morris, Kocak and Ozner (2007) (Cronbach Alfa=0,82)

-Even though the partner is my competitor, I would not hesitate to get into a relationship if my competitive position would be enhanced.
-Even though the partner is my competitor, we are open to sharing resources and information.
-Even if I establish a relationship with a competitor, competition with the partner is more important to me.
-When I have a relationship with a partner, the relationship is more important than competing.
-To establish a relationship with my competitor, both companies must have mutual goals and objectives.

Commitment

The entrepreneurial perception of the degree of cooperation among firms in the industry. The scale was based on Coote, Forrest and Tam (2003) which was adapted from Morgan and Hunt (1994). They applied this to a sample of 152 companies, in order to identify the 'commitment' in non-western industrial marketing relationships (Cronbach Alfa= 0,91). The questions adapted to coopetition are:

-It is important for my firm to participate in a cooperative network or to partnering with firms or
organizations in the same industry.
-For the success of a relationship I establish with my competitor, I must be completely committed.
-For the success of a relationship I establish with my competitor, my partner must be as committed as I am.
-I intend to maintain cooperative relationships with other firms in the industry.
-I am very committed to partnering among firms in the sector.

Determinants of Successful coopetition
Variables and items

Foresight

Amsteus (2010) developed a 12 Likert item scale from 57 preliminary Likert items based on an extant review and synthesis of definition of foresight. The items were assessed through interviews and pre-testing. Exploratory and confirmatory factor analyses were employed to assess sub-scales and model fit (Cronbach Alfa =0,88). The questions adapted to the study are:

-I systematically scan all environmental areas.
-I systematically scan all, the short, medium and long-term.

-I often consider multiple futures and have systematic ways for defining strategy in environments with different levels of uncertainty.

-My past forecasts have been highly accurate.

Exploiting opportunities

In Kuckertz et al. (2017), 595 participants were given 81 items to identify as opportunity recognition or exploitation. The results yielded a 13-item measure for opportunity exploitation and these were further tested and responses from 101 participants were received (Cronbach Alfa= 0,87).

-I rely mostly on experience-based intuition rather than explicit methods to interpret the environment.

-I have dedicated unit that has the mandate to explore and develop new markets that can contribute to revenue.

-I am best at exploring our current markets and/or adjacent to our current markets.

Risk aversion

In Rohrmann (2002), an analysis of 20 Risk Scenario Questionnaire (RSQ) items were run through several developmental stages using several different samples until the final version of the risk orientation questionnaire using 2 factor analysis which indicated 2 correlating factors; risk propensity and cautiousness. The question adopted from the RSQ are as follows:

-My activities for exploring new markets are limited to low-risk probing.

-I usually invest in low risk project.

I am comfortable with activities that yield high returns at high risk.

For the purpose of this research and for practicality; only foresight, ability to exploit opportunities and risk aversion were tested. The full questionnaire is annexed at the end of the document for ease of reference.

4.4.5 Method of analyzing data

Initially the data which describes the sample was generated. This was done in the form of continuous variables and frequencies for categorical data. Subsequent to that, descriptive statistics were calculated for the predictor and the predicted variable per each organisation in the sector. The mean was a measure of location and it provided a measure of central location for a data set (Anderson, Sweeny, Williams, Freeman & Shoesmith 1998, p. 48). Another important measure in this research was the standard deviation. It is described as a positive square root of the variance which explains the average amount of variation on either side of the mean (Agarwal, 2013, p. 82).

Reliability information was generated during the study, with Cronbach alpha calculated for the purpose. Cooper and Schindler (2014, p. 260) explain that the Cronbach alpha represents the degree to which measurement instruments are homogeneous and reflect the underlying

constructs. The measurement is from zero to one representing no internal consistency and perfect agreement among items in the test, respectively (Weathington, Cunningham & Pittenger, 2012, p. 256)

T-tests were also performed. A t-test is the statistical procedure used to determine the observed differences in the sample means (Anderson, Sweeny, Williams, Freeman & Shoesmith, 1994). This was done to establish the similarities between organizations. If the variability among the sample means is small, it supports homogeneity of the organizations. However, if the variability among the sample means is high, it supports non-homogeneity of the organizations. The F-test statistic reflecting its p-value was used to indicate whether homogeneity exists or not.

The correlation between different predictor variables and successful coopetition was calculated. A correlation between two or more variables assists in understanding the interdependence between the variables concerned. (Agarwal, 2013, p. 403). It means that a change in one variable is accompanied by the proportionate change in the other variable. This could be either positive correlation where the increase in one variable is accompanied by the proportionate increase in the other variable or negative correlation where the increase in one variable causes the proportionate decrease in the other variable. Agarwal (2013, p. 429) mentions that the coefficient of determination [(r^2) = variance explained/total variance] explains the extent of the variation of the dependent variable as expressed by the dependent variable. A high value of r^2 indicates the existence of a good linear relation, and r^2 of 1 would indicate a perfect relationship between the two variables. The extreme end of deviation is called the coefficient of alienation and is depicted by ($1 - r^2$).

A linear regression analysis was also performed, with all the items of the predicted variables as dependent variables, and the predictor variable as independent variable. Hanneman, Kposowa and Riddle (2013, p. 454) define linear regression as a technique that a researcher can use to analyze the relationship between a dependent variable and one or more independent variables. The researcher then establishes how adequate the prediction is through a process called the goodness of fit. As guidance, a correlation of 0.10 is small, 0.30 is medium and 0.50 is large. These conclusions are not always correct and should not always be taken at face value. There is a chance that the outcome obtained in the sample is not true in the population interpreted as a false positive. This is called a type 1 (Alpha) error and is the worst kind for a scientist (Hanneman, Kposowa, & Riddle, 2012) Another type of error mentioned by

Hanneman, Kposowa and Riddle (2013, p. 249) is the type II (beta) error also called the false negative. The results reflect that the sample data are inconsistent with the theory, however, this is a chance result for the sample, but the theory is still valid for the entire population. This is less serious than a type I error because it still leaves room for continued search of a solution.

A linear regression analysis was performed with the predicted variable total score or the sections scores of the predicted variable – where applicable, and some demographic variables such as age, years with present employer, as dependent variables, and the predictor variable as independent variable. The demographic variables will have a mediating effect should the betas be significant.

4.4.5.1 Structural Equation Modelling (SEM)

Structural Equation modelling (SEM) is a general statistical technique widely used in the behavioural sciences; it includes a combination of several traditional multivariant procedures such as factor analysis, regression analysis, discriminant analysis and canonical correlation (Duncan, 2014). The models under this framework are often depicted by a graphical path diagram and the statistical model is usually in the form of matrix equations.

In SEM, a model must be specified before the analysis can be carried out. The model is usually guided by a combination of theory and empirical results from previous research. Once the model is specified, the covariance and factor loadings can be estimated. A chi-square can also be used to assess how well the model fits the data. Should the chi-square be highly significant, it means the hypothesized model should not be supported and better model should be sought. It should be noted however, that the chi-square's power is dependent on assumptions and the size of the sample (Duncan, 2014)

The use of Multiple regression analysis is also common in SEM, here, it is generally assumed that the independent variables are correlated. Furthermore, the residual error in multiple regression analysis is an unobserved latent variable. The model analysed is depicted below based on the above literature and described relevant variables of the coopetition process in relation to firm performance.

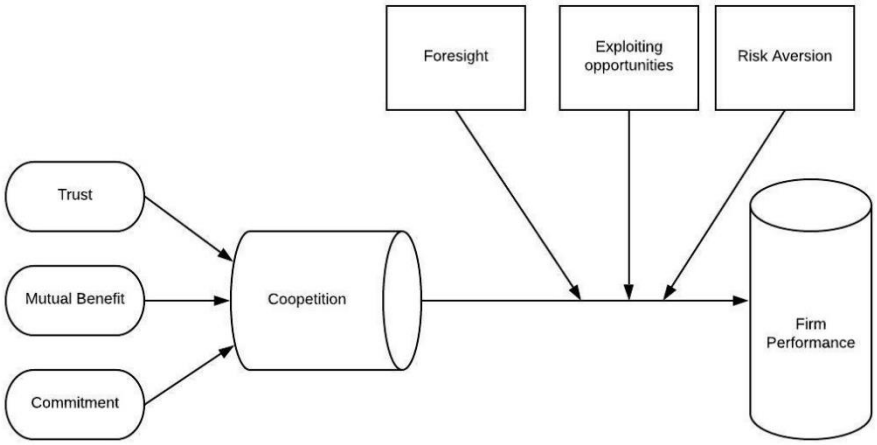


Figure 9: Hypothesised model to be analysed using SEM

The analysis of the depicted model was conducted with SPSS AMOS, a data analysis and statistical software. There are many different programs that can be used to achieve the same results, but for practicality and ease of use, SPSS AMOS is chosen for this purpose.

4.5 Methodology process

The systematically numbered activities below reflect the process that was followed in this work's research method.

1.Random sampling for practicality

- sample the countries in SADC
- Sample the industries
- Sample the firms

2. Use SEM to determine the relationship between variables including multiple regression analysis

3. Determine how likely are parties willing to coopete given the determinants and certain payoffs – matrix plot on six dimensional Cartesian planes (different industries)- Solve the matrices.

4. Use Bayesian data analyses to determine the variable influencing coopetition – work backwards, we know coopetition relationship is successful, what factors influence this- test the determinants whether they fit within the region of practical equivalence (ROPE), the relationships determined in 1 are set as priors.

5. Draw conclusion and generalization

4.6 Conclusion

The methodology of the study has been outlined in this chapter. The relationship of different constructs emphasized from the previous chapter in addition to the measurement instruments drawn from literature were set out for each proposed determinant. Details of the sample were given and justified along with the most appropriate method for analysing the Data set. The chapter ends with an outline of the methodology process that was followed when the research was conducted.

Chapter 5: Results

5.1 Introduction

The structural equation modelling (SEM) analysis was conducted using IBM SPSS AMOS version 25. The purpose of this analysis is to evaluate the structural relationships of the variables specified on the conceptual model (Figure 1). The choice of IBM SPSS AMOS was motivated by its covariance approach which provides robust estimations of the model fit indices as well as its visual representation of the confirmatory factor analysis (measurement model).

The following hypotheses were tested:

H1: Successful coopetition has a positive effect on Firm performance.

H2: Foresight moderates the relationship between Successful coopetition and Firm performance.

H3: Ability to exploit opportunities moderates the relationship between Successful coopetition and Firm performance.

H4: Risk aversion moderates the relationship between Successful coopetition and Firm performance.

5.2 Data screening and cleaning

Descriptive analysis was conducted on IBM SPSS Statistic version 25 to screen and identify variables with missing information. There are several methods of dealing with missing data on SPSS, among them is Exclude cases, likewise, Exclude cases pairwise, and single imputation mean (Pallant 2010). For this analysis, single imputation mean method was applied. Single imputation consists of replacing the missing value with the mean, and is often applied when the missing data is less than 5%.

5.3 Descriptive statistics

Before presenting the SEM results, descriptive statistics are displayed to give an overview of the studied sample. Demographic profile of the respondents is presented from Table 9 to Table 18 below.

5.4 Demographic information of the respondents

According to Table 9, most company's head offices are based in South Africa (54,9%).

Table 9: Analysis by country

In which country is your company's headquarters?			
		Frequency	Valid Percent
	Angola	56	15,8
	Botswana	7	2,0
	Democratic Republic of Congo	20	5,6
	Lesotho	3	0,8
	Madagascar	1	0,3
	Malawi	6	1,7
	Mauritius	13	3,7
	Mozambique	4	1,1
	Namibia	6	1,7
	Seychelles	4	1,1
	South Africa	195	54,9
	Swaziland	3	0,8
	United Republic of Tanzania	18	5,1
	Zambia	8	2,3
	Zimbabwe	9	2,5
	United Kingdom	1	0,3
	Portugal	1	0,3
	Total	355	100,0

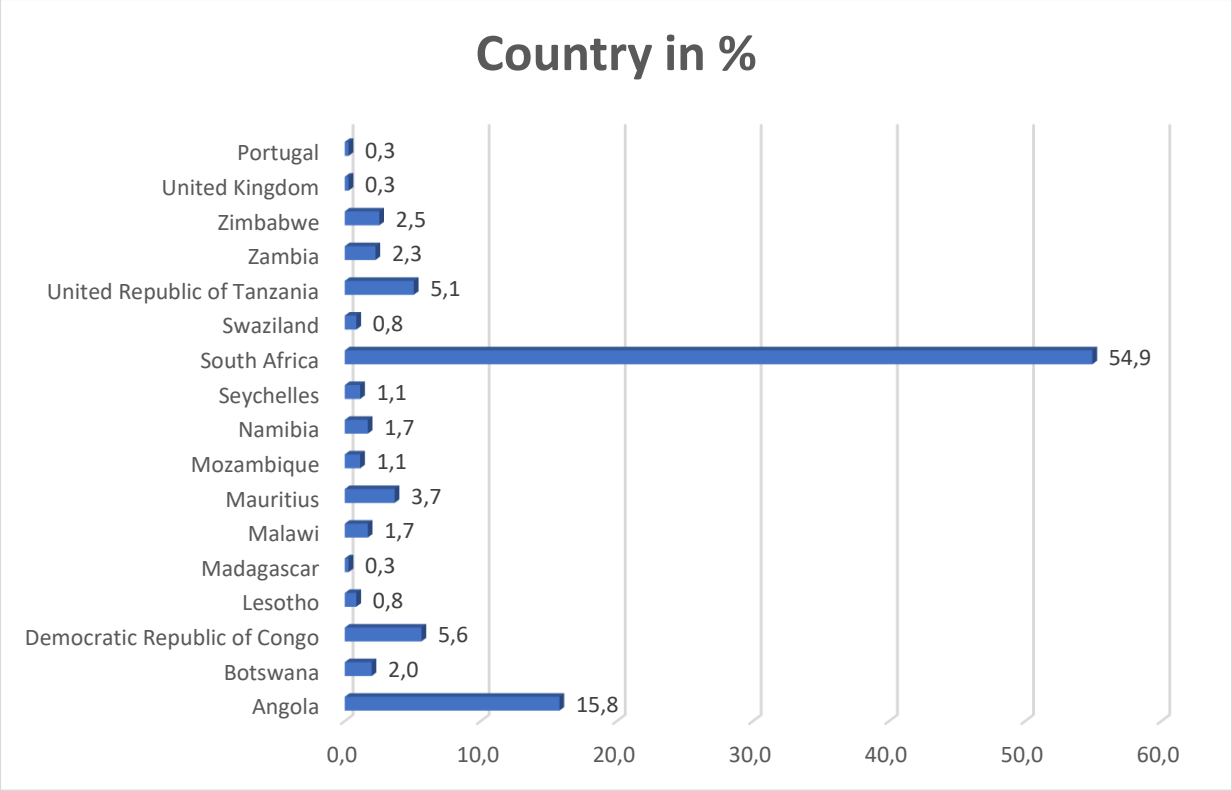


Figure 10: Country by percentage

As indicated in Table 10 below, most company's annual turnover is less < 5 million (54,6%).

Table 10: Analysis by turnover

What is your entity's average annual sales (turnover) in US Dollars?			
		Frequency	Valid Percent
	Missing information	1	0,3
	> 50 million	22	6,2
	10 million < 20 million	37	10,4
	20 million < 50 million	20	5,6
	5 million < 10 million	81	22,8
	less < 5 million	194	54,6
	Total	355	100,0

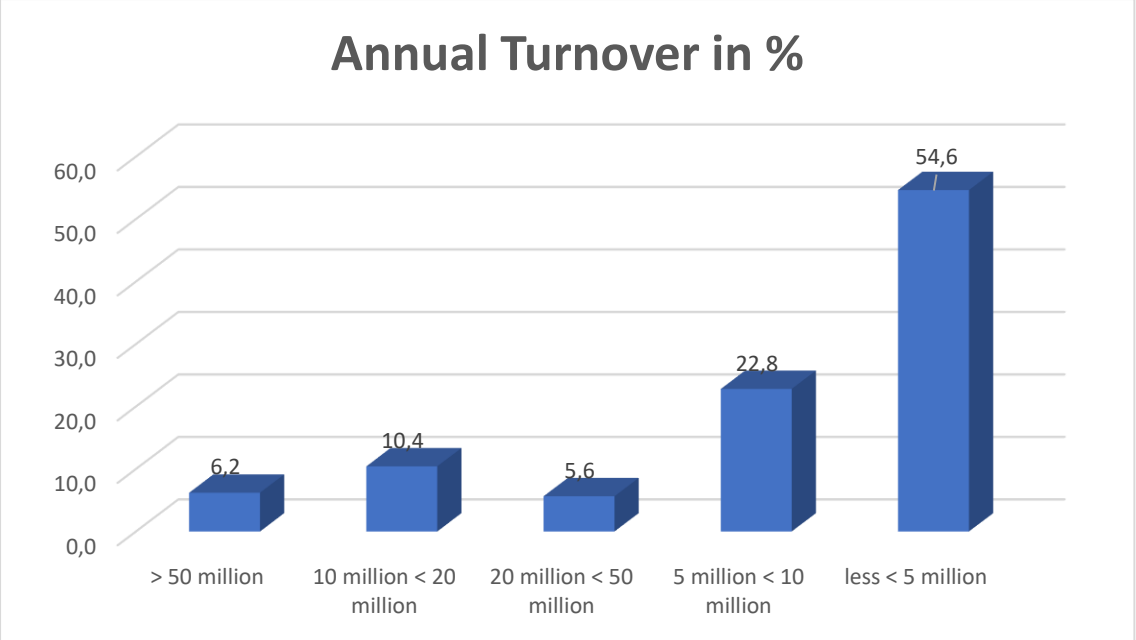


Figure 11: Annual turnover in percentage

The results (Table 11) show that most of the employees have worked for 17 years in the operation. However, the standard deviation (15.54 years) suggests that the majority of people have between 1.46-year (17-15.54) and 32.54 (17+15.54) years worked in the operation.

Table 11: Number of years in operation

Number of years in operation?	
Mean	17
Std. Deviation	15,54

The results (Table 12) indicate that the majority of the entities have fewer than 50 employees (66,5%). Only 8,2% of the companies investigated have more than 200 employees within their entity.

Table 12: Number of employees

Number of employees in the entity			
		Frequency	Valid Percent
	Missing information	1	0,3
	Between 101 and 150	20	5,6
	Between 151 and 200	7	2,0
	Between 50 and 100	62	17,5
	Less than 50	236	66,5
	More than 200	29	8,2
	Total	355	100,0

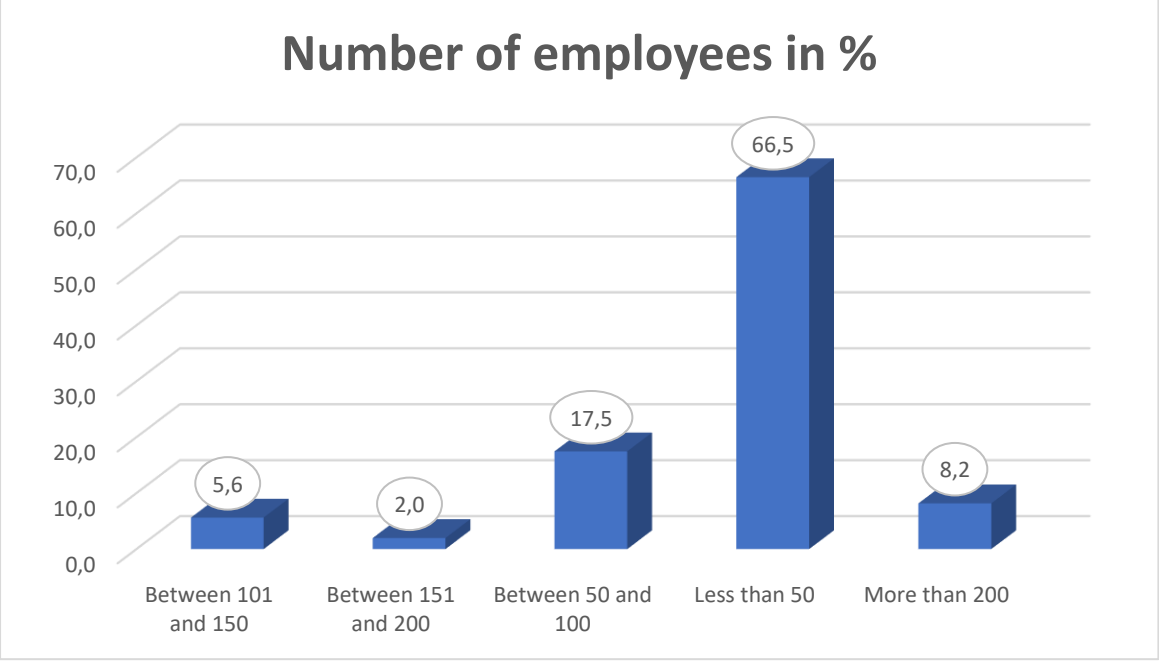


Figure 12: Number of employees in percentages

10.4% of the studied organisations focus on telecommunications, Technology, Internet and Electronics industry. This was the highest frequency observed in Table 13.

Table 13: Analysis by industry

Which of the following best describes the principal industry of your organization?			
		Frequency	Valid Percent
	Accommodation	1	0,3
	Advertising & Marketing	13	3,7
	Agriculture	25	7,0
	Airlines & Aerospace (including Defence)	3	0,8
	Audio Visual & Decor Hire	1	0,3
	Automotive	8	2,3
	Business Support & Logistics	14	3,9
	Chemical Engineering Contracting	1	0,3
	Community Development	1	0,3
	Construction, Machinery, and Homes	21	5,9
	Custom software development	1	0,3
	Education	18	5,1
	Entertainment & Leisure	16	4,5
	Environmental management consulting	1	0,3
	Finance & Financial Services	22	6,2
	Food & Beverages	12	3,4
	Government	3	0,8
	Healthcare & Pharmaceuticals	13	3,7
	Hospitality	1	0,3
	Information technology	1	0,3
	Insurance	6	1,7
	Investments and Manufacturing	1	0,3
	Laboratory services	1	0,3
	Language Services and Investments	1	0,3
	Law firm offering a wide scope of legal services	1	0,3
	Legal	2	0,6
	Manpower Supply	1	0,3

	Manufacturing	30	8,5
	Market Research	1	0,3
	Micro, Small and Medium enterprises business Mentoring, Incubation facilities	1	0,3
	Mining	3	0,8
	Mining and metallurgical plant deign	1	0,3
	Non-profit	6	1,7
	Petroleum & chemicals	1	0,3
	Professional And Scientific Services	1	0,3
	Professional Services	1	0,3
	R&D	1	0,3
	Recruitment, Hire Labour	1	0,3
	Real Estate	4	1,1
	Research and marketing	1	0,3
	Research Consultancy	1	0,3
	Retail & Consumer Durables	13	3,7
	Solar Batteries and Solar products	1	0,3
	Telecommunications, Technology, Internet & Electronics	37	10,4
	Tourism	1	0,3
	Transportation & Delivery	11	3,1
	Travel agency	1	0,3
	Travel and Tourism	1	0,3
	Utilities, Energy, and Extraction	24	6,8
	Total	331	100,0

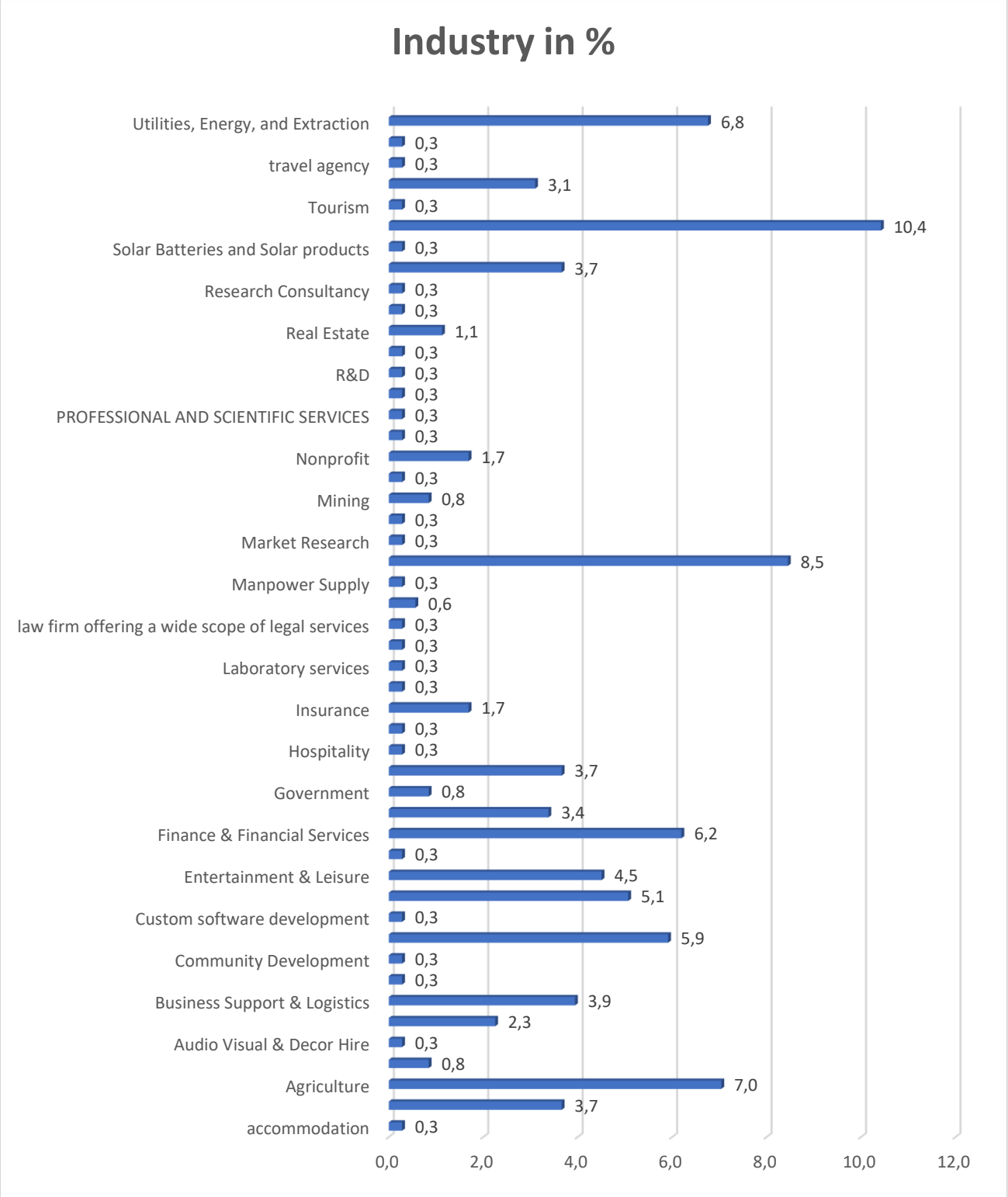


Figure 13: Industry by percentage

According to the results in Table 14, 75.5% of respondents own their organisation.

Table 14: Analysis by designation

As a respondent, are you the owner or an employee of the organisation?			
		Frequency	Valid Percent
	Employee not in management	5	1,4
	Manager of the organisation	76	21,4
	Owner of the organisation	268	75,5
	Total	349	100,0

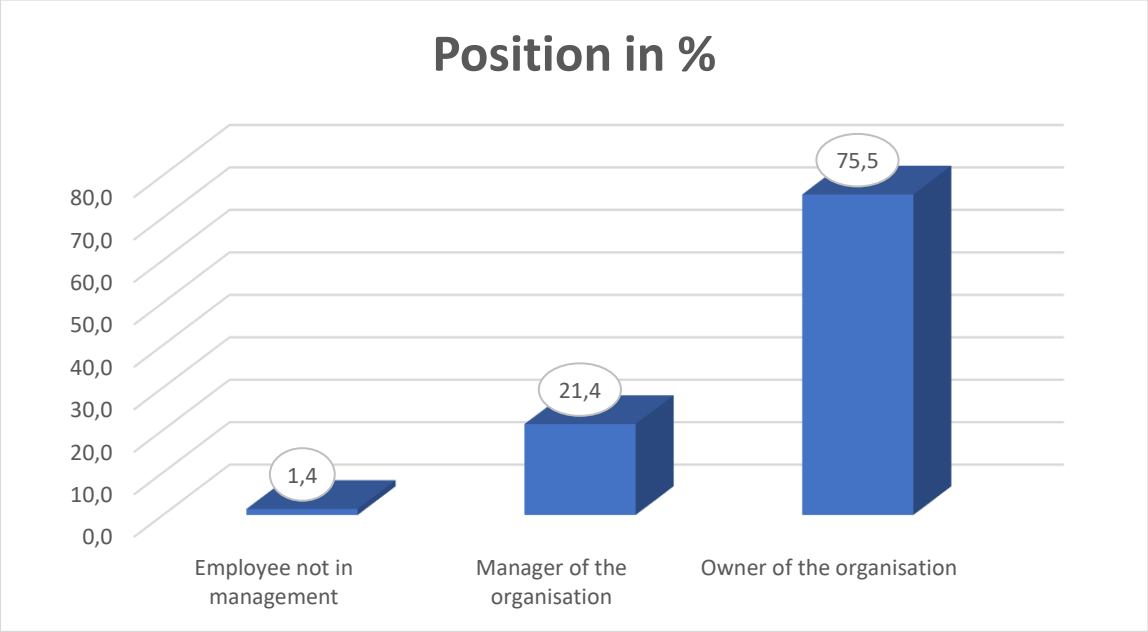


Figure 14: Position within company

Most of the respondents who participated in the study are male (74,1%).

Table 15: Analysis by gender

What is your gender?			
		Frequency	Valid Percent
	Female	91	25,6
	Male	263	74,1
	Total	354	100,0

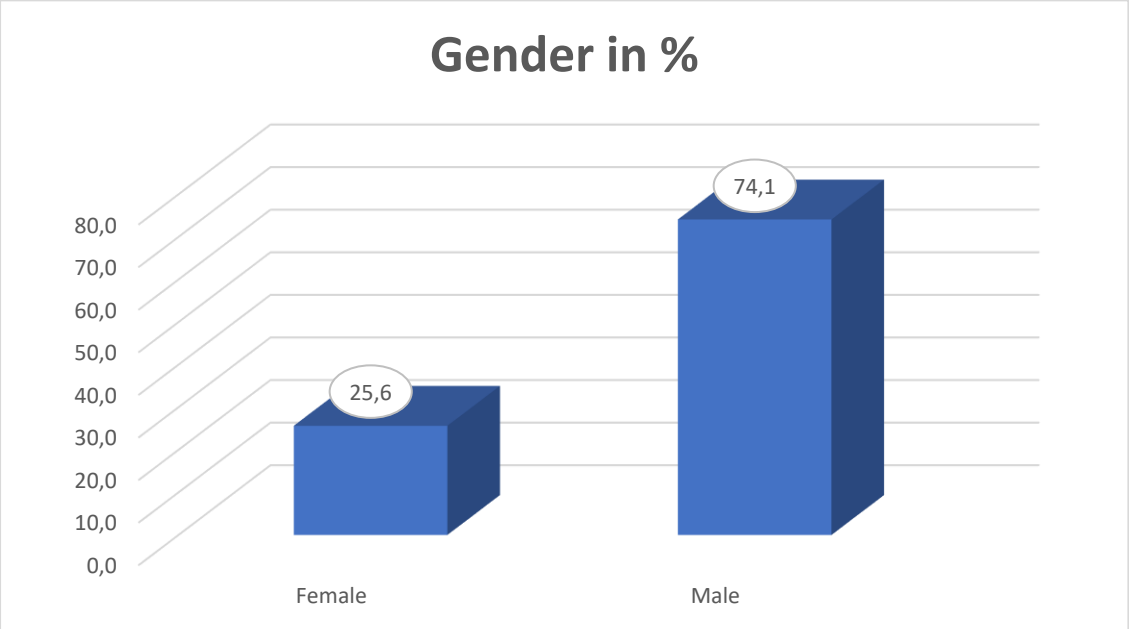


Figure 15: Gender representation

According to Table 16, 44,5% of the respondents hold postgraduate degrees.

Table 16: Level of education

What is the highest level of school you have completed or the highest degree you have received?			
		Frequency	Valid Percent
	Bachelor's degree	1	0,3
	Graduate degree	1	0,3
	High school	78	22,0
	No formal schooling	4	1,1
	Post graduate degree	158	44,5
	Primary school	1	0,3
	Undergraduate degree	112	31,5
	Total	355	100,0

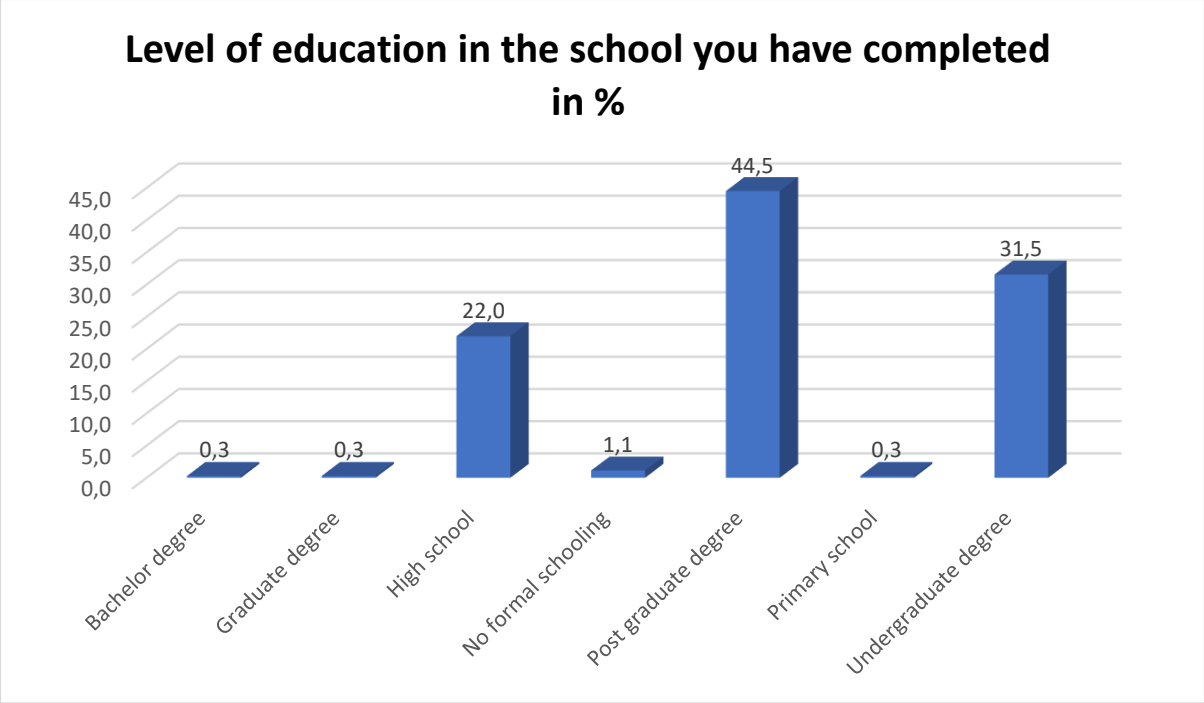


Figure 16: Level of education

The highest racial group that participated to the study is white (49,3).

Table 17: Analysis by race

Which race/ethnicity best describes you? (Please choose only one.)			
		Frequency	Valid Percent
	Black	138	38,9
	Coloured	12	3,4
	Indian	22	6,2
	Multiple ethnicity	6	1,7
	White	175	49,3
	Total	353	100,0

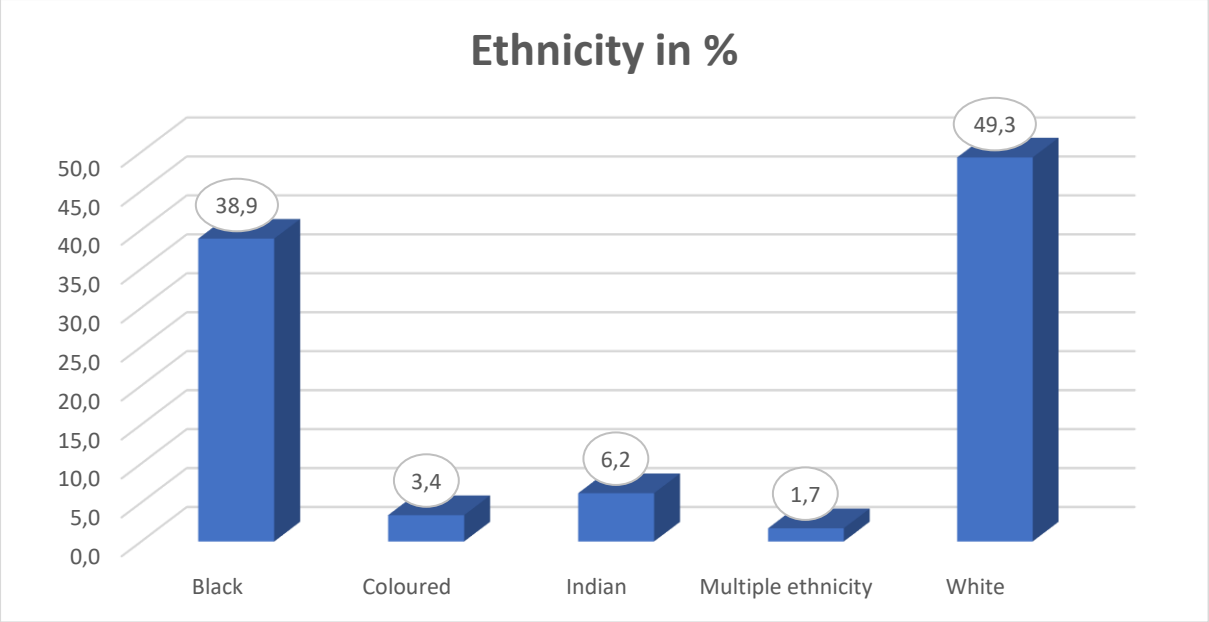


Figure 17: Ethnicity

According to the results, 47,3% of respondents hold individual ownership, followed by other juristic body (41,4%) holders.

Table 18: Type of ownership

Please indicate the type of ownership of your organization			
		Frequency	Valid Percent
	Family owned	39	11,0
	Individual(s)	168	47,3
	Other juristic body (eg. Company, CC, Trust, etc.)	147	41,4
	Total	354	100,0

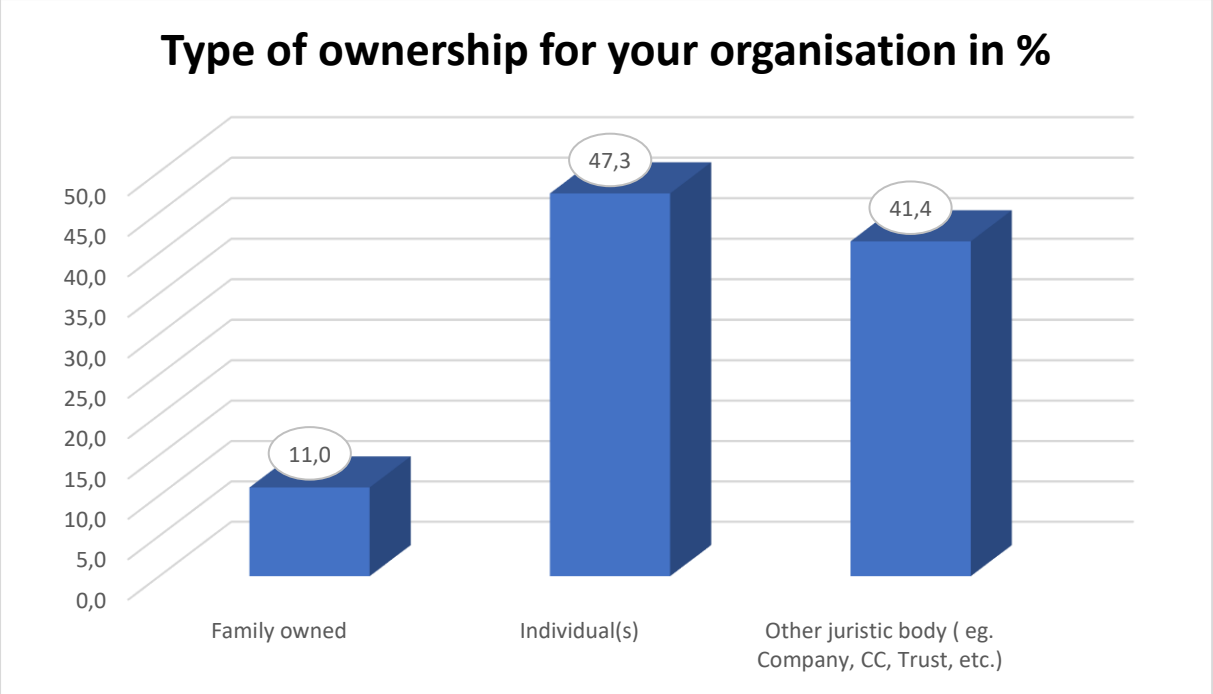


Figure 18: Type of ownership

5.5 Central tendency measure of constructs

All the constructs investigated in this study were measured on a seven-point Likert scale where the value of 1 corresponds to "Strongly disagree" and the value of 7 corresponds to "Strongly Agree''. The mid-point of the seven-point Likert scale is 3.5 as it represents the middle distance of the scale. Meaning that all the mean values below 3.5 suggest that most respondents tend to disagree with the statements. The values between 3.5 and 4.4 indicate that respondents tend to be neutral. All the mean above or equal 4.5 suggests that most respondents tend to either agree, slightly agree (5) or agree (6), and strongly agree (7).

5.6 Successful coopetition

According to the descriptive results presented in Table 19, the majority of respondents tend to agree with the statements used to measure Trust as the mean score (M=4,99) is above 4.4. The same applies to Mutual benefits (M=5,31), and commitment (M=5,44). The overall mean of successful coopetition including all the sub-constructs was computed, and the results indicate that the majority of respondents tend to agree with the statements of Successful coopetition (M=5,25).

Table 19: Mean and standard deviation: Successful coopetition

	Mean	Std. Deviation
Successful coopetition	**5,25**	**1,16**
Trust		
Overall results	**4,99**	**1,41**
We can trust in other firms in the industry to form alliances (TR1).	5,11	1,58
In my opinion, there is a high level of harmony in the working relationship between businesses in this industry (TR2).	4,79	1,62
I trust that the competitors with whom I form alliances in this industry will be good for my business (TR3).	5,08	1,62
Mutual Benefits		
Overall results	**5,31**	**1,26**
Even though the partner is my competitor, I would not hesitate to get into an alliance if my competitive position would be enhanced (MB1).	5,32	1,63
Even though the partner is my competitor, we are open to sharing resources and information (MB2).	4,95	1,71
To establish a relationship with my competitor, both companies must have mutual goals and objectives (MB3).	5,65	1,46
Commitment		
Overall results	**5,44**	**1,20**
It is important for my firm to participate in an alliance or to partner with competitor firms or organizations in the same industry (CM1).	5,02	1,63
For the success of a relationship I establish with my competitor, I must be completely committed (CM2).	5,73	1,29
I intend to maintain cooperative relationships with other firms in the industry (CM3).	5,56	1,41

5.6.1 Foresight

The results show that the majority of the respondents tend to agree with the statements used to measure Foresight because the overall mean value(M=5,71) is above 4.4.

Table 20: Mean and standard deviation: Foresight

	Mean	Std. Deviation
Overall results	**5,71**	**1,00**
When making business decisions, I systematically scan all environmental areas (FT1).	5,76	1,10
I systematically scan all, the short, medium and long-term (FT2).	5,79	1,07
I often consider multiple futures and have systematic ways for defining strategy in environments with different levels of uncertainty (FT3).	5,59	1,16

5.6.2 Risk Aversion

The results indicate that most of the respondents tend to agree with the statements of Risk aversion because of the mean point (M=4,60) is above 4.4. However, some respondents tend to be neutral regarding the statement of "I generally take high risks (RA3)" because of the mean value(M=4,36) falls between 3.5 and 4.4.

Table 21: Mean and Standard deviation: Risk aversion

	Mean	Std. Deviation
Overall results	**4,60**	**1,09**
My activities for exploring new markets are limited to low-risk probing (RA1).	4,86	1,59
I usually invest in low risk projects (RA2).	4,59	1,72
I generally take high risks (RA3).	4,36	1,79

5.7 Firm performance

Respondents tend to slightly agree or agree with the statements on Innovation performance (M=4,75), Strategic performance (M=4,64), Job performance (M=4,59), and Financial performance (M=4,83) because all these respective means are above the cut-off 4.4. The overall mean results (M=4,70) show that majority of the respondents tend to agree with the statements of Firm performance.

Table 22: Mean and Standard deviation: Firm performance

	Mean	**Std. Deviation**
Firm performance	**4,70**	**1,38**
Innovation performance		
Overall results	**4,75**	**1,57**
Collaborating with my competitors has led to improvement in our current technology (IP1).	4,71	1,68
Collaborating with my competitors has led to an increase in performance due to improvements in technology (IP2).	4,72	1,63
Collaborating with my competitors has led to an increase in customer value due to improvements in technology (IP3)	4,81	1,64
Strategic performance		
Overall results	**4,64**	**1,46**
An alliance with my competitor has resulted in an increase in the number of new products/services launched (SP1).	4,73	1,70
An alliance with my competitor has resulted in an increase in the number of new customers (SP2).	4,85	1,60
An alliance with my competitor has resulted in a decrease in the number of customer complaints (SP3).	4,30	1,67
Being in a cooperative relationship with my competitor has resulted in an increase in general customer satisfaction (SP4).	4,70	1,58
Job performance		
Overall results	**4,59**	**1,43**
The number of company employees has increased since collaborating with my competitors (JP1).	4,25	1,77
Collaborating with my competitors has required additional skills in the company (JP2).	4,72	1,66
We can easily find the additional skills from the external community as required in the partnership with competitors (JP3).	4,79	1,64

Financial performance		
Overall results	**4,83**	**1,57**
An alliance with my competitor has resulted in an increase in the company's profits (FP1).	4,87	1,63
An alliance with my competitor has resulted in an increase in the company's revenue (FP2).	4,86	1,65
An alliance with my competitor has resulted in an increase in the number of products sold (FP3).	4,76	1,64

5.8 Normality Assessment

As recommended by Kline (2015), the indicators' skewness and kurtosis values should be below ±3 and ±10, respectively. Table 23 shows that the assumption of univariate normality was met. To detect the multivariate outliers, the Mahalanobis distance was inspected. As a result of this examination of outliers, no extreme multivariate outliers were identified as threats to the SEM results.

Table 23: Skewness and Kurtosis

	Skewness	Kurtosis
Successful Coopetition		
TR1	-1,33	0,84
TR2	-0,98	-0,29
TR3	-1,27	0,44
MB1	-1,52	1,26
MB2	-1,18	0,13
MB3	-2,01	3,53
CM1	-1,08	0,09
CM2	-2,20	5,13
CM3	-1,88	3,14
Firm Performance		
FP1	-0,96	-0,01
FP2	-0,95	-0,08
FP3	-0,78	-0,31
IP1	-0,88	-0,34
IP2	-0,89	-0,24
IP3	-0,95	-0,10

SP1	-0,83	-0,48
SP2	-0,89	-0,11
SP3	-0,38	-0,94
SP4	-0,74	-0,41
JP1	-0,29	-1,26
JP2	-0,78	-0,55
JP3	-0,86	-0,36
Determinants of successful entrepreneurship		
FT1	-2,02	5,00
FT2	-2,22	6,17
FT3	-1,84	3,90
EO1	-1,32	1,04
EO2	-0,63	-1,05
EO3	-1,26	1,15
RA1	-0,96	-0,37
RA2	-0,59	-0,99
RA3	-0,40	-1,17

Given the univariate normality of the data (Field, 2013:172), we can confidently use the maximum likelihood method to assess the model fit of the research conceptual model. A summary of the model fit indices of both the initial and final measurement models are presented in Table 24.

5.9 Confirmatory Factor Analysis (CFA)

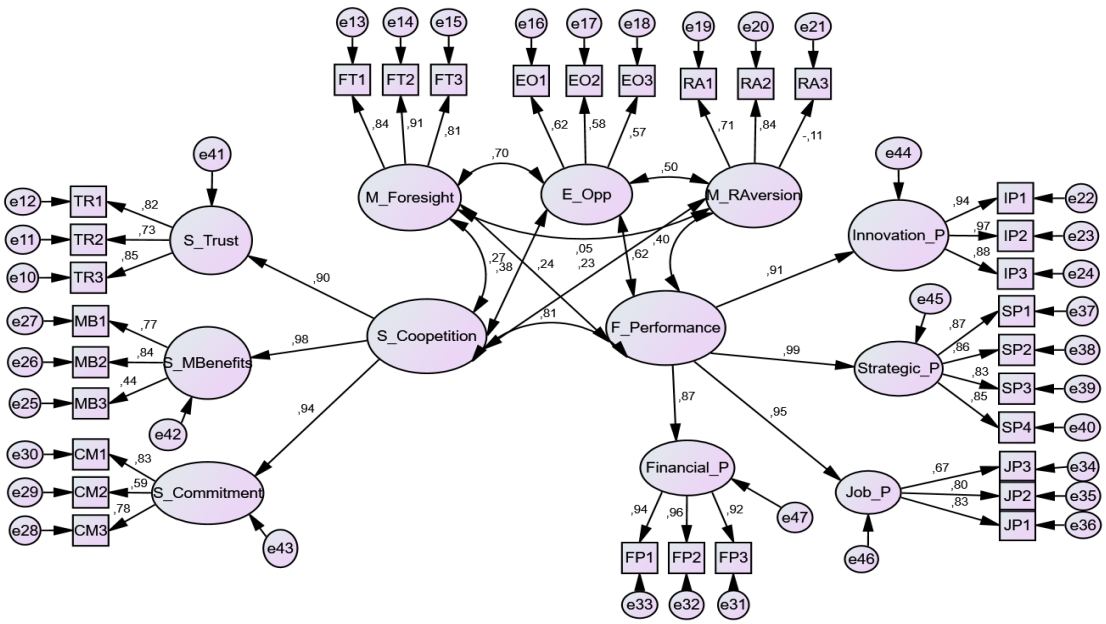


Figure 19: Initial measurement model (unimproved)

The initial model presented in Figure 19 is the measurement model before refinement; its Chi-square is equal to 1364,748, its p value= 0.000 (significant), and its degree of freedom (df)= 417. Although this initial model (Figure 10) suggests a significant Chi-square, there is a need to further examine model fit indices as the Chi-square is often sensitive to the sample size. (Hair et al., 2014).

It should be noted that direct effects are relationships among measured and latent variables, much like those found in ANOVA and multiple regressions and are indicated diagrammatically using single directional arrows (e.g., S_Coopetition and S_Trust). It is important to note that although arrows imply directionality in SEM figures, researchers should not interpret relationships among latent variables as causal unless they analyze longitudinal or experimental data. The coefficients generated to describe the strength of these relationships are interpreted in much the same way as regression weights.

5.9.1 Results of goodness of fit indices and validity of the measurement model

The second column of Table 24 presents the thresholds of the model fit indices commonly reported in SEM studies. These model fit indices are simply different ways (formula) of

calculating the model fit. The results of the goodness of fit indices of both the initial and the refined measurement model are found below. According to the results, the fit indices of the initial model were improved to meet the required thresholds. For instance, CFI had a poor fit in the initial model (.893), after refinement it became .901. Same for AGFI which was .765, after refinement became .803. Considering these satisfactory results, we can proceed and interpret the refined measurement model (Figure 20).

Table 24: Fit indicators

Fit Indicator	Threshold adapted from Hair et al. (2014: 579-580)	Initial measurement model	Final measurement model
CMIN/DF (Chi-square/degree of freedom)	Less than 3 (good) Between [3-5] (acceptable) Above 5 (bad)	3.273	3.119
RMSEA (Root Mean Square Error of Approximation)	Less than .05 (good) Between [.06-.1] (acceptable) Above .1 (bad)	.080	.077
NFI (Normed Fit Index)	Less than .80 (bad) Between [.80-.90] (acceptable) Above .90 (good)	.853	.901
CFI (Comparative Fit Index)	Less than .90 (bad) Above .90 (good)	.893	.930
TLI (Tucker Lewis Index)	Less than .80 (bad) Between [.80-.90] (acceptable) Above .90 (good)	.880	.920
GFI (Goodness-Of-Fit-Index)	Less than .80 (bad) Between [.80-.90] (acceptable) Above .90 (good)	.802	.842
AGFI (Adjusted Goodness-Of-Fit-Index)	Less than .80 (bad) Above .80 (good)	.765	.803

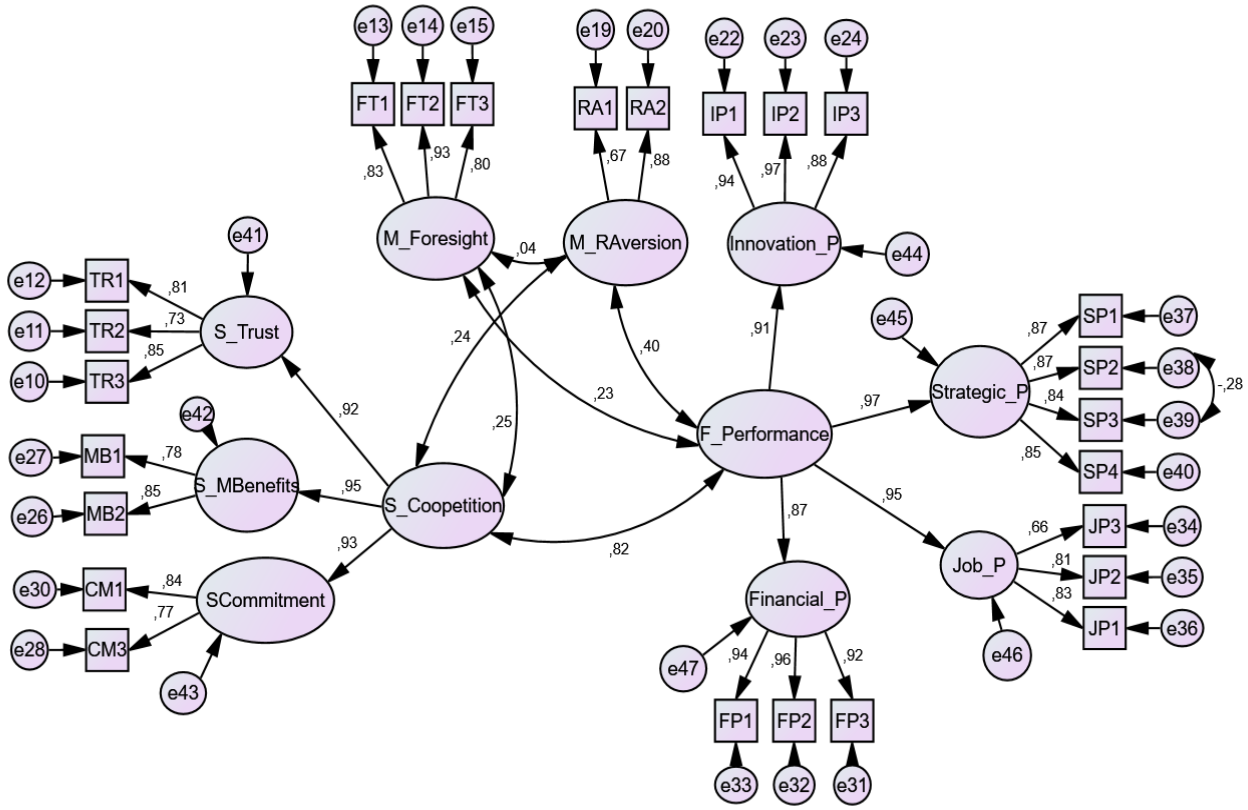


Figure 20: SEM model

The final measurement model illustrated in Figure 20 is considered as the **graphical evidence** of convergent and discriminant validity because all the factor loadings are above .5 and there is the moderate level of correlations (less than .8) between the constructs. Although this graphical evidence suggests a convergent and discriminant validity, further robust statistics are needed to establish the validity of all the constructs used in this study. Validity evidence is presented in the next section.

Cronbach's alpha is used to measure the internal consistency of various constructs. Composite reliability (CR) coefficient is also provided to make the reliability analysis more robust. The cut-off value of both the Cronbach's alpha and composite reliability coefficient is 0.7 although 0.6 is sometimes permissible (Field, 2013). As recommended by Hair et al. (2014), convergent validity can also be assessed by using Average Variance Extracted (AVE) which is expected to be above 0.5.

Table 25: Statistical evidence of reliability and convergent validity

Constructs	Sub-constructs	Items	Factor loadings	Composite reliability (CR)	Cronbach's alpha	Average variance extracted (AVE)	Total number of items retained.
Successful coopetition	Trust	TR3	0,853	0,953	0,906	0,871	7
		TR2	0,731				
		TR1	0,814				
	Mutual benefits	MB1	0,781				
		MB2	0,855				
	Commitment	CM1	0,837				
		CM3	0,770				
Foresight		FT1	0,832	0,889	0,886	0,728	3
		FT2	0,925				
		FT3	0,798				
Risk Aversion		RA1	0,668	0,756	0,741	0,612	2
		RA2	0,882				
Firm performance	Innovation performance	IP1	0,944	0,960	0,965	0,858	13
		IP2	0,969				
		IP3	0,878				
	Strategic performance	SP1	0,867				
		SP2	0,871				
		SP3	0,843				
		SP4	0,853				
	Job performance	JP3	0,665				
		JP2	0,805				
		JP1	0,832				
	Financial performance	FP3	0,919				
		FP2	0,961				
		FP1	0,939				

The overall result indicates a good reliability of all the scale used in this study as Cronbach alphas and composite reliability coefficients are both above 0.7 (Malhotra et al., 2017). Table 25 above shows that the factor loadings of all the items are above the recommended threshold

of 0.7 (Malhotra, 2017). The AVEs of all constructs are also above the required cut-off of 0.5 (Malhotra et al., 2017).

All the results above statistically support the reliability and the convergent validity of the items retained in the final measurement model. This means that all the items retained in the final measurement model are good measures of their respective constructs. The statistical evidence of discriminant validity is presented and discussed through the matrix of correlations and AVE square root coefficients (Table 26).

5.10 **Discriminant Validity of the Measurement model**

Table 26: Correlation matrix to assess the discriminant validity

	Risk Aversion	**Foresight**	**Firm Performance**	**Successful Coopetition**
Risk Aversion	**0,782**			
Foresight	0,035	**0,853**		
Firm Performance	0,400	0,232	**0,927**	
Successful Coopetition	0,243	0,246	0,822	**0,933**

The discriminant validity is assessed through a comparison between the square root of the AVE estimates and the inter-construct correlation coefficient of each construct (Malhotra et al., 2017). The square root of the AVE is expected to be above the inter-construct correlation coefficient. For example, 0.782 (square root of Risk Aversion) is greater than 0.4 which is the correlation coefficient between Risk Aversion and Firm performance. Table 26 shows that there is no discriminant validity concern because all the square root of the AVEs are above the inter-construct correlation coefficients.

The relationships illustrated in the final measurement model (Figure 12) fit the data satisfactorily. All the instruments used in the final measurement model are reliable. Convergent and discriminant validity were supported in the context of this study. Given that the overall results of the confirmatory factor analysis (CFA) is satisfactory, we can confidently move to the structural model.

5.11 **Structural model analysis**

The structural model was tested using the maximum likelihood performed with AMOS 25. A graphical representation of the structural model is shown in Figure 21.

The initial model presented in Figure 20 is the measurement model before refinement; its Chi-square is equal to 1364,748, its p value= 0.000 (significant), and its degree of freedom (df)= 417. Although this initial model (Figure 11) suggests a significant Chi-square, there is a need to further examine model fit indices as the Chi-square is often sensitive to the sample size. (Hair et al., 2014).

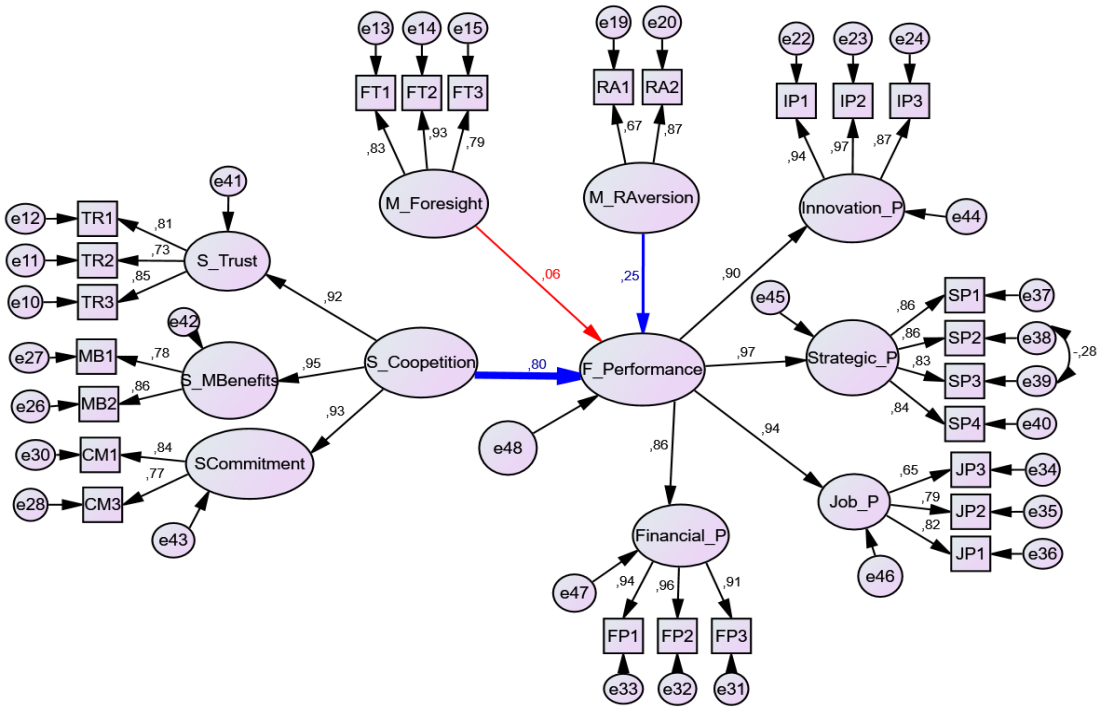


Figure 21: Refined structural model

Before testing the relationships stated in the hypotheses, the fit of the model was assessed. Results indicate satisfactory fit indices of the structural model Chi-square =846.597; p value= .000; df= 264) because CMIN/DF= 3.207; AGFI=.802; TLI =. 916; CFI =. 926; RMSEA =. 079). We can conclude that the structural model fits the data satisfactorily. Therefore, the structural model **(figure 21**) can be used with confidence to test the research hypotheses of the study.

The values in blue indicate the relationships that are statistically significant (either at 95% or 99% Confidence Interval).

The structural model shows that the model explains up to 70% of the variance of Firm performance.

5.12 **Standardised regression path significance**

Table 27: Standardized Regression Weights and hypothesis conclusion

Dependent		Independent	β values	P-value	Conclusion on hypotheses
Firm Performance	<--	Successful Coopetition	0.796	***	**Successful coopetition** has a positive and significant effect on **Firm performance** as its P value (0.000) is lower than .05. Meaning when **Successful coopetition** increases by 1 standard deviation, there are 99% chances that **Firm performance** also goes up by 79.6% of its own standard deviation. Therefore, H1 is supported.

5.13 **Moderation analysis**

Moderation analysis was conducted using the Process tool developed by Hayes (2017) to test the moderating effects of foresight and risk aversion on the relationship between Successful coopetition and Firm performance. 1000 bootstrap samples were used at 95% confidence intervals (Hayes & Rockwood 2017). The p values of the interaction effects were examined to determine whether there is a moderation effect. Any p-value below 0.05 suggests that there is a moderation effect while any p-value above 0.05 indicates that there is NO moderation. Results of the moderation analysis are presented in Table 28.

Table 28: Moderation Analysis

Independent variable		Dependent variable	Moderators /Interaction effects	Moderation effects.	p-value of the moderating effects	Conclusion
Successful coopetition	-->	Firm performance	Risk Aversion	.0576	.0691	Risk aversion does not moderate the relationship between Successful coopetition and Firm performance as its p-value (.0691) is higher than 0.05. Therefore, H4 is not supported.
			Foresight	. 0053	.86	Foresight does not moderate the relationship between Successful coopetition and Firm performance as its p-value (.86) is higher than 0.05. Therefore, H2 is not supported.

5.14 **Additional Analysis**

Though these additional hypotheses (H5 and H6) are not included in the research, they can, however, provide further insight into the study.

H5: Foresight has a positive effect on Firm performance.

H6: Risk aversion has a positive effect of Firm performance.

Table 29: Additional analysis

Dependent		Independent	β values	P-value	Conclusion on hypotheses
	<--	Foresight	0.062	0.098	**Foresight** does not have a significant effect on **Firm performance** as its P value (.098) is higher than .05. This means improving **Foresight** will not translate into an improvement of **Firm performance. Therefore hypothesis 5 is not supported.**
	<--	Risk Aversion	0.246	***	**Risk Aversion** has a positive and significant effect on **Firm performance** as its P value (0.000) is lower than .05. Meaning when **Risk Aversion** goes up by 1 standard deviation, there are 99% chances that **Firm performance** also goes up by 24.6% of its own standard deviation. Therefore, hypothesis 6 is supported.

5.15 **Conclusion**

In conclusion, the above results indicate that there are no existing moderating effects in the proposed conceptual model. Consequently, hypotheses 3 and 4 were not supported. Therefore, the strength of the relationship between Successful coopetition and Firm performance does not depend on the level of Foresight and Risk aversion.

Chapter 6: Discussion of results

6.1 Introduction

Entrepreneurship remains a viable solution to the perpetual problems ailing the SADC. SMEs in the region continue to fail due to exogenous elements inherent in the African economies. This study aimed to investigate one of the possible solutions that can help SMEs in the SADC to grow with sustainability in order to contribute to economic growth, alleviation of poverty and job creation. When SMEs do well, the economy does well.

This chapter summarizes the entire body of work. It begins with a refresher of the discussed theories and the development of the problem statement in the preceding chapters. The results of the study are discussed in relation to the hypothesis and whether indeed, successful coopetition moderated by foresight, risk aversion and ability to exploit opportunities has a positive and significant effect on firm performance. While the moderated relationship between coopetition and firm performance took centre stage, the research goes further to investigate the effect of the moderating variables directly on firm performance.

6.2 SMEs and Coopetition

In the previous chapters, the problems faced by SMEs were outlined; these include the high mortality rates of SMEs. Unfortunately, these firms are faced with insurmountable challenges such as access to finance, limited resources, ailing infrastructure, and extreme competition from larger rival firms. Coopetition was introduced as a solution for SMEs to gain competitive advantage through shared resources (resource-based view) to achieve economies of scale, innovation performance, financial performance, and strategic performance. Coopetition also enhances the technical skills of each firm, allows for access to markets and lessens the intensity of competition within the network of firms (network theory).

It was established that the main elements of a good coopetitive relationship are trust, mutual benefit, and commitment. These were linked to several entrepreneurship theories which unpacked the determinants of successful entrepreneurship, that is foresight, ability to exploit opportunities and risk aversion.

Table 30: Impact of determinant on coopetition

Determinant	Authors of relevant theory	Impact on coopetition
Foresight	Cantillon, Knight	Commitment, trust
Exploiting opportunities	Kirzner, Schumpeter	Benefit
Risk aversion	Say, Marshall	Benefit

The study was then structured to use the above determinants to investigate their moderating effect on the relationship between coopetition and firm performance. The initial steps taken were to investigate the elements of coopetition and whether, indeed, SMEs in the SADC have coopetitive relations with other firms.

A total of 355 responses were received from the 9045 surveys sent out. The percentage spread of respondents is reflective of the respective countries' GPD contribution within the SADC with South Africa having the highest number of SMEs and the biggest economy. It is also noted the survey responses are generally low in other countries. A period of six months was given to the respondents to fill out the survey. Infrastructural challenges, such as internet access, may have been the reason for the difference in responses from country to country. Another contribution to the low response rate is that surveys and databases are generally expensive in Africa and response rates very low.

Table 31: Responses by percentage

Answer Choices	Responses		Total population	
Angola	15,73%	56	40	0,4%
Botswana	1,97%	7	77	0,9%
Democratic Republic of Congo	5,62%	20	27	0,3%
Lesotho	0,84%	3	11	0,1%
Madagascar	0,28%	1	23	0,3%
Malawi	1,69%	6	40	0,4%
Mauritius	3,65%	13	113	1,2%
Mozambique	1,12%	4	55	0,6%
Namibia	1,69%	6	138	1,5%
Seychelles	1,12%	4	16	0,2%
South Africa	55,06%	195	8071	89,2%
Swaziland	0,84%	3	2	0,0%
United Republic of Tanzania	5,06%	18	196	2,2%
Zambia	2,25%	8	96	1,1%
Zimbabwe	2,53%	9	140	1,5%
Other (please specify)	0,56%	2		
	Answered	**355**	**9045**	**100,0%**
	Skipped	**0**		

Appendix 1 detailing the preliminary analysis of the subconstructs, confirms that trust, mutual benefit, and commitment are the significant drivers of coopetitive relationships amongst the SMEs. The extracted table below (Table 31) indicates the presence of a strong internal consistency in the scale. That is the measure used is reliable.

Table 32: Reliance

Constructs	Sub-constructs	Items	Factor loadings	Composite reliability (CR)	Cronbach's alpha	Average variance extracted (AVE)	Total number of items retained.
Successful coopetition	Trust	TR3	0,853	0,953	0,906	0,871	7
		TR2	0,731				
		TR1	0,814				
	Mutual benefits	MB1	0,781				
		MB2	0,855				
	Commitment	CM1	0,837				
		CM3	0,77				

From the below analysis, it can be observed that trust, mutual benefit and commitment have a strong correlation with coopetition and that confirms that the variables are strongly regarded by the respondents as the subconstructs of coopetition within their existing relationship.

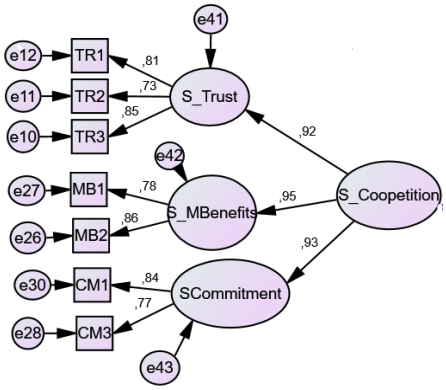


Figure 22: Model

6.2.1 Trust, Commitment and Mutual benefit

Trust can be very difficult in coopetitive relationships, especially in SMEs where competition is more extreme, mainly because of the contest to acquire resources, breaking into new markets and onboarding new clients. In developing economies, such as the SADC, the extremity of competition may be mainly driven by the fact that entrepreneurship is relatively still in its

infancy, especially for black people. There were 49.3% white entrepreneur responses in a region with mainly black people and only 39.9% black respondents. It may be worthwhile to investigate whether trust exist in cross-race coopetitive engagements, give the colonial history of the region. The results show that in general, the entrepreneurs trust each other within the coopetitive network and theory holds true in different backgrounds and regions.

Companies also show a great deal of commitment; this may be driven by the desire for future payoffs and offsetting the effects of the common struggles of the SMEs. Because coopetition may yield desirable returns for the joint parties, it is most likely that the firms will be committed to the relationship, moreover, in the presence of high values of trust, commitment is easier when there is mutual benefit.

It can therefore be confirmed that SMEs in the SADC do engage in coopetitive relationships with their rivals. The next step is to investigate whether these relationships have had a positive effect on the performance of their respective companies.

6.3 Coopetition and Firm performance

Ultimately, the relevance of the study anchors on whether coopetition improves firm performance. This is mainly to drive strategy formulation among SMEs while they strive to compete in a complex market. Chapter 1 stated in detail the challenges faced by most SMEs in the SADC and the research proved helpful by confirming the impact of coopetition on firm performance.

Table 33: Coopetition and firm performance

Dependent		Independent	β values	P-value	Conclusion on hypotheses
Firm Performance	<--	Successful Coopetition	0.796	***	**Successful coopetition** has a positive and significant effect on **Firm performance** as its P value (0.000) is lower than .05. Meaning when **Successful coopetition** increases by 1 standard deviation, there are 99% chances that **Firm performance** also goes up by 79.6% of its own standard deviation. Therefore, H1 is supported.

The coefficient values of double-headed arrows indicate the bivariate correlation coefficients between two (2) latent variables. For example, the correlation coefficient between Successful coopetition and Firm performance is .82, meaning when one of these two variables increases

by 1 standard deviation, the other variable also increases of .82% of its own standard deviation. All these correlations are statistically significant at 99% confidence interval.

H1: Successful coopetition has a positive effect on firm performance.

From the above table of results the hypothesis is supported. This means that coopetition remains a viable strategy for SMEs to adopt. It will help companies with their innovation efforts, the results in figure 12 indicate a high β value of 0.9 indicating strong regression. Through this strategy, firms will have a better chance to access new markets, launch new products, improve production efficiency and access to new technologies.

Secondly, firms' strategic performance improves. Strategic performance comprises elements such as customer satisfaction, new product development and employee satisfaction. The respondents strongly agreed that coopetition has helped with the strategic performance of their firms.

The majority of the respondents also confirm that coopetition has resulted in an increase in turnover due to increase in sales. Part of the increase can be attributed to improvements in the value chain through innovation performance, access to resources that were otherwise not available to individual firms; this includes new customers, technical knowledge and management skills. One of the key achievements is the creation of new jobs. Africa has a huge unemployment problem and for SMEs to be able to create new jobs through their collaborative efforts is a notable achievement.

In the preceding chapters, the importance of coopetition as a business level strategy was discussed and potential benefits outlined. The results from the sample confirm that coopetition is in fact one of the drivers for improved firm performance. Through this strategy, SMEs can have a longer life span and perhaps long enough to make a significant contribution to the economy and address the economic problems in Africa. Without a doubt, SME are pivotal to the economic growth policies of the SADC and when firm performance is increased, access to finance may be easier. Small firms may use coopetitive relationships to improve their balance sheets and build a trading track record which are some of the key items which funders look at when an application for finance is considered.

6.4 Moderated relationship between coopetition and firm performance

Table 34: Moderated relationship between coopetition and firm performance

Dependent		Independent	β values	P-value	Conclusion on hypotheses	Moderators/Interaction effects	Moderation effects.	p-value of the moderating effects	Conclusion
Firm Performance		Successful Coopetition	0.796	***	**Successful coopetition** has a positive and significant effect on **Firm performance** as its P value (0.000) is lower than .05. Meaning when **Successful coopetition** increases by 1 standard deviation, there are 99% chances that **Firm performance** also goes up by 79.6% of its own standard deviation. Therefore, H1 is supported.	Risk Aversion	.0576	.0691	Risk aversion does not moderate the relationship between Successful coopetition and Firm performance as its p-value (.0691) is higher than 0.05. Therefore, H4 is not supported.
						Foresight	. 0053	.860	Foresight does not moderate the relationship between Successful coopetition and Firm performance as its p-value (.86) is higher than 0.05. Therefore, H1 is not supported.
	<	Foresight	0.062	0.098	**Foresight** does not have a significant effect on **Firm performance** as its P value (.098) is higher than .05. This means improving **Foresight** will not translate into an improvement of **Firm performance.**				
	<	Risk Aversion	0.246	***	**Risk Aversion** has a positive and significant effect on **Firm performance** as its P value (0.000) is lower than .05. Meaning when **Risk Aversion** goes up by 1 standard deviation, there are 99% chances that **Firm performance** also goes up by 24.6% of its own standard deviation.				

The initial measurement model had 10 latent variables with 31 observed variables. After refinement, the measurement model remained with nine latent variables and 25 observed variables. Since model fit indices of the initial model were moderately poor (see Table 23), three items were deleted (MB3, CM2, and RA3) because of validity concerns.

The contribution of each item in the construct is indicated by its factor loading; any factor loading above 0.5 is acceptable, while anything below 0.5 indicates a poor measure. For example, the factor loading of the item FT1 is 0.83, meaning, item FT1 measures Foresight at 83% (0.83 X 100). Since there is always a margin of error when measuring abstract concepts,

IBM SPSS AMOS always associates an error term with each item. In the case of Risk aversion for example, e19 is the error term of the item RA1.

H2: Foresight moderates the relationship between successful coopetition and firm performance

Foresight was identified as one of the key attributes for a successful entrepreneur. Knight (2012) postulated that for entrepreneurs to deal with uncertainty within the market, they need to exercise judgement and foresight which is a derivative of experience, prior knowledge and risk calculation - all of which is influenced by certain knowledge about the future. It is, therefore, reasonable to believe that foresight plays a role in coopetitive relationships because firstly, the collaboration is aimed at exploiting a certain opportunity with the aim of receiving some future benefit that is mutual to the parties. The firms that decide to coopete have some prior knowledge that entering in coopetition is beneficial and that the rewards may be achieved more efficiently than if each firm were acting on its own.

Secondly, when firms are in a coopetitive relationship, there should be some level of foresight for the union to be able to deal with the risks and uncertainty of the market to achieve the desired payoff, that is, an improvement in firm performance.

The results from the analysis show that foresight does not moderate the relationship between coopetition and firm performance, thus H1 was not supported. This means that foresight is not considered as important when making decision in a coopetitive setup. Most entrepreneurs, contrary to theory, do not consider or scan the short, medium or long-term environment when formulating a strategy. While this leaves them exposed to systematic risk, firm performance is not diminished.

Some of the reasons that may explain the minimal regard for foresight may include, the unpredictable markets within the SADC, firms may find it hard to predict or plan for the future due to the volatility of the environment. Theory has suggested that the SADC is one of the very difficult regions in which to do business. Aside from the lack of infrastructure, the political climate and corruption make it difficult for SMEs to strategize their future.

Foresight requires systematic scanning of the environment and prior knowledge or experience. Given that the SME environment is still relatively young, most SMEs do not have the experience required as most of them have been in operation for less than 20 years , the average being 17 years. It can be understood why foresight is not a moderator in the SADC when

compared to other developed regions that have been thriving on SMEs for longer periods and the entrepreneurship cultured has been cemented and the future is easier to predict.

The results also show that foresight does not have a significant effect on firm performance, this could be for the same reason why foresight does not moderate the relationship between coopetition and firm performance. Foresight is not as pivotal in this market as the other key drivers of firm performance, such as risk aversion.

Perhaps it would be prudent to test foresight at a later stage when the entrepreneurship has found its anchor within the complex SADC environment.

H3: Ability to exploit opportunities moderates the relationship between successful coopetition and firm performance

The initial model (figure10) that included exploiting opportunities as a moderating variable presented a significant Chi-square, there was a need to examine the model fit indices. Table 24 presented the goodness of fit indices and the improved model to meet the minimum fit indicators. In the improved model (figure 11), the variable exploiting opportunities was excluded for the model to exhibit convergent and discriminant validity with all factor loadings above .5 with a moderate correlation (less than .8) between constructs. This was necessary to achieve the required goodness of fit so the study could proceed with a valid model. Thus, the variable exploiting opportunity did not fit the model and was therefore not tested.

H4: Risk aversion opportunities moderates the relationship between successful coopetition and firm performance

Inherently, the SADC market is very risky with limited resources. SMEs have opted for collaborative strategies to minimize their exposure to the complex uncertainties of the market. By avoiding or minimizing risk, companies can increase their performance. The results from the preceding chapter show that most of the respondents opt for risk avoidance when in a coopetitive relationship. It is understandable since the relationship itself has some level of risk. The parties in the relationship can mitigate the internal risk, through trust and contracts. However, very little can be done to mitigate the external risk. Risk aversion may be the safest option for these SMEs.

Risk aversion has a positive and significant effect when tested directly with firm performance but does not moderate the relationship between coopetition and firm performance. This is

because SMEs are innately risk averse even outside of the coopetitive form which means risk aversion does not moderate the relationship because the SMEs are already risk averse and whatever efforts are made to improve firm performance, risk aversion does not play a moderating role but is a driver of firm performance.

According to literature, the Marshall's entrepreneur assumes risk and derives value from taking risks. For an entrepreneur to succeed, he must take risks. Empirical literature supports Marshall's view. But it would seem from the results, taking risks is not favorable, in fact the contrary seems to yield better results. Previous empirical studies were based on SMEs in developed countries, supposedly the risks are different when compared to developing regions such as the SADC and BRICS. The problems faced by SMEs in the SADC have been discussed extensively and these may influence the risk aversion of the entrepreneur. Risk avoidance, especially when taking risks, is not met with equivalent rewards, and is the preferred strategy.

6.5 Demographics and variables and Coopetition

A further study was conducted to examine other variables that may have a significant effect on coopetition (trust, mutual benefit, and commitment). The purpose of the analysis is to determine if there is a significant difference in the mean scores of successful coopetition, trust, mutual benefit, and commitment across annual turnover, number of employees, racial group, gender, and level of education. Appendix 2 details the outcomes.

The results indicate that only one racial group has a significant effect on successful coopetition, trust, mutual benefit, and commitment. This result is evident through the significant difference observed for all four (04) independent variables. The study further found that Black respondents tend to agree with the statements of successful coopetition, trust, mutual benefit, and commitment more than white respondents. Unlike annual turnover, number of employees, level of education, and gender did not have a significant effect in the research model.

Contra to Hare (2017), who argued that the coopetitive relationship between black businesses is weak due to the absence of trust and the lack of awareness of the potential benefits. The argument may seem obvious at face value, but this research shows that despite the historic circumstances under which black Africans entered and participated in the economic activities of the SADC, there is still trust, commitment and awareness of the benefits of coopetition. This may be as a result of the maturity of black entrepreneurs or the inherent cultural disposition of black people in Africa to trust, as well as the decades of conditioning of the black labour force

to commit. A further inquiry into this theme is necessary to reveal the reasons for the difference in the results between black and white entrepreneurs and why the other races are indifferent.

6.6 Conclusion

In this chapter, the results were discussed, and two pertinent observations were made. Firstly, coopetition has a positive and significant effect on firm performance and secondly, risk aversion and foresight do not moderate the relationship between coopetition and firm performance which is contrary to what was anticipated, based on literature. However, risk aversion has a positive and significant effect on firm performance which is also against the argument of theoretical literature which supports the notion that risk taking positively influences firm performance.

Chapter 7: Conclusion and Recommendations

7.1 Introduction

The aim of this research was to explore coopetition as a strategy for entrepreneurship driven by SMEs in the SADC region. Coopetition has been identified in literature as one of the new strategies that is popular in business. It entails cost cutting measures, efficient use of resources and a transfer of skills. Given the many challenges faced by SMEs in the SADC, coopetition helps these firms overcome some of these impediments. With an estimated 80 percent of SMEs failing within the first three to five years, an intervening method is needed to help SMEs survive. Their importance cannot be overemphasized in driving economic growth and assisting governments to deal with socio-economic factors that continue to hinder the development of the SADC countries.

The research had three objectives, firstly to investigate whether coopetition exists between SMEs in the SADC, secondly, does coopetition positively influence firm performance, and thirdly, what variables moderate the relationship between coopetition and firm performance.

The objectives of the research are important in that, coopetition helps companies achieve efficiencies they otherwise would not on their own, especially with SMEs that have limited access to resource and face extreme competition from larger firms that ultimately lead to their failure. Secondly, coopetition improves firm performance; this means smaller firms can compete and grow against their larger counterparts as a result of improved financial performance, access to new markets, efficient R&D strategies and strengthening of the balance sheet to be able to access funding. If the variables that moderate the relationship between coopetition and firm performance are known, they can be the centre of focus and nurtured so the relationship can be stronger and yield even better results. The main objective is to have an holistic view of all elements that play a role between coopetition and firm performance; this relationship is central to the research and forms the main research objective.

7.2 Results

The study began with outlining the key objectives and the reason thereof. Coopetition as a new business strategy offers immense benefits for SMEs and if executed properly, may lead to favourable firm performance. In the preceding chapters, hypotheses were developed based on both theoretical and empirical literature. Both highlighted the determinants of successful entrepreneurs, spanning risk aversion to self-esteem (Table 2). Three variables were identified

as moderators of the relationship between coopetition and firm performance, i.e. foresight, risk aversion and ability to exploit opportunities.

The results showed that, firstly, coopetitive relationships do exist between SMEs in the SADC, secondly, coopetition positively influences firm performance and thirdly, none of the envisaged variables are moderators of the nexus between coopetition and firm performance; however, risk aversion has a direct positive and significant effect on firm performance. Results from analysis in pursuit of the main objective of the study also showed positive outcomes: that coopetition has a positive and significant effect on firm performance and all the aspects thereof. Coopetition increases financial performance in the form of revenue, decrease in operational costs, and overall profitability. It also has a positive effect on customer satisfaction and the launch of new products and services.

The results also showed that risk aversion and foresight do not moderate the relationship between coopetition and firm performance. These variables were identified through the literature review on the determinants of successful entrepreneurship and became key in determining the moderators of the relationship.

Although the determinants of successful entrepreneurship (foresight and risk aversion) do not moderate the key relationship of interest of this research, we can conclude that coopetition remains an ideal strategy for the survival of SMEs in the SADC region and it should be promoted by government and other policy-makers to help SMEs in their tasks to overcome the economic challenges of the individual SADC countries and Africa, as a whole. The benefits of coopetition have been discussed thoroughly on the backdrop of game theory with non-zero-sum games, network theory and resource-based theory. It is not only the firm that benefits but the larger community as well, through job creation, increase in tax payments, cheaper products which may, in turn, result in deflationary consumption.

Risk aversion was shown to have a direct and significant influence on firm performance, although this was not part of the main objectives. The research showed the relationship to be worth exploring. Contrary to several articles that suggest risk aversion would have a negative impact on firm performance, the opposite seem to prevail in the SADC. Understandably, the risk is different in different environments and these results may be driven by factors such as unstable political climate, hyperinflation, financial risk and the extremely uncertain future of SMEs and business a whole. The less the risk appetite, the better the firm performs.

7.3 Significance of the study

Without a doubt, SMEs are the largest contributors to the economy and their strategic activities have a significant impact on the GDP. It would be favourable for SADC to protect and help SMEs as a key driver for economic change by making it easier for firms to coopete, both locally and across borders. This could be achieved through the relaxation of competition rules to favour collaboration. Another way is to introduce funding initiatives that promote collaboration of SMEs in pursuit of innovation.

The propagation of SMEs is a good thing since the development thereof contributes significantly to job creation, economic welfare enhancement and social stability (Audretsch, 2007). In countries such as Japan, SMEs are responsible for the bulk of the country's business establishment. In the US, SMEs have introduced innovative products and services, created new jobs, and opened new markets. SMEs in Taiwan are responsible for 98 percent of the nation's GDP even though these businesses are limited in access to funds and are relatively very small sized, they make a huge contribution to the employment of the Taiwanese people.

More surprising is the failure rate of SMEs. Some fail in their infancy, others a few years after start-up. For example, it is estimated that 50 percent of all start-ups fail within their first year and 70 to 80 percent fail within the first three to five years (Zulu-Chisanga, Boso & Leonidou, 2016). The failure rate can be attributed to lack of funding, minimal infrastructure, and extremely competitive environments, especially with pressures from bigger businesses. SMEs operate in the same environment as their larger counterparts but without the benefits of relatively easy access to funding, human resources and strategic benefits of economies of scale (Guerrero, Urbano, Fayolle, Klofsten & Mian, 2016).

To survive and mitigate the risk of failure, a number of SMEs have embarked on collaborative strategies to increase their innovative activities and know-how (Narula, 2004). Due to the acceleration of technological changes, many small firms experience difficulty in becoming innovators and are often pushed out of the market and forced to close shop (Schiavone & Simoni, 2011). Collaboration and innovation are regarded widely as important change processes that sustain business development in increasingly competitive markets (Franco, 2003).

Due to their limited financial and human resources, SMEs need to compete and form collaborative agreements with other firms to overcome some of these constraints and improve

the level of innovation and overall entrepreneurial orientation (Mthanti & Ojah, 2017). Some SMEs have been successful in their collaboration relationships and others have failed (Franco, 2003). Those that have been successful enjoy sustainable growth and are able to compete in their respective markets against bigger businesses (Franco, 2003).

The results of the research show that firms that engage in coopetition achieve better results in the form of increased firm performance. They have better access to resources, better access to markets, customer satisfaction, create jobs and have a stronger financial position. This means that coopetition can help SMEs tackle the problems they face and the challenges of the business environment in the SADC. The more SMEs that survive and grow, the better for the economy, unemployment can be reduced, less dependence on foreign investments by government and potential a reduction in the amount of funding lost to failed SMEs over time.

Governments and policy makers should investigate ways of making the collaborative efforts of SMEs easier, including favourable terms for cross-border trade. Cross-country collaborations could be beneficial for SMEs since it provides easier access to new markets, growth of customer base and a larger pool of resources.

This research contributes to the body of knowledge by highlighting the importance of coopetition in the SADC to remedy the current status quo of SMEs. Furthermore, the study explored the practical implications of coopetition on firm performance to further support the importance of the strategy and what it means for the general business environment in the region.

7.4 Conclusion and recommendations

The research comprehensively explored coopetition, its antecedents, and benefits in the context of the SADC and SMEs. 355 responses were received, and a conclusive analysis conducted. The results showed that there is coopetition amongst SMEs, that coopetition influences firm performance and that risk aversion and foresight do not moderate this relationship. The study only focused on SMEs in the SADC and a limited number of respondents participated. Furthermore, only two moderating variables were analyzed. Further analysis was done on the demographics and other variables and it was found that only race plays a role in coopetition, particularly in trust, mutual benefit and commitment. Black entrepreneurs showed a stronger sentiment to coopetition than their white equivalent. Additionally, risk aversion was found to have a significant effect on firm performance.

Although comprehensive, the study was not all-inclusive. Firstly, geographically, it was limited only to the SADC and most of the respondents were from South Africa, this may have skewed the results and made them more reflective of that region than the SADC. It is recommended that a similar study is conducted in different regions, West Africa, East Africa, North and Central Africa to determine whether the results will be the same. Each region has its unique challenges and different cultures of entrepreneurship. The demographics are different, and this may present different results. This could be useful to the African Union and its trade agreements as well as contribute to coopetition theory.

Secondly, the research focused on only two moderators, different moderators should be tested so those that yield positive results can be the centre of focus. There are several determinants of successful entrepreneurship, including, leadership, IQ, experience and so forth. These could be tested as moderators of coopetition and firm performance. This is important to determine the variables that make this relationship succeed to minimize the failure rate of coopetitive engagements.

Thirdly, a larger sample should be obtained to give future studies more depth. This may result in uncovering hidden themes that may be beneficial to the overall theory of coopetition. The behavioural differences in the sample demographics should be investigated further to determine why black entrepreneurs exhibit greater levels of trust and commitment and whether it is with their own race or not and whether this has any bearing on the existence of more white owned companies than there are black owned in a continent of black majority. Perhaps trust and commitment are also the moderators of the coopetitive relationship with firm performance and there is a need to investigate the effect of these variables on both the moderators of the coopetition-firm performance relationship as well as their effect directly on firm performance.

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Appendix 1 Preliminary analysis: Exploratory factor analysis

Introduction

The exploratory factor analysis was performed to test the structure of the three main constructs involved in the study (Successful coopetition, Firm performance, and Determinants of Successful coopetition). Moreover, it also allowed the researcher to empirically assess the validity of the scales used. The purpose of the factor analysis is to reduce the large data into the small data, which will enable the researcher to assess the structure of variables according to theory.

The Kaiser – Meyer – Olkin (KMO- Table 1) measure was calculated to ensure that the sample is adequate for factor analysis. According to Table 1, the suitability of the data is supported because the KMO value (.935) is superior to the threshold of 0.6; and Bartlett's Test of Sphericity is significant (.000) (Pallant, 2010:199).

Table 1: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.935
Bartlett's Test of Sphericity	Approx. Chi-Square	8914.941
	df	465
	Sig.	.000

The principal component with orthogonal rotation (Varimax) was used as the extraction method. This method was selected because it essentially captures the components with high eigenvalues and organises them by order of importance. Table 2 provides details regarding the contribution of each factor to the total variance.

Table 2: Total Variance Explained

Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13,470	43,452	43,452	13,470	43,452	43,452	8,493	27,397	27,397
2	2,970	9,581	53,033	2,970	9,581	53,033	5,203	16,784	44,181
3	2,198	7,090	60,123	2,198	7,090	60,123	3,156	10,180	54,361
4	1,414	4,560	64,683	1,414	4,560	64,683	2,111	6,809	61,170
5	1,198	3,866	68,549	1,198	3,866	68,549	1,849	5,966	67,136
6	1,032	3,330	71,880	1,032	3,330	71,880	1,471	4,744	71,880
Extraction Method: Principal Component Analysis.									

Principal component analysis reveals the presence of six (6) factors with eigenvalues exceeding 1. According to Table 2, the component number 1 has the highest eigenvalue (13.470) which corresponds to 43.452% of the total variance while the last component (number 6) has an eigenvalue of 1.032 which represents 3.330% of the total variance.

Table 3: Rotated Component Matrix: Initial results

Rotated Component Matrix[a]						
	Component					
	1	2	3	4	5	6
TR1		.764				
TR2		.649				.329
TR3	.399	.723				
MB1		.734				
MB2	.344	.728				
MB3					.869	
CM1	.465	.566			.331	

CM2		.301			.778	
CM3	.306	.636				
FP1	.686	.587				
FP2	.682	.599				
FP3	.756	.495				
IP1	.824	.308				
IP2	.829					
IP3	.829					
SP1	.817					
SP2	.803					
SP3	.772					
SP4	.759	.334				
JP1	.714					
JP2	.672					
JP3	.458	.340				
FT1			.865			
FT2			.906			
FT3			.853			
EO1	.337		.454	.314		
EO2	.303		.394			.395
EO3			.409	.433		.430
RA1				.841		
RA2				.814		
RA3						.812
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.						
a. Rotation converged in 7 iterations.						

Table 3.1: Treated results

Rotated Component Matrix[a]						
	Component					
	Firm performance	Successful Coopetition	Foresight/Exploring opportunities	Risk Aversion	5	6
We can trust in other firms in the industry to form alliances. (TR1)		.764				
In my opinion, there is a high level of harmony in the working relationship between businesses in this industry. (TR2)		.649				
I trust that the competitors with whom I form alliances in this industry will be good for my business. (TR3)		.723				
Even though the partner is my competitor, I would not hesitate to get into an alliance if my competitive position would be enhanced. (MB1)		.734				
Even though the partner is my competitor, we are open to sharing resources and information. (MB2)		.728				

To establish a relationship with my competitor, both companies must have mutual goals and objectives. (MB3)						
It is important for my firm to participate in an alliance or to partner with competitor firms or organizations in the same industry. (CM1)		.566				
For the success of a relationship I establish with my competitor, I must be completely committed. (CM2)		.301				
I intend to maintain cooperative relationships with other firms in the industry. (CM3)		.636				
An alliance with my competitor has resulted in an increase in the company's profits. (FP1)	.686					
An alliance with my competitor has resulted in an increase in the company's revenue. (FP2)	.682					
An alliance with my competitor has resulted in an increase in the number of products sold. (FP3)	.756					

collaborating with my competitors has led to improvement in our current technology (IP1)	.824					
Collaborating with my competitors has led to an increase in performance due to improvements in technology (IP2)	.829					
collaborating with my competitors has led to an increase in customer value due to improvements in technology (IP3)	.829					
An alliance with my competitor has resulted in an increase in the number of new products/services launched. (SP1)	.817					
An alliance with my competitor has resulted in an increase in the number of new customers. (SP2)	.803					
An alliance with my competitor has resulted in a decrease in the number of customer complaints. (SP3)	.772					
Being in a cooperative relationship with my competitor has resulted in an increase in general customer satisfaction. (SP4)	.759					

The number of company employees has increased since collaborating with my competitors. (JP1)	.714					
Collaborating with my competitors has required additional skills in the company. (JP2)	.672					
We can easily find the additional skills from the external community as required in the partnership with competitors. (JP3)	.458					
When making business decisions, I systematically scan all environmental areas. (FT1)			.865			
I systematically scan all, the short, medium and long-term (FT2)			.906			
I often consider multiple futures and have systematic ways for defining strategy in environments with different levels of uncertainty. (FT3)			.853			
I rely mostly on experience-based intuition rather than explicit methods to interpret the environment. (EO1)			.454			

I have a dedicated unit that has the mandate to explore and develop new markets that can contribute to revenue. (EO2)			.394			
I am best at exploring our current markets and/or adjacent to our current markets. (EO3)			.409			
My activities for exploring new markets are limited to low-risk probing (RA1)				.841		
I usually invest in low risk projects (RA2)				.814		
I generally take high risks (RA3)						
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.						
a. Rotation converged in 7 iterations.						

Table 3.1 above provides details on the items associated with each component. The number of factors per component were concluded based on the factor loadings and the number of items. Pallant (2010:194) suggested two elements of importance to consider when making a conclusion on factors: (1) factor loading of above .3 should be considered as good factor, and (2) a component of more than 3 items. According to the results, both elements are supported. However, there are many dynamics to consider when organising items in the components, such as the theoretical structure. Constructs on this study were formed based on the theory. For instance, (1) Successful coopetition has 3 sub-constructs: Trust, Mutual benefits, and Commitment. (2) Firm performance: Innovation performance, Strategic performance, Job performance. (3) Determinants of Successful coopetition: Foresight, Exploiting opportunities, and Risk aversion.

Therefore, further treatment was executed based on the above theoretical structure. For

instance, component 5 and 6 should be excluded in the analysis because component 5 is empty, and component 6 includes items from different constructs, and therefore will no longer relate to any concepts specified in the model. The initial table (3) indicate that TR3 loads both in component 1 and component 2, but it loads better in component 2 with the rest of the items, hence it was deleted from component 1. The exploratory factor analysis indicates that all the sub-constructs of the three main constructs load well in their respective component. Though Risk Aversion Determinants from Successful coopetition loads in a different component (4). Given such results, it is the responsibility of the researcher to revisit the theory for justification.

In summary, the overall results of factor analysis are satisfactory since all the three components: (1) Successful coopetition, (2) Firm performance, and (3) Determinants of Successful coopetition are in accordance with theoretical structure. Despite one sub-construct (Risk aversion) was reported.

Appendix 2 Analysis of demographics and other variables

Introduction

This report summarises the results of a series of t-tests and one-way analyses of variance conducted on IBM SPSS version 26. The analysis is presented, and results are interpreted in a systematic way.

A one way between groups ANOVA and t-test was conducted to compare the mean scores of successful coopetition as the main constructs and its sub-constructs (Trust, Mutual benefits, and Commitment) across annual turnover, number of employees, racial group, education, and gender. In the ANOVA analysis, three tables of interest were considered, namely, the descriptive tables which provides the mean and standard deviation of each dependent variable. ANOVA tables which indicate whether there is a statistical significance between the groups. The significant group differences were supported by p-values that are lower than 0.05. The Post-hoc table is the third table; it is only considered when the ANOVA table shows a significant result (p-value <0.05). The Post-hoc table provides additional information on where the difference lies within the groups. The T-test analysis considers the descriptive table and the Equality of Means table checks if there is a significant difference in mean. Find the results below.

NB: The number of cases (respondents) per country were not adequate to conduct group difference analysis, the cases were few per country.

Section 1. Turnover

- **Successful coopetition**

Table 1: Central tendency measures of successful coopetition per annual turnover

	Mean	Std. Deviation
1 < 5 million	5,09	1,17
5 < 10 million	5,34	1,36
10 < 20 million	5,35	1,06
20 < 50 million	4,94	1,52
> 50 million	4,71	1,32
Total	5,14	1,24

Table 2: ANOVA

	Sum of Squares	df	Mean Square	F	P-value
Between Groups	10.347	4	2.587	1.701	.149
Within Groups	530.737	349	1.521		
Total	541.084	353			

Table 1 seems to indicate difference of scores (for successful coopetition) across annual turnover levels. However, Table 2 indicates a p-value (0.149) above 0.05, meaning that the mean difference found in Table 1 is not statistically significant. Conclusion, regardless of the annual turnover of their companies, respondents have similar opinions regarding the questions asked about successful coopetition.

- **Trust**

Table 3: Central tendency measures of Trust per annual turnover

	Mean	Std. Deviation
1 < 5 million	4,96	1,32
5 < 10 million	5,07	1,67
10 < 20 million	5,23	1,35
20 < 50 million	4,83	1,37
> 50 million	4,77	1,32
Total	4,99	1,41

Table 4: ANOVA

Trust					
	Sum of Squares	df	Mean Square	F	P-value
Between Groups	4.191	4	1.048	.526	.716
Within Groups	694.859	349	1.991		
Total	699.050	353			

Table 3 seems to indicate difference of scores (for Trust) across annual turnover levels. However, Table 4 indicates a p-value (0.716) above 0.05, meaning that the mean difference found in Table 3 is not statistically significant. Conclusion, regardless of the annual turnover

of their companies, respondents have similar opinions regarding the questions asked about Trust.

- **Mutual benefits**

Table 5: Central tendency measures of Mutual benefits per annual turnover

	Mean	Std. Deviation
1 < 5 million	5,05	1,52
5 < 10 million	5,46	1,42
10 < 20 million	5,26	1,30
20 < 50 million	5,08	1,77
> 50 million	4,48	1,85
Total	5,13	1,53

Table 6: ANOVA

	Sum of Squares	df	Mean Square	F	P-value
Between Groups	20.182	4	5.045	2.198	.069
Within Groups	800.940	349	2.295		
Total	821.122	353			

Table 5 seems to indicate difference of scores (for Mutual benefits) across annual turnover levels. However, Table 6 indicates a p-value (0.069) above 0.05, meaning that the mean difference found in Table 5 is not statistically significant. Conclusion, regardless of the annual turnover of their companies, respondents have similar opinions regarding the questions asked about Mutual benefits.

- **Commitment**

Table 7: Central tendency measures of Commitment per annual turnover

	Mean	Std. Deviation
1 < 5 million	5,22	1,36
5 < 10 million	5,51	1,42
10 < 20 million	5,47	1,22
20 < 50 million	5,23	1,47
> 50 million	4,86	1,60
Total	5,29	1,38

Table 8: ANOVA

	Sum of Squares	df	Mean Square	F	P-value
Between Groups	9.981	4	2.495	1.306	.267
Within Groups	666.643	349	1.910		
Total	676.624	353			

Table 7 seems to indicate difference of scores (for Commitment) across annual turnover levels. However, Table 8 indicates a p value (0.267) above 0.05, meaning that the mean difference found in Table 7 is not statistically significant. Conclusion, regardless of the annual turnover of their companies, respondents have similar opinions regarding the questions asked on Commitment.

Section 2. Number of employees

- **Successful coopetition**

Table 9: Central tendency measures of Successful coopetition per number of employees

	Mean	Std. Deviation
Less than 50	5,12	1,22
Between 50 and 100	5,37	1,23
Between 101 and 150	5,06	1,47
Between 151 and 200	5,46	0,83
More than 200	4,77	1,21
Total	5,14	1,23

Table 10: ANOVA

	Sum of Squares	df	Mean Square	F	P-value
Between Groups	8.244	4	2.061	1.357	.248
Within Groups	529.895	349	1.518		
Total	538.138	353			

Table 9 seems to suggest a difference of scores (for Successful coopetition) across the number of employee groups. However, Table 10 indicates a p-value (0.248) above 0.05, meaning that the mean difference found in Table 9 is not statistically significant. Conclusion, regardless of the company's number of employees, respondents have similar opinions regarding the questions asked about Successful coopetition.

- **Trust**

Table 11: Central tendency measures of Trust per number of employees

	Mean	Std. Deviation
Less than 50	4,96	1,38
Between 50 and 100	5,24	1,39
Between 101 and 150	4,78	1,80
Between 151 and 200	5,38	1,08
More than 200	4,71	1,36
Total	4,99	1,40

Table 12: ANOVA

	Sum of Squares	df	Mean Square	F	P-value
Between Groups	8.096	4	2.024	1.028	.393
Within Groups	686.919	349	1.968		
Total	695.015	353			

Table 11 seems to suggest a difference of scores (for Trust) across the number of employee groups. However, Table 12 indicates a p-value (0.393) above 0.05, meaning that the mean difference found in Table 11 is not statistically significant. Conclusion, regardless of the company's number of employees, respondents have similar opinions regarding the questions asked about Trust.

- **Mutual benefit**

Table 13: Central tendency measures of Mutual benefits per number of employees

	Mean	Std. Deviation
Less than 50	5,11	1,52
Between 50 and 100	5,35	1,41
Between 101 and 150	5,10	1,63
Between 151 and 200	5,68	0,80
More than 200	4,66	1,79
Total	5,13	1,52

Table 14: ANOVA

	Sum of Squares	df	Mean Square	F	P-value
Between Groups	11.854	4	2.964	1.284	.276
Within Groups	805.796	349	2.309		
Total	817.650	353			

Table 13 seems to suggest a difference of scores (for Mutual benefits) across the number of employee groups. However, Table 14 indicates a p-value (0.276) above 0.05, meaning that the mean difference found in Table 13 is not statistically significant. Conclusion, regardless of the company's number of employees, respondents have similar opinions regarding the questions asked about Mutual benefits.

- **Commitment**

Table 15: Central tendency measures of Commitment per number of employees

	Mean	Std. Deviation
Less than 50	5,29	1,40
Between 50 and 100	5,46	1,21
Between 101 and 150	5,10	1,65
Between 151 and 200	5,86	1,07
More than 200	4,91	1,42
Total	5,29	1,38

Table 16: ANOVA

	Sum of Squares	df	Mean Square	F	P-value
Between Groups	8.906	4	2.226	1.169	.324
Within Groups	664.842	349	1.905		
Total	673.747	353			

Table 15 seems to suggest a difference of scores (for Commitment) across the number of employee groups. However, Table 16 indicates a p value (0.324) above 0.05, meaning that the mean difference found in Table 15 is not statistically significant. Conclusion, regardless of the company's number of employees, respondents have similar opinions regarding the questions asked about Commitment.

Section 3. Racial group

- **Successful coopetition**

Table 17: Central tendency measures of Successful coopetition per racial groups

	Mean	Std. Deviation
Black	5,50	1,09
White	4,85	1,30
Coloured	4,83	1,12
Indian	5,17	1,25
Total	5,13	1,24

Table 18: ANOVA

	Sum of Squares	df	Mean Square	F	P-value
Between Groups	33.627	3	11.209	7.670	.000
Within Groups	501.279	343	1.461		
Total	534.906	346			

Table 18 indicates that there is a statistically significant difference in mean scores (of successful coopetition) somewhere across racial group because the p-value (0.000) of the F estimate (7.670) is significant (less than 0.05). This result suggests that the difference of scores observed in Table 17 is significant for some racial groups. Table 19 pinpoints the racial groups that are significantly different.

Table 19: Multiple Comparisons

(I) Race	(J)	Mean Difference (I-J)	Std. Error	P-value
Black	White	.64928*	0,138	0,000
	Coloured	0,666	0,364	0,261
	Indian	0,331	0,278	0,633
White	Black	-.64928*	0,138	0,000
	Coloured	0,017	0,361	1,000
	Indian	-0,319	0,273	0,649
Coloured	Black	-0,666	0,364	0,261
	White	-0,017	0,361	1,000
	Indian	-0,335	0,434	0,866
Indian	Black	-0,331	0,278	0,633
	White	0,319	0,273	0,649
	Coloured	0,335	0,434	0,866

The post Hoc analysis (Table 19) reveals that the opinions of Black respondents and White respondents regarding successful coopetition are significantly different as their respective p-values (0.000) are less than 0.05. In overall, Black respondents tend to agree with the statements of successful coopetition more than White respondents do. This is evident from the mean score of Blacks (5.50) which is higher than the mean score of Whites (4.85) (see Table 17). No significant difference was established between Coloured and Indians in relation with other racial groups (p-values > 0.05).

- **Trust**

Table 20: Central tendency measures of Trust per racial groups

	Mean	Std. Deviation
Black	5,42	1,19
White	4,64	1,50
Coloured	4,64	1,23
Indian	5,00	1,40
Total	4,97	1,41

Table 21: ANOVA

	Sum of Squares	df	Mean Square	F	P-value
Between Groups	47.983	3	15.994	8.549	.000
Within Groups	641.748	343	1.871		
Total	689.731	346			

Table 21 indicates that there is a statistically significant difference in mean scores (of Trust) somewhere across racial groups because the p-value (0.000) of the F estimate (8.549) is significant (less than 0.05). This result suggests that the difference of scores observed in Table 20 is significant for some racial groups. Table 22 pinpoints the racial groups that are significantly different.

Table 22: Multiple Comparisons

(I) Race2	(J)	Mean Difference (I-J)	Std. Error	P-value
Black	White	.777*	0,156	0,000
	Coloured	0,781	0,412	0,231
	Indian	0,420	0,314	0,539
White	Black	-.777*	0,156	0,000
	Coloured	0,004	0,408	1,000
	Indian	-0,357	0,309	0,657
Coloured	Black	-0,781	0,412	0,231
	White	-0,004	0,408	1,000
	Indian	-0,361	0,491	0,883
Indian	Black	-0,420	0,314	0,539
	White	0,357	0,309	0,657
	Coloured	0,361	0,491	0,883

The post Hoc analysis (Table 22) reveals that the opinions of Black respondents and White respondents regarding Trust are significantly different as their respective p-values (0.000) are less than 0.05. In overall, Black respondents tend to agree with the statements of Trust more than White respondents do. This is evident from the mean score (5.42) of Blacks which is higher than the mean score (4.64) Whites (see Table 20). No significant difference was established between Coloured and Indians in relation with other racial groups (p-values > 0.05).

- **Mutual benefits**

Table 23: Central tendency measures of Mutual benefits per racial groups

	Mean	Std. Deviation
Black	5,46	1,38
White	4,85	1,64
Coloured	5,29	1,27
Indian	5,14	1,37
Total	5,12	1,53

Table 24: ANOVA

	Sum of Squares	df	Mean Square	F	P-value
Between Groups	29.318	3	9.773	4.270	.006
Within Groups	784.977	343	2.289		
Total	814.296	346			

Table 24 indicates that there is a statistically significant difference in mean scores (of Mutual benefits) somewhere across racial groups because the p-value (0.000) of the F estimate (8.549) is significant (less than 0.05). This result suggests that the difference of scores observed in Table 23 is significant for some racial groups. Table 25 pinpoints the racial groups that are significantly different.

Table 25: Multiple Comparisons

(I) Race2	(J)	Mean Difference (I-J)	Std. Error	P-value
Black	White	.613*	0,172	0,002
	Coloured	0,167	0,455	0,983
	Indian	0,322	0,347	0,790
White	Black	-.613*	0,172	0,002
	Coloured	-0,446	0,451	0,756
	Indian	-0,291	0,342	0,831
Coloured	Black	-0,167	0,455	0,983
	White	0,446	0,451	0,756
	Indian	0,155	0,543	0,992
Indian	Black	-0,322	0,347	0,790
	White	0,291	0,342	0,831
	Coloured	-0,155	0,543	0,992

The post Hoc analysis (Table 25) reveals that the opinions of Black respondents and White respondents regarding Mutual benefits are significantly different as their respective p-values (0.000) are less than 0.05. In overall, Black respondents tend to agree with the statements of Mutual benefits more than White respondents do. This is evident from the mean score of Blacks (5.46) which is higher than the mean score (4.85) of Whites (see Table 23). No significant difference was established between Coloured and Indians in relation with other racial groups (p-values > 0.05).

- **Commitment**

Table 26: Central tendency measures of Commitment per racial groups

	Mean	Std. Deviation
Black	5,64	1,20
White	5,02	1,49
Coloured	5,04	0,89
Indian	5,30	1,44
Total	5,28	1,39

Table 27: ANOVA

	Sum of Squares	df	Mean Square	F	P-value
Between Groups	30.988	3	10.329	5.561	.001
Within Groups	637.155	343	1.858		
Total	668.143	346			

Table 27 indicates that there is a statistically significant difference in mean scores (of Commitment) somewhere across racial groups because the p-value (0.001) of the F estimate (5.561) is significant (less than 0.05). This result suggests that the difference of scores observed in Table 26 is significant for some racial groups. Table 28 pinpoints the racial groups that are significantly different.

Table 28: Multiple Comparisons

(I) Race2		Mean Difference (I-J)	Std. Error	P-value
Black	White	.626*	0,155	0,000
	Coloured	0,600	0,410	0,462
	Indian	0,346	0,313	0,686
White	Black	-.626*	0,155	0,000
	Coloured	-0,027	0,407	1,000
	Indian	-0,280	0,308	0,800
Coloured	Black	-0,600	0,410	0,462
	White	0,027	0,407	1,000
	Indian	-0,254	0,489	0,955
Indian	Black	-0,346	0,313	0,686
	White	0,280	0,308	0,800
	Coloured	0,254	0,489	0,955

The post Hoc analysis (Table 28) reveals that the opinions of Black respondents and White respondents regarding Commitment are significantly different as their respective p-values (0.000) are less than 0.05. In overall, Black respondents tend to agree with the statements of Commitment more than White respondents do. This is evident from the Black mean score

(5.64) which is higher than White mean score (5.02) (see Table 26). No significant difference was established between Coloured and Indians in relation with other racial groups (p-values > 0.05).

Section 4. Gender

Table 29 below show that the mean and standard deviation is slightly the same for male and female in all the constructs.

Table 29: Group Statistics

Constructs	Gender	Mean	Std. Deviation
Successful coopetition	Male	5,14	1,20
	Female	5,15	1,35
Trust	Male	4,99	1,39
	Female	4,99	1,45
Mutual benefits	Male	5,13	1,48
	Female	5,14	1,66
Commitment	Male	5,26	1,40
	Female	5,40	1,33

Table 30: T-test for Equality of Means

Constructs	t	df	P-value	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Successful coopetition	-0,070	352	0,944	-0,011	0,151	-0,307	0,286
Trust	0,047	352	0,963	0,008	0,171	-0,329	0,345
Mutual benefits	-0,048	352	0,962	-0,009	0,186	-0,374	0,356
Commitment	-0,855	352	0,393	-0,14392	0,16839	-0,47510	0,18727

Table 29 seems to suggest a difference of scores (for all the constructs) between males and females. However, Table 30 indicates p-values above 0.05, implying that there is no significant

difference in the way men and women scored successful coopetition, trust, mutual benefits, and commitment. In other words, regardless of the gender, the scores of all these constructs are not significantly different for males and females.

Appendix 3 Distributed Survey



Determinants of successful coopetition and their impact on firm performance

1. In which country is your company's headquarters?

2. Number of years in operation?

0 50 years 100

3. What is your entity's average annual sales (turnover) in US Dollars?

less < 5 million	5 million < 10 million	10 million < 20 million	20 million < 50 million	> 50 million
○	○	○	○	○

4. Number of employees in the entity?

Less than 50	Between 50 and 100	Between 101 and 150	Between 151 and 200	More than 200
○	○	○	○	○

5. Which of the following best describes the principal industry of your organization?

Other (please specify)

6. As a respondent, are you the owner or an employee of the organisation?

Other (please specify)

7. What is your gender?

○ Female

○ Male

8. What is the highest level of school you have completed or the highest degree you have received?

- No formal schooling
- Primary school
- High school
- Undergraduate degree
- Post graduate degree

9. Which race/ethnicity best describes you? (Please choose only one.)

- Black
- White
- Coloured
- Indian
- Multiple ethnicity / Other (please specify)

10. Please indicate the type of ownership of your organization

- Family owned
- Individual(s)
- Other juristic body (eg. Company, CC, Trust, etc.)

11. Please select the appropriate answer. We can trust in other firms in the industry to form alliances.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

12. In my opinion, there is a high level of harmony in the working relationship between businesses in this industry.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

13. I trust that the competitors with whom I form alliances in this industry will be good for my business.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

14. Even though the partner is my competitor, I would not hesitate to get into an alliance if my competitive position would be enhanced.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

15. Even though the partner is my competitor, we are open to sharing resources and information.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

16. To establish a relationship with my competitor, both companies must have mutual goals and objectives.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

17. It is important for my firm to participate in an alliance or to partner with competitor firms or organiztions in the same industry.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

18. For the success of a relationship I establish with my competitor, I must be completely committed.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

19. I intend to maintain cooperative relationships with other firms in the industry.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

20. An alliance with my competitor has resulted in an increase in the company's profits.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

21. An alliance with my competitor has resulted in an increase in the company's revenue.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

22. An alliance with my competitor has resulted in an increase in the number of products sold.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

23. collaborating with my competitors has led to improvement in our current technology.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

24. Collaborating with my competitors has led to an increase in performance due to improvements in technology.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

25. collaborating with my competitors has led to an increase in customer value due to improvements in technology.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

26. An alliance with my competitor has resulted in an increase in the number of new products/services launched.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

27. An alliance with my competitor has resulted in an increase in the number of new customers.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

28. An alliance with my competitor has resulted in a decrease in the number of customer complaints.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

29. Being in a cooperative relationship with my competitor has resulted in an increase in general customer satisfaction.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

30. The number of company employees has increased since collaborating with my competitors.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

31. Collaborating with my competitors has required additional skills in the company.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

32. We can easily find the additional skills from the external community as required in the partnership with competitors.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

33. When making business decisions, I systematically scan all environmental areas.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

34. I systematically scan all, the short-, medium-, and long-term.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

35. I often consider multiple futures and have systematic ways for defining strategy in environments with different levels of uncertainty.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

36. I rely mostly on experience-based intuition rather than explicit methods to interpret the environment.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

37. I have a dedicated unit that has the mandate to explore and develop new markets that can contribute to revenue.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

38. I am best at exploring our current markets and/or adjacent to our current markets.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

39. My activities for exploring new markets are limited to low-risk probing.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

40. I usually invest in low risk projects.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

41. I generally take high risks.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

Appendix 4 Ethics clearance certificate

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Feela

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: H19/09/08**
PROJECT TITLE	Determinants of successful coopetition between SMEs in SADC countries - implications for strategy and economic growth
INVESTIGATOR(S)	Mr T Feela
SCHOOL/DEPARTMENT	Wits Business School/
DATE CONSIDERED	13 September 2019
DECISION OF THE COMMITTEE	Approved
EXPIRY DATE	06 October 2022

DATE 07 October 2019 **CHAIRPERSON** (Professor J Knight)

cc: Supervisor : Professor K Ojah

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University. Unreported changes to the application may invalidate the clearance given by the HREC (Non-Medical)

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to completion of a yearly progress report.**

_____ _____/_____/_____
Signature **Date**

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES