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Endogenous and exogenous risk factors in the success of South African small medium enterprises

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A thesis submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, Johannesburg, South Africa, in fulfilment of the requirements for the degree of Doctor of Philosophy (PhD)

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ABSTRACT

The objective of this study is twofold: first to evaluate the magnitude of the effect of endogenous and exogenous risk factors in the success of South African (SA) small and medium-sized enterprises (SMEs); second, to develop a framework for an integrated risk assessment model that can be used to assess SA SMEs holistically. Drawing from the entrepreneurial ecosystem, systems perspective, GEM framework and complex theory, an integrated risk assessment model framework that is person-centric, interdisciplinary, and multidimensional (individual, firm and environment) is formulated.

This was a cross-sectional, quantitative study, which followed a post-positivist approach. Primary data, with a sample size of 286, was collected from SA SMEs through self-administered questionnaires. Data analysis included correlational analysis, backward elimination method, hierarchical multiple regression and mediation analysis. Financial capital, entrepreneurial self-efficacy on growth and risk perception emerged as significant predictors of SME success. However financial capital is by far the most influential predictor of financial performance. The results also confirmed the mediating effect of financial capital between entrepreneurial self-efficacy (finance and growth) and financial performance. Entrepreneurs who are confident can raise enough capital for their businesses, thus producing successful SMEs.

Government policies and support programmes need to take a holistic view when supporting SMEs. While taking a holistic view, priority needs to be put on making capital available for entrepreneurs to develop and grow their businesses. Training programmes can focus on up-skilling entrepreneurs regarding entrepreneurial tasks that can improve their self-efficacy in management, financial understanding, and growth of their businesses. The study's findings are important in that they help funders realise that business plans and financial projections are not the most important predictors of SME success, thus the need to review current risk assessment models.

DECLARATION

I Ntombikayise Jabulile Galawe declare that the study on endogenous and exogenous risk factors in the success of South African small medium enterprises is my own work. It has not been submitted for examination or any degree in any other university. It is submitted in fulfillment of the requirements for the award of the Degree of Philosophy in Management at the Wits Business School, University of Witwatersrand, Johannesburg, South Africa. I further declare that I have properly acknowledged all sources of information used in this study.

Ntombikayise Jabulile Galawe

Signed at …….

On the …….. day of ……. 2017

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First, I would like to thank my supervisor, Professor Boris Urban, who was always there when I needed his advice. His guidance and positive criticism have made all the difference regarding the quality and the direction my research took. He has always displayed professionalism and has been very supportive while allowing me to grow as an independent researcher.

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Rato, Ntando and Luli, mommy is finally done, yes finally, and I hope one day you can read this book that kept mommy so busy.

LIST OF ACRONYMS

Business Planning	BP
Cognitive Style-Intuitive	CS_I
Cognitive Style-knowing	CS_K
Cognitive Style-planning	CS_P
Control Variables	CV
Dependent Variables	DV
Entrepreneurial Self Efficacy-Finances	ESE_F
Entrepreneurial Self Efficacy-Growth	ESE_G
Entrepreneurial Self Efficacy-Management	ESE_M
Financial Capital	FC
Human Capital	HC
Human Capital – Business Training	HC_BT
Human Capital – Work Experience	HC_WE
Independent Variables	IV
Risk Perception	RP
Small and Medium Sized Enterprise	SME
Small Medium and Micro Enterprises	SMME
SME Success- Business Financial Performance	BS_F
SME Success- Business Growth	BS_G
South Africa	SA
Total Early-Stage Entrepreneurship Activity	TEA

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1 CHAPTER 1: INTRODUCTION

The chapter begins with the purpose of the study, highlighting the research questions that guide the research. It is then followed by the background and context, the gap and contribution in literature, problem statement and the objectives. The chapter ends with the significance of the study, showing the benefits and delimitation and finally, the structure of the whole thesis.

1.1 Purpose of the Study

The objective of this study is twofold: to evaluate the magnitude of the effect of endogenous and exogenous risk factors in the success of South African (SA) small and medium-sized enterprises (SMEs), and to develop an integrated risk assessment model framework that can be used to assess SA SMEs holistically.

The study was guided by the following research questions:

[1] How do the independent variables (entrepreneur, firm and environmental risk factors) correlate with the dependent variable (SME success)?
[2] To what extent does each of the risk factors affect the success of the SME?
[3] How does the integration of the different risk factors affect the likelihood of success of the SME?
[4] To what extent does the entrepreneur contribute towards the success of the SME and why?
[5] What is the best conceptual framework to use to develop a model to assess the risks and likelihood of success of SMEs in South Africa?

1.2 Background and Context of the Study

This section reflects on the background, the current state, and the progress made so far in dealing with various challenges in the SMME sector. This is done by analysing available statistics in literature and using the available statistics to illustrate the extent of the problem for which this study seeks to propose solutions.

First, to give context to the study, the definitions relating to small business are explained. This research is conducted in the current South African (SA) socio-economic milieu with a focus on small businesses, as defined by the National Small Business Act of South Africa of 1996. The National Small Business Act defines small businesses as separate and distinct business entities, including co-operative enterprises and non-governmental organisations, managed by one or more owners. Small businesses can be classified as a micro, a very small, a small or a medium enterprise (South Africa, 1996, p. 3).

Small businesses are conventionally abbreviated SMMEs in South Africa. Their classification is based on five categories established by the original act. Namely, standard industrial sector and subsector classification, size of class, equivalent of paid employees, turnover and asset value, but excluding fixed property (South Africa, 2004). Table 6-8 in Appendix B provides the detailed criteria for SMME classification.

There is, therefore, a need to explicitly describe and understand the small medium and micro enterprises (SMMEs) in the SA context. The concepts SMMEs and small businesses are used interchangeably in most reports and is the case in this study (Finscope, 2010; Mike & Penny, 2016).

To comprehend this study's central thesis, it is important that the researcher first outlines the background and history of small business development in South Africa. In 1995, the South African first democratically elected government introduced an SMME policy to promote and develop SMMEs (DTI, 1995, p. 363).

This policy was intended to enable individuals who were excluded in the past to participate in the economy, reduce the high failure rate of SMMEs, create funding opportunities and access, increase entrepreneurial activity, and thus, grow the small business sector in SA (Brink, Cant, & Ligthelm, 2003).

However, a high failure rate of small businesses and consequently, the stagnant SMME sector continues to be a big challenge in South Africa (Hartcher, Hodgson, & Holmes, 2003; Ramukumba, 2014; Seeletse, 2012). Despite many elaborate government programmes that have been put in place to assist with small business development regarding financial and non-financial support, SA is still sluggish in the development of SMMEs (DTI, 2008; South Africa, 1996).

The SMME confidence index, a survey of SMME performance perceptions, suggested that government initiatives have not yielded the intended results. After approximately 20 years since this policy was introduced in 1996 with numerous amendments having taken place after that, the development of SMMEs is still very sluggish with only about 5.6 million small businesses contributing only 50% to GDP (Finscope, 2010, p. 3).

According to the 2015/16 GEM report, the picture painted by Finscope in the 2010 survey has changed for the worst. South African SMMEs contributed only 45% to GDP in 2014 compared to 50% in 2010, and this figure suggests shrinkage of the sector compared to what the Finscope report has revealed. Moreover, its economic contribution is very low compared to countries like Egypt where SMMEs contributed about 80% to GDP in 2015 (Mike & Penny, 2016) and Taiwan where they contribute approximately 98% towards the nation's GDP (Ladzani & Van Vuuren, 2002, p. 153).

Figure 1.1 provides an overview of the progress made so far regarding entrepreneurial activity. With an average TEA lower than the regions' average of 14%, this picture supports the view that the SMME sector is not growing the way it is expected to. SA needs to have a TEA of between 15% and 20% which is more than double the current rate.

If TEA can be improved, SMEs can contribute significantly to the country's economic growth and reduce the unemployment rate and poverty (M Herrington & Kew, 2014; Mike & Penny, 2016).

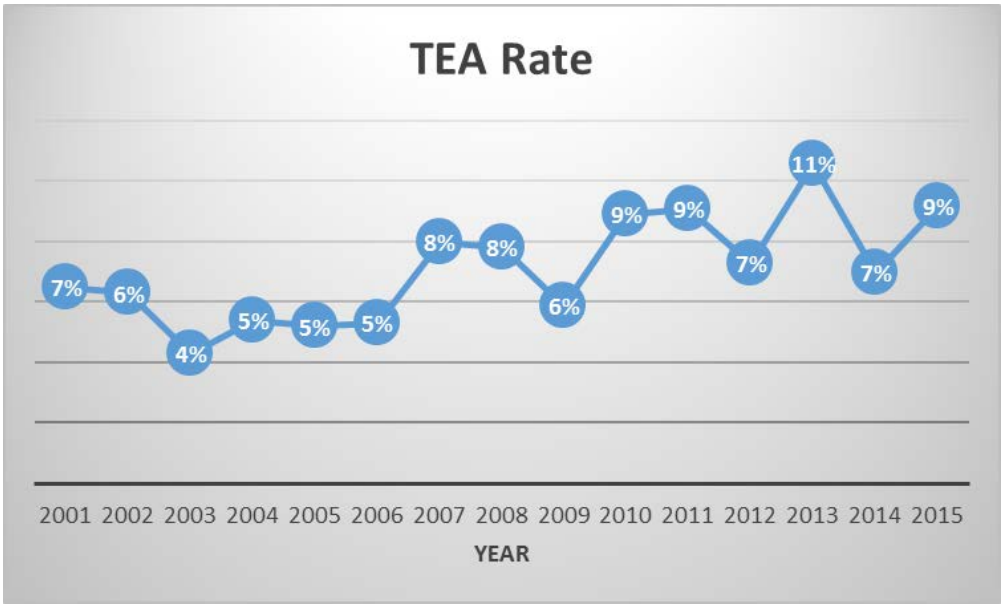


Figure 1.1: SA TEA rate below world average

Source: Mike and Penny (2016, p. 27)

Australia had a similar problem of high failure rate of small businesses; however, it had a larger number of SMMEs which offset the high failure rate. As a result, their small business sector accounts for approximately 97% of all businesses (Hartcher et al., 2003, p. 71). "In the European Union, SMEs account for over 99% of all enterprises" (Organisation for Economic Cooperation Development, 2009, p. 6). The high number of start-ups is what SA needs as a country to offset the current failure rate and significantly increase the number of start-ups (Milana, Andersen, & Murdock, 2016). Research shows that the number of start-ups, and people intending to start businesses, continues to decrease in SA, further reducing the number of current operating SMMEs (Fatoki & Odeyemi, 2010), thus an urgent need to develop new models and theories to change this outlook.

Because the failure of SMMEs is not a challenge faced only by South Africa, but rather a worldwide problem, it was important to look at what other countries do to grow their SMME sector, increase entrepreneurial activities, support their SMMEs and reduce the failure rate (Brink et al., 2003). Internationally, countries grow their economies faster by creating an environment conducive for their small businesses (OECD, 2009). According to GEM and the World Bank reports, a favourable environment comprises: ease of access to finance, ease of starting a business, relaxed regulatory laws about starting and running a small business in which SA ranks very poorly (Business, 2017; Mike & Penny, 2016; World Bank, 2012, 2016)Herrington & Kew, 2016; World Bank, 2012, 2016, 2017a).

This study argues that to create a conducive environment for South African SMMEs to grow and be successful, it is critical to start addressing some of the multiple challenges SMMEs face on a day-to-day basis (Milana et al., 2016). Addressing these challenges will require researchers, practitioners, government institutions and all relevant stakeholders to start taking a holistic approach when dealing with SMMEs (Wiklund, Patzelt, & Shepherd, 2009). There are benefits in taking a holistic, integrated approach; it allows the study to take a broader perspective in analysing the relationships between constructs (Baum, Locke, & Smith, 2001).

Many scholars have started to see the benefit of integrated, multidimensional, interdisciplinary studies and they are calling for more studies to take this approach (Baum et al., 2001; Botha, van Vuuren, & Kunene, 2015; Miller, 1992). This is because they realise that SMMEs exist in an ecosystem and operate within a particular framework. Thus, a need for a holistic approach if proposed solutions are to be effective (Isenberg, 2011; Mike & Penny, 2016).

Taking a holistic approach includes integrating both macro and micro level analysis which means analysing exogenous and endogenous risk factors in parallel. Entrepreneurship studies usually analyse one risk variable in isolation at the expense of another interdependent risk variable. The holistic approach will definitely change the manner in which SMMEs are assessed and supported (Smit & Watkins, 2012).

The low entrepreneurial activity, few start-ups, high failure rate, high bad debt and low funding approval rate of SMMEs in SA are evidence of assessment models that are imprecise in their prediction of success, thus yielding undesirable results. This kind of assessment model leads to interventions and support structures that are not adequately geared towards maximally supporting SMMEs (Smit & Watkins, 2012).

The South African GEM report of 2012 recommended that new funding models of SMMEs should be encouraged and that these models should involve state and grant-supported funding models, coupled with business development support (Turton & Herrington, 2013). If unbiased models which are small business focused can be developed and approved to be used by all small business assessors, then more SMMEs could get funded and receive appropriate support so they can be sustained; thus, increasing the number of new SMMEs (Botha et al., 2015; Miller, 1992).

For example, the current banking environment has risk assessment models that focus almost solely on projected financial statements and business plans. These are not tailored for small businesses, especially start-ups (Ramukumba, 2014). This incorrect assessment focus results in small businesses not getting funding or credit. These are some of the items that hinder or slow down their growth and thus, cause all the other problems faced by SMMEs, as indicated earlier in this section (Smit & Watkins, 2012).

Several theories support this call for a new integrated approach in entrepreneurship research and complexity theory is one of them (Fuller & Moran, 2001). There is a clear support for this study's argument from neuro and cognitive studies as well. The consistency that arises from the view of the neuro-entrepreneurship theory that states that entrepreneurship research should be person-centric, since the firm does not make decisions, but the entrepreneur does, emphasises the importance of understanding the thought process and behaviour of an entrepreneur (Beugré, 2010). The entrepreneur is the driving force behind the success of the small business.and a key determinant of success (Shane & Venkataraman, 2000) hence the highest risk factor.

Following from the context and current state of SMMEs described, this study is narrowed down to focus on the development of an integrated risk assessment model framework for SA SMMEs. The framework is developed by investigating two main risk categories that cause SMMEs to fail. The two main risk categories are endogenous (the firm and the entrepreneur) and exogenous (the environment) risk factors.

1.3 Gap in the Literature and Contribution to Knowledge

As the convention of quality Ph.D work dictates, this work seeks to address a set of coherent gaps in the South African SMME and entrepreneurship literature. Much research has been conducted around the failure of small businesses. These studies looked at the average failure rate which is approximately 75% in South Africa (Beaver, 2003; Finscope, 2010).

Secondly, they examined the risk factors that cause these high failure rates (Bera, 2009) and assessment models that predict the viability or likelihood of success (Teng, Bhatia, & Anwar, 2011). All these related issues have been well researched and documented (Giliomee, 2004). However, these studies have focused mainly on developed countries such as the US, Asian countries, and some European countries (Kanniainen & Leppämäki, 2009; Liu, Hou, Yang, & Ding, 2011; Perry, 2001; Yallapragada & Bhuiyan, 2011; Zahra, Fahimeh, & Kambeiz, 2012).

These studies also focus on the early stage of the small business (e.g., at start-up or pre-start-up, which are during the opportunity search period. Lewis and Churchill (1983) identified five stages of growth of an SMME; existence, survival, success, take-off and resource maturity. This study is conducted in a developing country and focuses on the success stage. Recently studies focusing on developing countries are starting to emerge in their numbers (Duggan, 2009; Ladzani & Van Vuuren, 2002; Liu et al., 2011; Urban, 2006, 2012). This study contributes to that body of work by focusing on SA's socio-economic milieu and mainly on the success stage in the life of the SME.

Additional work which takes an interdisciplinary perspective looks at the integration of the three risk factors and focuses on the South African context would add incrementally to the literature. Most literature (management, financial, economic and psychology) tend to take a particularistic view; they focus on particular risks to the exclusion of other related ones (Baum et al., 2001; Wiklund et al., 2009). This limited kind of research focus of analysis has been criticised in risk literature; hence, this study takes a more integrated view on small business risk assessment (Miller, 1992; Wiklund, Patzelt, & Shepherd, 2007). This study is cognisant of the fact that entrepreneurship has dual roots both in economic and behavioural science (psychology) fields. Thus, the need to place emphasis on an interdisciplinary-multidimensional integrated framework (Robert A Baron, 2002).

The resolution of these gaps would add a meaningful contribution to the current body of knowledge in this vital area. The contribution is both theoretical, practical and methodological and is summarised as follows:

[1] This study focuses on developing/ emerging markets, specifically South Africa
[2] It focuses on success of the growth stage of the business (i.e. financial performance)
[3] This study takes an integrated and multidimensional view on risks (holistic approach)
[4] The approach taken is an interdisciplinary approach of pertinent knowledge bases
[5] The measurement model, factor structure, reliability, and validity instruments are SA context specific.

Therefore, the study makes an important theoretical contribution to the entrepreneurship literature by integrating the entrepreneur, the firm and the environment risk factor and correlating it to SMME success. Moreover, it makes a practical contribution by producing an integrated risk assessment model framework that risk assessors, funders and other stakeholders can use to understand the key risk factors that influence SME success in South Africa.

1.4 Problem Statement

The high failure rate of small businesses in South Africa is one of the biggest challenges the country faces. The failure rate is estimated to be between 70 and 80% in the first three years of operation (Brink, Cant, & Ligthelm, 2003). Because of these failures, the SMME sector is not growing nor contributing to GDP and job creation as it is supposed to (Berry et al., 2002; Cornwall & Naughton, 2003; Kesper, 2000; Seeletse, 2012). The high failure rate of SMMEs is not the only problem causing a stagnant SMME sector. Other factors causing the sector to be sluggish are low entrepreneurial activity, few start-ups, low funding approval rate and high bad debt (Fatoki & Odeyemi, 2010), including a lack of accurate models to assess SMMEs (Smit & Watkins, 2012).

The burning issue and overarching research question become; how can this failure rate be reduced so the sector could grow? What kind of framework is needed to assist working towards a model that can provide a scientific method to address this? The literature argues that for an SMME sector to flourish; several components affecting it need to be optimised so that the environment could be favourable (Isenberg, 2011; Organisation for Economic Cooperation Development, 2009; World Bank, 2017). Hence this study chose to address the lack of models that can be precise in identifying risk levels and predicting the likelihood of success of SMMEs particularly in South Africa (Smit & Watkins, 2012; Teng et al., 2011)

In an attempt to investigate, and understand the identified problem, the study categorises the causes of these failures into two main risk categories. These risk categories are endogenous (the firm and the entrepreneur) and exogenous (the environment) risk factors. After identifying the main problem, the study focused on one of the root causes of SMME failures as the research problem since not all the problems can be researched in one study.

1.5 Objectives of the Research

Any and all efforts meant to resolve the clearly articulated problems that engage this study can be framed around clearly identifiable objectives. The guiding objectives are laid out in this section as follows:

[1] Review the direct and indirect relationship that endogenous (the firm and the entrepreneur) and exogenous (the environment) risks may have on SME success (business financial performance) in SA context.
[2] Determine the unique contribution of each risk factor to the SME success model
[3] Determine the extent to which the integration of several risk variables affects the likelihood of success of the SME.
[4] Quantify the magnitude of the effect of each risk factor in the success of SMEs.
[5] Establish a valid and reliable measurement model and a factor structure and develop a framework for an integrated risk assessment model.

1.6 Significance of the Study

Internationally, small businesses, sometimes referred to as SMEs, play a vital role in the growth of both developed and developing economies. They contribute towards job creation, income generation, GDP, poverty alleviation and the overall development of the economy (Botha et al., 2015; Wiklund et al., 2009). South Africa is not maximally benefiting from this sector because of the challenges discussed ealier that hinder the SMME sector from growing. These challenges emanate from internal and external factors which pose risks to an SMME (Berry et al., 2002).

One of the challenges which this study investigates is the lack of South African risk assessment model frameworks that can accurately and holistically identify high-risk factors that might hinder an SMME from succeeding and can be precise in predicting the likelihood of success of that particular SMME.

The availability of such frameworks and models will assist with accurate assessment and diagnosis of risks thus minimising the chance of failure. Moreover, it will help government when developing SMME policies and support programs (A. C. Cooper, Gimeno-Gascon, & Woo, 1994; Smit & Watkins, 2012).

This study investigates the relationships of endogenous risk factors (the firm and the entrepreneur) and exogenous risk factors (the environment) with SME success and uses these relationships to develop a framework for an integrated risk assessment model (Everett & Watson, 1998). Various hypotheses are tested using quantitative methods, and the findings are envisaged to benefit the following stakeholders in the SMME space and the entrepreneurship ecosystem as a whole in South Africa: entrepreneurs, funding institutions, SMME developmental programmes, mentors, consultants, and government, especially the Department of Small Business Development and its agencies.

The findings from the study are expected:

[1] To provide a framework for an integrated risk assessment model that will enable funders and other interested stakeholders to accurately (quantitatively, objectively and holistically) assess the risks, likelihood of success and the sustainability of SMMEs before any or further intervention (financial or non-financial).
[2] To improve the current funding approval rate, and reduce bad debt and failure rate of SA SMMEs because the framework will allow for the early elimination of non-deserving enterprises, thus allowing space for the well-deserving companies with a high likelihood of success.
[3] To help entrepreneurs to seek out the right intervention, based on known risks and their impact thereof
[4] To assist incubators and other SMME development agencies take a holistic approach when developing their support programmes.
[5] To provide validated set of measures for investigating risk factors affecting SME success in South Africa.

1.7 Delimitations of the Study

This study focuses on the small business sector which is described as the secondary economy (Ramukumba, 2014). It excludes SMMEs that are survivalist in nature that does not keep a record of their finances. It is hard to collect data from this section of the SMME sector and to measure success/growth at this stage, thus the exclusion. The study looked at South African SMMEs only, which included nine provinces, and both developed and underdeveloped areas. The focus is on SMMEs that have been in business for at least one year to enable the researcher to measure success using growth and financial performance indicators. However, there is no restriction on how old the business is as long as it is not younger than one year. The study explores all small businesses in South Africa, irrespective of industry or sector of the economy to which they belong.

1.8 Structure of the Thesis

Chapter 1 introduces the context and background to the study. It provides the problem statement, objective and the research questions that guided the study, details the significance of the study, the gap in the literature and the contribution the study makes.

Chapter 2 provides the definitions of the key concepts followed by a detailed review and analysis of the existing literature on the study's variables. The theoretical foundations underpinning the three risk variables under study are examined. The two most important high-level factors are endogenous (the entrepreneur, the firm), and exogenous (the environment). In addition; this chapter presents the conceptual framework that guided this study. It illustrates the relationships between the endogenous and exogenous factors with SME success.

Chapter 3 provides the methodological approach followed. It details the paradigms and philosophies that guided the study. It further describes the research instrument, the sampling methods, sample size and data collection procedure followed.

The data screening and data analysis approach is also addressed in this chapter, testing assumptions, validity, and reliability of instruments before moving to the actual data analysis in the next chapter.

Chapter 4 presents the results of the hypothesis tested about the correlations and predictive capacity of the IVs to SME success. The sample characteristics are also presented. Moreover, the results from EFA, CFA and hierarchical multiple regression are interpreted and presented. Finally, the framework is developed and presented.

Chapter 5 discusses the study's findings in comparison with existing theories and literature. It provides the limitations, theoretical and practical contribution makes suggestions for future research and recommendations and conclusions.

2 CHAPTER 2: LITERATURE REVIEW

The objective of this section is to review the literature on the study's topic. In reviewing the current literature, key constructs are defined, relevant theories explored and hypotheses developed. The chapter is structured as follows: introduction, underpinning theories, SME success, risk identification, exogenous and endogenous risk factors, integration of risk factors and ends with a chapter summary.

2.1 Definition of Key Constructs

The key constructs used in this study are SMEs, entrepreneurs, entrepreneurship, uncertainty and risk.

2.1.1 Small and Medium Enterprises (SMEs)

Different countries sometimes classify small and medium-sized enterprises differently. The classification of SMEs in this study is taken from the South African Small Business Act 102 of 1996 which defined small businesses in the previous chapter. It is classified, based on the sector, number of employees, total gross asset value, and turnover. This act states that SMEs are businesses that have employees less than 201 and turnover that do not exceed R50 million. The term small business and SME is used interchangeably in this study (South Africa, 1996). See the detailed classification criteria in Table 6-8 in Appendix B.

2.1.2 Entrepreneur and Entrepreneurship

There are many definitions in literature for the terms 'entrepreneurs' and 'entrepreneurship'. First, GEM defines entrepreneurship as "any attempt at new business or new venture creation, such as self-employment, a new business organization or the expansion of an existing business, by an individual, a team of individuals, or an established business" (Reynolds, Hay, & Camp, 1999, p.3).

Long (1983) describes how the two concepts are defined and differentiated. He defines entrepreneurship as a process and the entrepreneur in terms of competencies, capacities, and skills as cited by Chen, Greene, and Crick (1998). The concept of entrepreneurship is viewed as a situation that describes the general structural functioning of the economy and society, while the entrepreneur is described as the person (agent) involved in the activity. Ripsas (1998) also agrees that an entrepreneur is defined by the work he does and not by what he owns.

Some of the main authors have contributed significantly towards deepening today's understanding of entrepreneurship theory (Busenitz & Barney, 1997; Kirzner, 1978, 1999; Schumpeter, 1934; Shane & Venkataraman, 2000). Currently, there is no single universal definition of entrepreneurship, although there are some elements of similarities in concepts developed so far and this is what makes the conceptualisation of entrepreneurship studies complicated.

One scholar seems to dispute that entrepreneurship is a concept that is worth special attention. He believes entrepreneurship falls within the leadership theory context. He claims entrepreneurship is just leadership in a narrow, specific context (Vecchio, 2003). This study disagrees with this view; entrepreneurship definitely has leadership as one of the key characteristics of the entrepreneur, but that cannot reduce the whole concept to just one characteristic within it. Entrepreneurship definitely needs to be treated as a separate construct from general leadership theories because it is a context and task specific construct. This shows the interdisciplinary nature of entrepreneurship as a concept (Baum et al., 2001).

Table 2-1 summarises some of the definitional developments that have taken place since the conversation on entrepreneurship started. Different scholars conceptualise entrepreneurship differently, and this conceptualisation has evolved. This study is interested in the key themes that are used to conceptualise the theory of entrepreneurship or entrepreneurs, the key elements that can direct researchers and SME assessors on the critical elements on which to focus when evaluating SMEs.

Table 2.1: Key themes on the conceptualisation of entrepreneurship

Definitions	Authors	Key themes
Entrepreneurs are self-employed individuals who adjust themselves to risk where the return is uncertain.	(Palich & Bagby, 1995)	Risk Uncertainty
Entrepreneurs are individuals who pursue an opportunity regardless of the resources they control	(Timmons,1994)	Proactive Initiation
Entrepreneurs are confident individuals who act upon their own judgement in the face of uncertainty attached exploitation of opportunities.	(Knight, 1921)	Uncertainty Opportunity Confident Judgement
Entrepreneurs are innovators who carry out new unique combinations or integrate resources by introducing new products or processes to generate profit.	(Schumpeter, 2000)	Innovation Profit
The entrepreneur is someone who facilitates adjustment to change by spotting opportunities for profitable arbitrage	(Kirzner, 1999)	Opportunity Profit
Entrepreneurship is the ability to detect opportunities of the environment in which we are living, producing dreams from these intuitions, converting these dreams into projects, carrying out these projects into application, and facilitating the living of people.	(Bozkurt, 2000)	Opportunity Innovation Intuition
Entrepreneurs are those who have either founded a firm within the last two years or plan to launch within the next five years	(Busenitz & Barney, 1997)	Initiation
Entrepreneurs are organisational actors who create rents through innovation. Rents are conceptualised as earnings above average relative to others in the industry and innovation as an act of carrying out new combinations to create value	(S. Malone, 1991)	Innovation Profit
Entrepreneurs are individuals who are driven jointly by motivation and outcome. They are characterised with three discrete categories which are lifestyle, small profitable and high growth ventures	(Ronstadt, 1984)	Profit Motivation Outcome Growth
The entrepreneur is the one who undertakes a venture, organises it, raises capital to finance it, and assumes all or a major portion of the risk.	(Burch, 1986)	Initiation Risk
Entrepreneurship is bringing new goods and services not available in the enterprise, organisation of shape, markets, processes and raw materials, opportunity discovery and evaluation of activities	(Shane & Venkataraman, 2000)	Opportunity Innovation
An entrepreneur is a person who is developing strategies in line with his/her own entrepreneurship understanding, so he/she is the person who has made the pioneering of change	(Ozkara et al., 2006)	Initiation

Sources: As per column 3

There is strong evidence presented from the definitions on Table 2-1 that risk and uncertainty are the core of entrepreneurship. This is the kind of environment in which entrepreneurs must operate. Every definition has either a direct or an inferred risk conceptualisation, thus the focus on risk factors (endogenous and exogenous) in this study. The common themes that stand out in the definitions in Table 2-1 are risk, uncertainty, innovation, profit, initiation, motivation and confidence which feature in most of the definitions.

Therefore, this study's definition encompasses these key themes which are core and capture the key roles and tasks that entrepreneurs perform. From these key features, a definition for this study was adopted. An entrepreneur is an individual who can endogenously create and exogenously identify opportunities in an environment where everyone else sees chaos and high risk and convert or repackage the chaos and risks into innovation that can cater for people's needs (market-gap), make a profit and create a successful enterprise (Schumpeter, 2000, Knight, 1921). The fact that the term entrepreneur does not have one definition can be taken as a reflection of how diverse and complicated entrepreneurs and their ventures can be.

2.1.3 Risk and Uncertainty

Risk is an objective measure of uncertainty. The difference between risk and uncertainty is when experts can produce a probability distribution of the results while with uncertainty they cannot (Demir & Bostanci, 2010). According to Levy (1992, p. 173) risk differs from uncertainty. Uncertainty is when the outcomes are not completely known, and certainty is where the known probabilities are equivalent to zero and one, this definition is consistent with Demir and Bostanci's definition. The concept of risk introduces many unknowns, uncertainties, volatilities and variability, which are associated with potential loss or failure. "Risk is the possibility of loss or injury and the degree of probability of such loss" (Kaplan & Garrick, 1981, p. 12) and this is sometimes referred to as Knightian risk. There is some consensus among risk scholars in the literature about the two variables that describe risk, which is probability/ likelihood and impact.

Risk = f (probability, impact)……risk variables

These two variables are key when assessing and classifying risk and how it impacts on the likelihood of success (Christine, 1995; Demir & Bostanci, 2010; Kaplan & Garrick, 1981). In this study, the risks and uncertainties of SMEs are determined, evaluated and quantified. This allows the study to know each risk's likelihood of occurring and its impact thereof.

For an accurate assessment of risk, it is important to differentiate uncertainty from risk, because it is important to separate factors that cannot be measured from those that can (Knight, 1921) as the impact of risk needs to be quantified. Uncertainty is difficult to manage because it cannot be measured or quantified easily, thus the need first to quantify the risk in this study. Murmann and Sardana (2013) believe that there is a third term that needs to be defined when discussing the concepts of decision making and risk which capture some important aspects left out by economists when defining risk. It is ambiguity, but for this study, it is not necessary because the conceptualisation of risk and uncertainty covers the scope of this study (Murmann & Sardana, 2013).

The next section explores different theories to determine a theory that underpins this study.

2.2 Theoretical Foundation

In building a conceptual framework for an integrated risk assessment model, this study draws from the work of several scholars who advocate for an integrated approach to entrepreneurship research. This study integrates endogenous and exogenous risk factors in an attempt to explain their relationship and effect on SME success. We first discuss the theoretical underpinnings of the integrated approach, followed by the theoretical foundations for the individual risk factors.

2.2.1 Integrated Approach

The concept of integration is the central concept in this study. For this purpose, the study combines complex theory with the work of Daniel Isenberg (entrepreneurship ecosystem), Evita Milana (systems perspectives), and GEM conceptual framework conditions as the theoretical foundation for integration. “The nature of the relationship between the environment and the small firm or various aggregations of small firms is a complex issue and not explained by any single substantive theory” (Fuller & Moran, 2001, p. 58). These are the perspectives that guide the study’s integration framework.

Complexity Theory is an interdisciplinary theory that grew out of systems theory in the 1960s. Wiklund et al. (2009) posit that it can be beneficial in theory building in entrepreneurship and the small business domain because it advocates for integration rather than disjoint research. He applied this theory in his study on building an integrative model for small business growth and produced a model that is interdisciplinary and multilevel in nature (Wiklund et al., 2009).

Complex theory locates itself within complexity science. Complexity science is an emerging interdisciplinary study of a variety of complex systems in the natural and physical world, including in social sciences. At organisational and other levels, the population of small businesses seems to resemble that of complex adaptive systems. Some of the features that are similar to small business population and entrepreneurship research are interdisciplinary, multilevel, post-positivist, interactive and the emphasis that the entrepreneur should be at the center of the research process (Fuller & Moran, 2001). These are the same features presented in this study on the integrated risk assessment model. There are five ontological layers in the small firm domain.

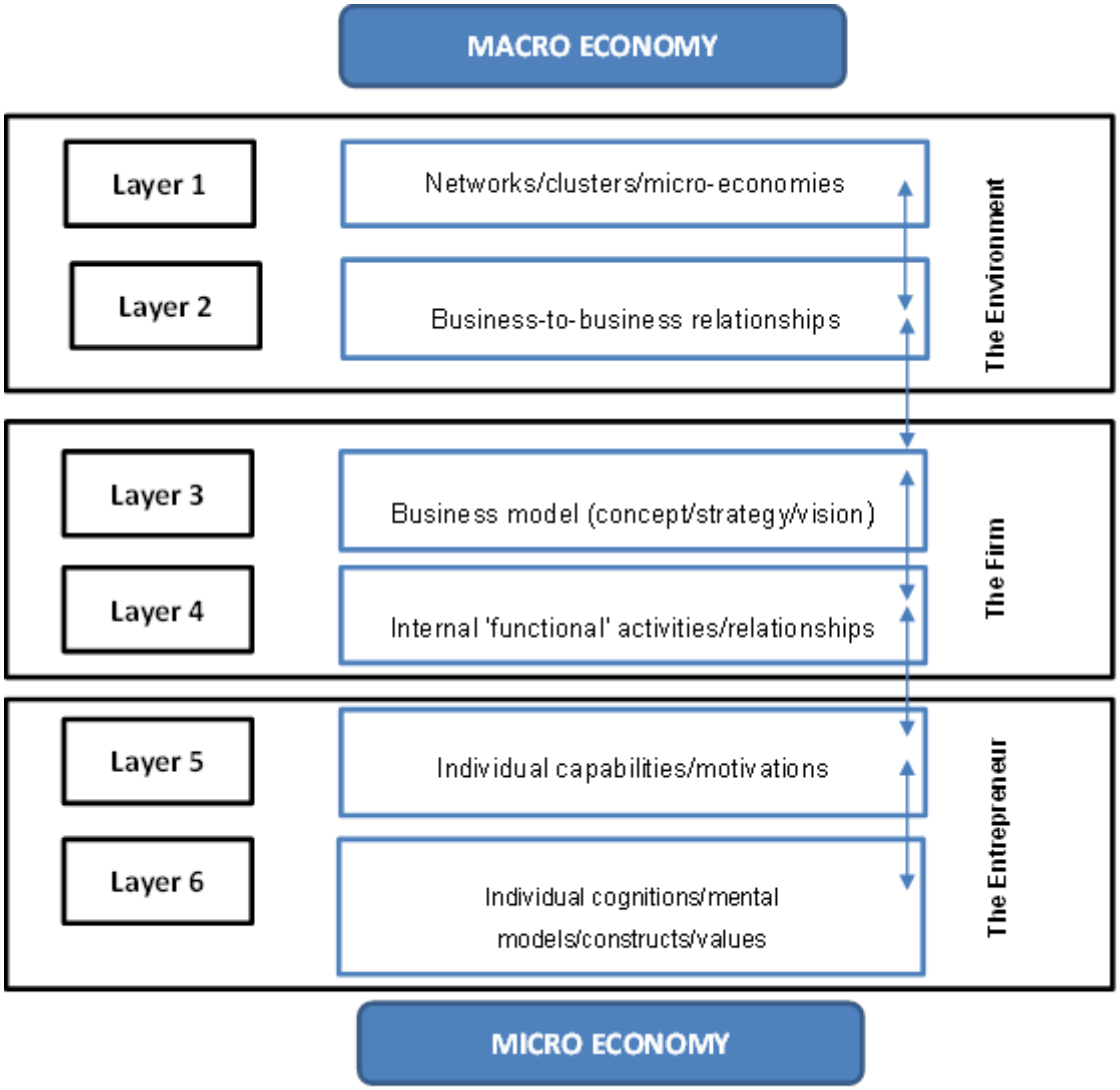


Figure 2.1: Ontological layers in the small firm domain

Source: Fuller and Moran (2001, p. 54)

Entrepreneurship Ecosystem refers to the collective and systemic nature of entrepreneurship. Daniel Isenberg argues that entrepreneurship does not happen in a vacuum, but it needs a conducive environment where all the elements in the ecosystem need each other. The entrepreneurial ecosystem consists of interdependent elements that can be grouped into six domains:

[1] A conducive culture
[2] Facilitating policies
[3] Availability of dedicated finance

[4] Human capital
[5] Venture-friendly markets for products, and
[6] A wide set of institutional and infrastructural supports.

Four of the six domains from Isenberg are used in the development of the integrated model for this study. The risk perception of a conducive culture and facilitating policies, the availability of finance and human capital (Isenberg, 2011)

System approach provides a platform to bring a holistic and multidisciplinary approach to entrepreneurship. Entrepreneurship extends beyond the economic domain and has become interdisciplinary (Watson, 2013). The system thinking approach supports complex theory and an entrepreneurial ecosystem approach but adds value by bringing in the interdisciplinary interdependencies and interrelationships. In order to build an effective entrepreneurship ecosystem that will produce successful SMEs, the understanding of the components and assessment indices of such a system is vital (Mason & Brown, 2014; Milana et al., 2016) thus the development of this study's conceptual framework.

GEM Framework recognises that entrepreneurship is part of a complex feedback system from inputs, through activity to outputs, and finally outcomes and impacts. The framework is consistent with risk management theories of outcomes and impacts. The GEM model has evolved to provide the big picture, holistic approach with social, cultural, political and economic context. Though the GEM framework is emphatic on the external conditions, it still advocates for a holistic approach (Mike & Penny, 2016). Some of the components of revised GEM conceptual framework are:

[1] Social
[2] Cultural
[3] Political
[4] Economic context

Therefore, the integration of the entrepreneur, the firm and the environment is backed by the above scholars. The following section explores the underlying theories for each risk variable.

2.2.2 Independent Approach

Each of the risk variables under study is underpinned by different theories; the study explores those theories though the analysis takes an integrated approach. However, the relationships between the variables are supported by various perspectives.

The entrepreneur: Since the entrepreneur is at the center of this research, the study spends more time exploring the theories that underpin it. Cognitive science is an interdisciplinary science that draws on many fields, including neuroscience, psychology, philosophy, computer science, artificial intelligence, and linguistics (Thagard, 1996). This study draws specifically from psychology when analysing the entrepreneur since it deals with human behaviour to understand the entrepreneurial behaviours that lead to small business success. Two factors in cognitive science look at human behaviour which is neuroscience and psychology. This is done by looking at the processes that lead to particular behaviours (de Holan, 2014). This study looked at both these fields of study and found that drawing from psychological studies (cognitive theory) is ideal and more beneficial for the context of this research than neuroscience.

Neuroscience scholars believe that neuro-entrepreneurship can add value in advancing the understanding of how entrepreneurs think and make decisions. Neuro-entrepreneurship is the application of neuroeconomics tools and methods to entrepreneurship research (Nicolaou & Shane, 2014). Neuro-entrepreneurship theory states that entrepreneurship research should be person-centric since the firm does not make decisions, but rather the entrepreneur (Martin de Holan et al., 2013). The discussions in this study do not take a neurological perspective but rather a cognitive /psychological view but embrace the concept that is emphasized by this field, of making entrepreneurship studies person-centric.

Cognitive theory. It is a theory of psychology that attempts to explain human behaviour by understanding the thought process. In order to analyse and understand entrepreneurs' decisions and behaviours that lead to success, it is crucial to understand their cognitive processes and how they categorise business situations in terms of risks and opportunities (Robert A. Baron, 2004; Urban, 2012). The focus of this study is on risks in relation to sustaining and growing a successful business rather than risk taken to start a new venture and identify opportunities, which is usually what most literature (Wiklund & Shepherd, 2003) in entrepreneurship focuses on.

The conceptual framework looks at cognitive elements such as self-efficacy, cognitive styles and heuristics to explain different aspects of entrepreneurial behaviour and decision making (Sánchez, Carballo, & Gutiérrez, 2011). The cognitive approach is critical because it assists this study to understand entrepreneurial behaviour, decision making, and SME success. There are many studies (Caliendo, Fossen, & Kritikos, 2011; Hollenbeck & Whitener, 1988; Wright, Kacmar, McMahan, & Deleeuw, 1995) that focus on personal traits when looking at entrepreneurs' behaviour. This study, however, believes that personal traits are a difficult concept to analyse in the entrepreneurial context and it cannot be changed or adapted to respond to external entrepreneurial factors (Urban, 2012).

The following sections review the literature for the outcome variables and the predictor variables, looking at the different relationships that exist.

2.3 Success of South African SMEs

SME success is an outcome variable which this study explains and predicts by integrating endogenous and exogenous risk factors. Most of the time studies that try to explain and predict SME performance tend to examine the individual, organisational and environmental level variables independently of each other.

Scholars in the entrepreneurship literature have proposed that these three levels be integrated in order to provide a more comprehensive predictive model of SME success (Baum et al., 2001).

Success is due to a series of independent acts like a great idea, great staff, and knowledge on how to market the business, financial capital, entrepreneur cognitive style, and understanding of current economic conditions. These are the elements of endogenous and exogenous risks which this study investigates. The performance of SMEs can be influenced by both endogenous and exogenous factors (Beck, 2007), thus the need to understand the kind of relationship they have with SME success.

Business success is defined as the realisation of worthy intentions by a business. These intentions could be improved profits, increased assets, expansion and all other factors signalling growth and development of business (Xesha, Iwu, & Slabbert, 2014). The definition of business success is multidimensional; it includes growth and financial performance indicators. Conventionally, business success is described based on financial performance indicators (Wiklund, 2006) and this study evaluates both.

Some studies argue growth is a good measure of success since growth is a clear indicator of success and is measured by variables, the information for which is easy to access. It is also argued that one of the reasons that make sales growth the best measure of performance is because it can capture both short and long-term changes in the business. Success in this study includes financial performance and growth which are both performance indicators (Baum et al., 2001). The variables measured include economic and financial growth (i.e. revenue, staff, office space, assets, etc.) (Dahlqvist, Davidsson, & Wiklund, 2000).

Financial performance is sometimes measured by profitability which includes a healthy cash flow and both gross and net profit. Profitability can sometimes be an ambiguous measure and it, therefore, needs to be used with other measures because sometimes when a business is in a growth stage, profitability can decrease because of the high injection of capital towards growth. The underlying assumption when measuring growth on the selected SMEs is that their business concepts have already been proven to be viable. Not all scholars agree on a suitable indicator for small business performance.

Therefore, this study chose to measure both financial performance and growth since each of them measures specific attributes of the small business progress which cannot be easily measured by the other. As Wiklund (2006) argues, if both indicators are used together, they will give a richer description of firm performance than when each is used independently. Researchers emphasise growth in sales as the best measure of growth, and this study uses both indicators.

Table 2.2: Two types of performance measures

GROWTH (G)	FINANCIAL PERFORMANCE (FP)

• Sales (Volumes)
• Employment
• Assets
• Market share
• Office space
• Growth rate compared to competitors
  o Sales
  o Market value
	• Revenue (Rands)
	• Profitability
	• Gross Margin
	• Cash flow
	• FP Compared to competitors
	  o Profits
	  o Cash flow

Source: Wiklund (2006)

It is critical to this study to first analyse the correlation between growth and performance indicators before using them as one measure of success. This is to ensure that there is no inverse relationship between growth and financial performance, especially in cases where small firms decide to trade off growth for profitability or vice versa for a certain period of time. Some studies assume that as the business grows, the financial performance does too**.**

Some studies measure growth about the industry trends, for example, whether sales growth deviates substantially from competitors or not, but these indicators are not used in this study to keep the number of variables minimal since the study is focusing on multiple constructs.

Some scholars posit that entrepreneurial/SME success comes because of the entrepreneur characteristics (trait) and some argue that is as a result of economic conditions (opportunities) (Markman & Baron, 2003; Vecchio, 2003). Research shows that both these school of thoughts are correct, though there are some questions regarding the reliability of some of the results obtained since some are not conclusive enough.

This study argues that to get better results, these two types of research need not be exclusively independent of each other. The integration of all the dimensions; the individual, context and environmental factors, would benefit the field significantly. This study develops an integrated risk assessment model framework to constitute all these factors at different degrees, using complex theory as the premise for the central arguments.

Borrowing from the on-going psychology conversations, the entrepreneur is a key determinant of a small business performance or entrepreneurial success (Herron & Robinson Jr, 1993). The argument of this study is that since the entrepreneur is key in the business performance/success, therefore, there is a need to have the risk that emanates from this accounted for in the risk assessment model for small businesses. Most risk assessors who assess the viability and likelihood of success of small businesses seem not to put enough emphasis on this risk while it is so key. This study posits that the probability of the entrepreneur impacting on the success of the small enterprise by more than 50% is very high and this needs to be ascertained.

After the SME success model is developed by integrating endogenous and exogenous risk factors, it will be operationalised as a framework to assess and quantify risk levels of an enterprise. The following section focuses on the identification and classification of the variables that are predominant in literature and affect SME success.

2.4 SME Risk Identification and Classification

This section demonstrates how each construct and risk variable used to develop the conceptual framework is selected. Since each risk factor discussed in this study has multiple variables, it is, therefore, important to have a methodology and some criteria to choose the perceived important variables to analyse. This is done by identifying common risks and classifying them as either endogenous or exogenous risk factors.

In a nutshell, the objective of this section is threefold:

[1] First, to identify SME risks that are predominant in the entrepreneurship literature and then assume that these risks are the ones that significantly affect the likelihood of SME success;
[2] Second, to categorise each as either endogenous or exogenous risk factors and point out whether this is within the entrepreneur or government control and
[3] Third, to select key variables from each category that are eligible for use as variables in the conceptual framework.

Table 2-3 and Table 2-4: To achieve this end, risk tables are compiled to consolidate different studies on similar constructs. Each risk category/factor comprises multiple variables. It is impractical to try and study the interaction of all these variables. Therefore only a few critical risks are selected from each risk category and explored in detail. The selection criteria assume that the risk factors that are predominant and have the highest frequency in the literature reviewed are the risks that have the highest likelihood of occurring, have high impact and devastating consequence and therefore are the focus of this study.

Conventionally, risk management practice is such that after risks have been identified, they need to be measured and classified as a critical risk, important risk or insignificant risk. The classification helps regarding allocating enough resources and time to the critical risks and less to the insignificant risks. It also helps when predicting the likelihood of success so that the critical risk variables are not excluded in the assessment model and are given the right ranking (Altman & Sabato, 2007).

Critical risks (highest impact) are those that lead to bankruptcy/closure if a small business is exposed to them. This study posits that the entrepreneur related risks (cognitive styles and self-efficacy) and firm based risks (i.e. finance and planning) falls under this category, thus the focus on these risks and the high ranking given to them on the model. Important risks (medium impact) are those that will cause financial strain if the SME is exposed to them and it will need to borrow funds externally to fulfil their obligations. Insignificant risks (low impact) are those risks that do not pose a significant threat to the SME; the SME can still operate even after being exposed to this kind of risk (Howard & Jawahar, 2002). However, it is critical to note that any of these risks can move from one level to the next thus changing the significance and impact of that specific risk in a specific company in a short period under high-risk environments.

Table 2-3 and Table 2-4 detail all the risk variables identified in the literature as key SME risks. Each of the identified risks is categorised as either endogenous or exogenous risk factors in column 1. Column 2 specifies whether that risk factor is within the control of the entrepreneur or the government. Column 3 shows the number of times that specific risk has been identified as a key risk in the literature reviewed.

Column 4 shows the different risk variables within the same risk category and the last column indicates some of the authors reviewed who have identified that particular risk as a key risk in their findings or literature. Table 2-3 is focusing on literature specifically on endogenous risk factors and specifying whether they are controlled directly or indirectly by the entrepreneur.

Table 2-4 is focusing on the literature reviewed specifically on exogenous risk factors, and whether they are controlled by the entrepreneur or by other external factors.

Risk category refers to exogenous and endogenous risk factors, and within these two categories, there are three levels, the firm, the entrepreneur and the environment which the study refers to risk factors. Furthermore, of the three risk factors, there are risk variables (i.e. entrepreneurial self-efficacy, government policies and business planning)

Table 2.3: Classification of endogenous risk factors in SMEs

Risk Factors	Entrepreneur (Yes/No)	Frequency	Description of Risk Variables	References
Endogenous (Entrepreneur)	Yes **CRITICAL**	**30**	**Entrepreneur characteristics** (Decision making, alertness, behaviour, risk attitude, cognitive process, self-confidence, innovation, capacity to respond to uncertainties, intuition, motivation)	(Barbosa, Kickul, & Smith, 2008; Baron, 2004a, 2004b, 2008, 2009; Baron & Tang, 2011; Baron & Ward, 2004; Begley & Boyd, 1988; Busenitz, 1996; Busenitz & Barney, 1997; Caliendo, Fossen, & Kritikos, 2009, 2011; Entrialgo, Fernández, & Vázquez, 2000; Herron & Robinson Jr, 1993; Kaish & Gilad, 1991; Kahneman, 2011; Kanellos, 2013; Karahan & Okay, 2011; Kennedy & Tennent, 2006; Malone, 2004; Markman & Baron, 2003; Mbogo, 2011; McKelvie, Haynie, & Gustavsson, 2011; Norton Jr & Moore, 2002, 2006; Psaltopoulos, Stathopoulou, & Skuras, 2005; Reynolds, Camp, Bygrave, Autio, & Hay, 2001; Seeletse, 2012; Smit & Watkins, 2012; Tang, et al., 2012; Urban, 2012; Valliere, 2013; Zahra, Fahimeh, & Kambeiz, 2012)
Endogenous (Entrepreneur)	Yes **CRITICAL**	**19**	**Human Capital-Experience, Skills and Education** (Lack of business and financial management skills, manager/entrepreneur unpreparedness, training) **Lack of Staff skills and training** (No qualified or skilled personnel, HR-cannot compete with big business for salaries to attract skilful people)	(Baron, 2009; Bates, 1990; Cooper et al., 1994; Crook, Todd, Combs, Woehr, & Ketchen Jr, 2011; Dani, Idrus, Nimran, & Sudiro, 2013; Gaskill, Auken, & Manning, 1993; Gompers, Kovner, Lerner, & Scharfstein, 2006; Gries & Naudé, 2011; Howell & Boxx, 1974; Karahan & Okay, 2011; Kirsten, 2013; Kirzner, 1982; Martin, McNally, & Kay, 2013; Mbogo, 2011; Olawale & Garwe, 2010; Palich & Bagby, 1995; Rungani & Fatoki, 2010; Seeletse, 2012; Unger, Rauch, Frese, & Rosenbusch, 2011; Vidal, 2012; Zahra et al., 2012)
Endogenous (The Firm)	Partly Yes **CRITICAL**	**17**	**Finance** (lack of funding, under capitalisation, cash-flow, start-up capital, structure of initial funding, lack of access to credit, cost structure, profits, debtors, loans)	(Alabi, Alabi, & Ahiawodzi, 2007; Chen, Yao, & Kotha, 2009; Dunn & Liang, 2011; Fatoki & Odeyemi, 2010; Haswell & Holmes, 1989; Kennedy & Tennant, 2006; Maier II & Walker, 1987; Mbogo, 2011; Olawale & Garwe, 2010; Olawale, Roberts-Lombard, & Herbst1, 2010; Olawale & Smit, 2010a, 2010b; Pollinger, Outhwaite, & Cordero-Guzmán, 2007; Psaltopoulos et al., 2005; Rungani & Fatoki, 2010; Seeletse, 2012; Tajnikar & Pušnik, 2008)

Risk Factors	Entrepreneur (Yes/No)	Frequency	Description of Risk Variables	References
Endogenous (The Firm)	Yes **CRITICAL**	**10**	**Planning (**written business plan understood by entrepreneur/planning)	(Brinckmann, Grichnik, & Kapsa, 2010; Chen et al., 2009; Chwolka & Raith, 2012; Dani et al., 2013; Dunn & Liang, 2011; Estes & Savich, 2011; Gibson & Cassar, 2005; Perry, 2001; Thompson, Bounds, & Goldman, 2012; Zwerus, 2013)
Endogenous (The Firm)	Yes	6	**Lack of adequate technology and efficient systems and operations** (inadequate inventory control; High input vs. low output; too many activities for low profit)	(Kanellos, 2013; Seeletse, 2012; Sohn & Jeon, 2010; Tajnikar & Pusnik, 2008; Yallapragada & Bhuiyan, 2011)
Endogenous (The Entrepreneur)	Yes	5	**Mentorship** (business support/government support, consultants, entrepreneurship mentors)	(Armstrong, 2008; Duggan, 2009; Mullins, 2008; Peel, 2008; Schwartz, 1999)
Endogenous (The Entrepreneur)	Yes	2	**Commitment** (entrepreneur working part-time or full-time)	(Breugst, Domurath, Patzelt, & Klaukien, 2012; Petrakis, 2011)
Endogenous (The Entrepreneur)	Yes	3	**Motive** (reason for starting an SME – necessity, opportunity or innovation)	(Block, Sandner, & Spiegel, 2013; Simon & Shrader, 2012; Tyszka, Cieślik, Domurat, & Macko, 2011)
Endogenous (The Firm)	Partly Yes	4	**Sales** (local sales)	(Gaskill et al., 1993; Lensink, Van Steen, & Sterken, 2005; Maier II & Walker, 1987; Yallapragada & Bhuiyan, 2011)
Endogenous	Yes	5	**Marketing and advertising**	(Finscope, 2010; Gaskill et al., 1993; Percy, Visvanathan, & Watson, 2010; Vidal, 2012; Yallapragada & Bhuiyan, 2011)
Endogenous (The Firm)	Yes	5	**Products and service**s (lack of innovation, inferior products or service)	(Baron & Tang 2011; Gaskill et al., 1993; Kunttu, 2013; Seeletse, 2012; Teng et al., 2011)
Endogenous (The Firm)	Yes	2	**Client base** (depend on one client and relationship with client)	(De Carolis, Litzky, & Eddleston, 2009; Finscope, 2010)

Risk Factors	Entrepreneur (Yes/No)	Frequency	Description of Risk Variables	References
Endogenous (The Firm)	Yes	4	**SME growth** (over expansion/ premature growth)	(Gaskill et al., 1993; Greening, Barringer, & Macy, 1996; Kunttu, 2013; Liesch, Welch, & Buckley, 2011)
Endogenous (The Firm)	Yes	2	**Suppliers** (bad vendor relations, high prices, no credit terms, late deliveries, stock availability)	(Ellegaard, 2008; Gaskill et al., 1993)
Endogenous (The Firm)	Partly Yes	3	Inadequate **location**	(Greening et al., 1996; Psaltopoulos et al., 2005; Webb, Bruton, Tihanyi, & Ireland, 2012)
Endogenous (The Firm)	Yes	5	**Customers** (customer dissatisfaction or poor customer relations)	(Brockman, Jones, & Becherer, 2012; Finscope, 2010; Seeletse, 2012; Teng et al., 2011; Yallapragada & Bhuiyan, 2011)
Endogenous (The Firm)	Yes	3	**Employee dissatisfaction**	(Kanniainen & Leppamaki, 2009; Román, Congregado, & Millán, 2013; Seeletse, 2012)

Table 2.4: Classification of exogenous risk factors in SMEs

Risk Factors	Government (Yes/No)	Frequency	Description of Risk Variables	References
Exogenous	Yes **IMPORTANT**	6	**Government policies and regulation**s (BBBEE, political interference, compliance)	(Everett & Watson, 1998; Finscope, 2010; Peel, 2008; Rotger, Gørtz, & Storey, 2012; Teng et al., 2011; Turton & Herrington, 2012)
Exogenous	Yes	5	**Macroeconomic factor**s (interest rate, inflations, currency)	(Altman, Sabato, & Wilson, 2010; Everett & Watson, 1998; Olawale & Garwe, 2010; Shepherd, Douglas, & Shanley, 2000; Van Gelderen et al., 2006)
Exogenous	Yes	3	**Industry** (Union power, political interference)	(Burns, Peters, & Slovic, 2012; Kanniainen & Leppamaki, 2009; Zhou, 2013)
Exogenous	Yes	2	**Level of economy** (developing, rural or urban)	(Bahareh, Seyed Mehdi, Azita, & Masoumeh, 2013; Everett & Watson, 1998; Finscope, 2010; Pooe & Mafini, 2012; Psaltopoulos et al., 2005)

Risk Factors	Government (Yes/No)	Frequency	Description of Risk Variables	References
Exogenous	Partly Yes	1	**Tenders** (tenderpreneurship, unfair tender processes, corrupt procurement systems)	(Finscope, 2010; Zhou, 2013)
Exogenous	Partly Yes	1	**Competition** (unfair competition between small business and big business)	(Chirani & Hasanzadeh, 2013; Cox & Hollander Jr, 1975; Finscope, 2010; Kirzner, 1978)
Exogenous	Partly Yes	1	**Criminal** effects	(Seeletse, 2012)
Exogenous	Yes	1	Poor **infrastructure**	(De Carolis et al., 2009; Seeletse, 2012)
Exogenous	Partly Yes	2	**Perceived entrepreneurial risk** (negative perception towards SME's capacity to deliver quality, no external funding)	(Kanniainen & Leppamaki, 2009; Norton Jr & Moore, 2006; Psaltopoulos et al., 2005; Van Gelderen et al., 2006)

Table 2-3 and Table 2-4 findings summarised: From the literature reviewed as per Table 2-3 and Table 2-4, 26 risks have been identified: Seventeen (17) endogenous, and nine exogenous risk variables. The main reason for classifying the risks as either entrepreneur or firm related is to show how important the entrepreneur is in the entrepreneurship process. The entrepreneur has a certain level of control and influence, either directly or indirectly, over the 17 risks from the endogenous risk factor category. These statistics put the entrepreneur at the center of entrepreneurship and make him key to the success of the SME (Kirzner, 2009; Schumpeter, 2000).

This implies that the entrepreneur must manage about 65 percent of the SME's total risk exposure because they are within the entrepreneur's control. A person needs to have strong cognitive abilities and self-efficacy (Murmann & Sardana, 2013) to be able to manage so many variables. This notion is supported by Bandura's social cognitive theory and self-efficacy studies (Bandura, 1994, 2012).

This is consistent with CMS's findings in Malone's (2004) paper, which shows that 81.4 percent of risk is within the entrepreneur's control. There are four risks that have a frequency of 10 or more in Table 2-5, which this study assumes to be the top critical risks to be used as a foundation for the conceptual framework.

Table 2.5: Frequency table-key risk variables selected for assessment

Risk Category/Factor	Focus	Frequency	Frequency >10 critical
Entrepreneur (49)	Entrepreneur characteristics (cognition, self-efficacy)	30	Critical
	Human capital (owner manager)	19	Critical
Endogenous (27)	Access to finance	17	Critical
	Planning and strategy	10	Critical
Exogenous (6)	Government policies and support	6	Important

Table 2-5 provides a summary of Table 2-3 and Table 2-4, evidence that confirms that the underlying causes of SME failure are predominantly internal, unsystematic and are at the firm level. Firm-based risks are risks within the entrepreneur's control and mostly are because of management decisions and actions (Everett & Watson, 1998). This finding suggests that the decision-making process and style are important for this study to identify how owners of successful SMEs think and make their judgement and choices (Murmann & Sardana, 2013).

Most scholars agree on the risk factors of SMEs, though each scholar tends to focus on a particular type of risk in isolation, neglecting the impact of the cumulative effect (Kennedy & Tennent, 2006). Table 2-5 provides this study with the list of risk variables to be used as the foundation of the theoretical framework and to be tested individually and simultaneously with other risk variables. This exercise helps this study to develop an integrated risk model by operationalising the dependent variable success.

Everett and Watson (1998) argue that though most researchers put an emphasis on firm-based risk only, the economy-based risk has also proven to be significant. Following from Everett and Watson's view, this study includes economy-based risk in the model and does not focus only on firm-based risk as most scholars do. Though external factors are not considered critical risks, according to the definition of critical risks in this study, they are still included in the model to provide the study with a holistic view. External factors are classified as important risk (Everett & Watson, 1998).

This approach helps to prevent overvaluing insignificant risks and undervaluing critical risks (Yilmaz & Flouris, 2010). Currently, endogenous risks (business plans and financial projections) are given a higher weighting at the expense of entrepreneur risks that are critical (Brink et al., 2003). This study argues for an integrated approach that takes into consideration both external and internal factors in one model, whether those factors emanate from the economic or psychological field.

It is very important to be aware that the risk profile of a small business cannot be a mirror image or smaller version of a big business risk profile. Thus the need to have risk tools customised for SMEs because they have their own dynamics which can be diverse (Altman & Sabato, 2007). “Banks also realize that small and medium-sized enterprises (SMEs) are a distinct kind of client with specific needs and peculiarities that require risk-assessment tools and methodologies specifically developed for them” (Altman, Sabato, & Wilson,2010, p. 2).

This is one of the reasons this study has decided to develop a model that is SME and SA specific. The reason for banks continuing to use old models, suitable for big business, needs to be ascertained. The risk factors identified and listed in Table 2-5 are used to develop the foundation for the conceptual framework of the integrated risk assessment model for SMEs in SA.

The following sections explore the risk variables identified from the three risk factors, the environment, the firm and the entrepreneur.

2.5 Exogenous Risk Factors - The Environment

The term ‘exogenous’ refers to risks that arise due to events occurring outside the business. They are external sources of risk, which are beyond the entrepreneur’s control. Hence they are difficult to predict, and the probability of their occurrence cannot be determined with accuracy (Danielsson & Shin, 2003). Some factors that can give rise to such risks are economic, natural and political factors. Some authors refer to exogenous factors as uncertainties rather than risks, because they are normally random, difficult to measure and diversify (Gartner & Liao, 2012) and their probabilities are unknown (Knight, 1921).

The environment in which SMEs operate affects both the entrepreneur and the firm. Population ecology models suggest that the environment has a direct effect on firm performance regardless of strategic choices (Wiklund, 2006). It is, therefore, imperative to analyse the effect of external factors and all their uncertainties on the decision-making process of the entrepreneur (Turton &

Herrington, 2013). A supportive and conducive environment is critical for any business to strive and to enhance the confidence of entrepreneurs to succeed.

Managing a successful small business is mainly about managing the 80% over which the entrepreneur has control. The entrepreneur has full control of endogenous risk factors which are the entrepreneur himself and the firm. The other 20% is what is referred to as exogenous risk factors, which are external factors that the entrepreneur has minimal or no control over (M. Malone, 2004).

Though the entrepreneur cannot change factors that relate to politics, economy, and socialisation how he handles those factors is key. The entrepreneurial self-efficacy and perception of the entrepreneur about his surroundings determine how he frames the issues around him and how he responds to them (Norton Jr & Moore, 2006). Since the entrepreneur does not have control of what happens in his environment, this study will not measure exogenous risk factors but rather investigates risk perceptions of the entrepreneur about the environment (Podoynitsyna, Van der Bij, & Song, 2012). The literature on political factors, government support and policies is now considered because these are the factors that affect the perceptions of the entrepreneur.

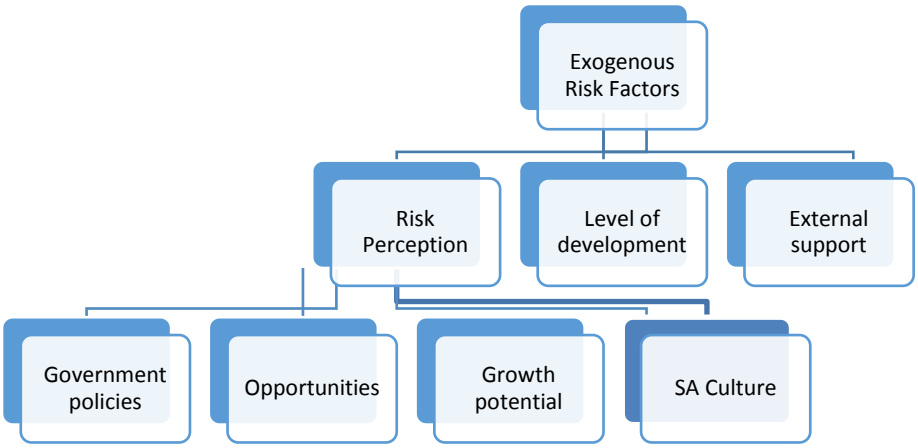


Figure 2.2: Pictorial view of Exogenous Risk Factors

Source: Researcher's own model developed based on Table 2-4

Political factors arise from changes in ruling parties, government policies and regulations, which may affect the profitability and position of an SME. For instance, changes in SMME policy and regulations have a significant impact on SMEs because they have no capacity to diversify and change as these factors change (Bera, 2009). SA is rated among the worst in the world in terms of labour efficiency due to its inflexible dismissal requirements, uncompetitive minimum wages, and bureaucracy costs. These are some of the things that SMEs cannot afford and do not have capacity and resources to deal with them. The government incubator support programmes are more concerned about quantity rather than quality and sustainability (Turton & Herrington, 2013)

It is important for SME risk assessment models to take into consideration the effect of government policies, which require broadening to ensure that funding is made available to small businesses that have a higher likelihood of success because these policies contribute towards creating an environment conducive to SMEs. Government support, in the form of funding and development, is another area that propels the SME sector in the right direction, thus the need to assess its impact on the success of the SME (Turton, & Herrington, 2013).

2.5.1 Risk Perception

It is defined as the assessment of the risk inherent in a situation which informs the risk behaviour of the entrepreneur which are the decisions made with varying degrees of uncertainty. This is sometimes referred to as risk assessment; assessment and perception are therefore used interchangeably. Drawing from categorisation theory, this section explains how entrepreneurs assess their environment. Entrepreneurs assess risk differently from non-entrepreneurs, and this is what makes entrepreneurs seize opportunities and expand their businesses (Norton Jr & Moore, 2006).

The probability of assessing situations better increases if the entrepreneur has prior information, whether educationally or experientially, and even better if both. This supports the Bayesian theory that posits that *informative prior x current data= the decision maker's assessment.*

The way the entrepreneur perceives an environment affects that entrepreneur's risk behaviour. While risk perception is defined as a decision maker's assessment of the risk inherent in a situation, however, risk behaviour is defined as decisions taken under uncertain environment with uncertain outcomes (Sitkin & Weingart, 1995)

Entrepreneurs are very optimistic individuals in the way they frame situations to make them assess the environment more favourably with more opportunities and fewer threats and perceive their firms to have more strengths than weaknesses (Palich & Ray Bagby, 1995). This study argues that maybe this very thing that makes entrepreneurs is the very thing that breaks them. Looking at the high failure rate of SMEs, it is possible that entrepreneurs use unrealistic subjective risk assessments models. Future research needs to assess whether the same heuristics and biases that make entrepreneurs fail are the same ones that make them succeed later. Most entrepreneurs concur that they had started businesses several times and failed before they succeeded. The question is what have they changed cognitive style, planning or perception or just got lucky, but for now the focus is on their risk perceptions because the other questions are not within the scope of this study.

H1: *There is a positive relationship between RP and BS_F*

2.6 Endogenous Risk Factors – The Firm

Internal risks arise from events taking place within the business and are generated within the system due to day-to-day operations. These kinds of risks can be predicted, and the probability of their occurrence can be determined with a certain level of ease (Vos, 1992), that is why the entrepreneur can control them to a certain extent. The entrepreneur can minimise the probability of these risks occurring (Murmann & Sardana, 2013), some risks can even be eliminated, and others can be transferred. The various internal factors giving rise to such risks are technology, physical and human factors (Danielsson & Shin, 2003).

It also includes the business operations, the efficiency of the internal systems in the business, the business planning and strategy and the capacity of the business to raise and manage financial capital. The focal variables for this section are business planning and financial capital which are the units of analysis. The firm itself cannot be analysed directly because it is a multi-layered complex structure which makes it an inappropriate unit of analysis (Wiklund et al., 2009).

Figure 2.3 shows a pictorial view of the risk variables selected for analysis from firm and entrepreneur risk factors. The firm level constitutes financial capital and business planning while the individual level (entrepreneur) includes entrepreneurial self-efficacy, cognitive styles and human capital.

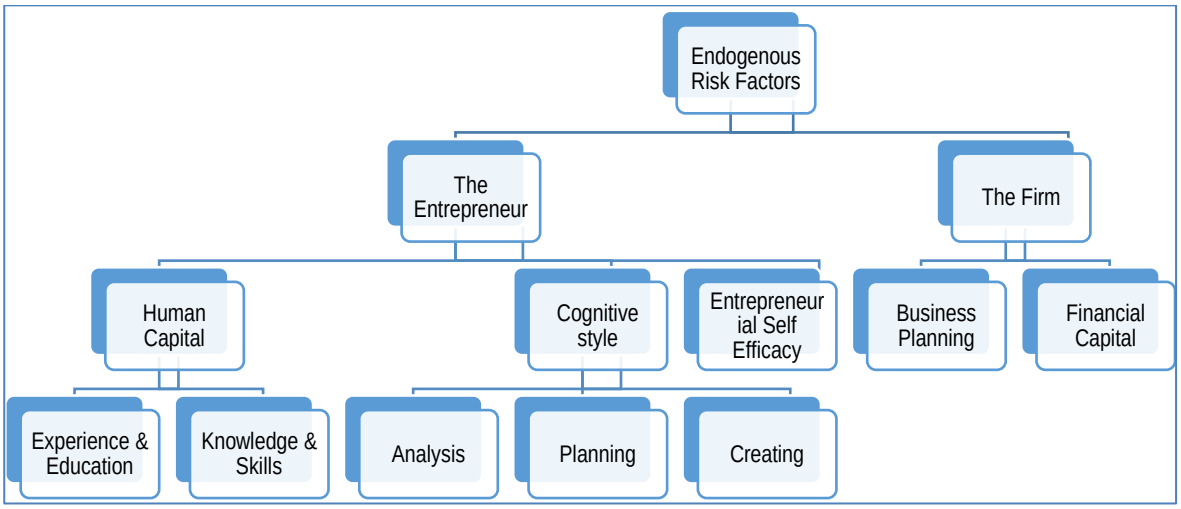


Figure 2.3: Endogenous risk factor variables

Source: Researcher's own model developed based on Table 2-3

2.6.1 Financial Capital

This is a key risk factor, 'no capital no business'. Several authors agree that lack of finance is a major problem and is one of the top three reasons small businesses fail in South Africa (Cassar, 2004; Mike Herrington, Kew, Kew, & Monitor, 2010; Mike & Penny, 2016). There is a strong positive relationship between funding and SME success which has been established by most research in entrepreneurship (DTI, 2008; Finscope, 2010; Makina, Fanta, Mutsonziwa, Khumalo, & Maposa,

2015). All other factors that contribute towards the success of an SME, their contribution will only be feasible if there is funding to implement or execute. Access to finance, which includes start-up, working and growth capital, is important (Beck & Demirguc-Kunt, 2006; Fatoki & Odeyemi, 2010).

When entrepreneurial risk is perceived as high, it becomes difficult for entrepreneurs to raise funds and the proportion of external funds in the start-up capital turn to decrease. However, with the right skills, the level of education and experience, the entrepreneur will be in a better position to raise funds (Psaltopoulos, Stathopoulou, & Skuras, 2005) even under those difficult circumstances. Commercial banks perceive start-ups as riskier if the owner manager's level of education is low and s/he is inexperienced. Once an SME is perceived as high risk by investors, this leads to exposure of the business to liquidity risk where the SME does not have enough cash flow to meet its financial obligations (Stan-Maduka, 2010).

The owner's education/knowledge and experience/skills are a key determinant of how much finance the bank will be willing to extend to the SME and is key to the survival of the business (Bates, 1990). A survey done by Fatoki and Odeyemi (2010) shows that about 75 percent of applications for bank credit by new SMEs are rejected in SA and only 2% are approved by the banks. Their findings show managerial competencies as one of the reasons why applications are rejected.

Another attribute that helps in raising capital is passion, which helps entrepreneurs to keep going, even during hard times; it keeps them motivated (Cardon, Sudek, & Mitteness, 2009). Entrepreneurs who are passionate can persuade investors because of their animated facial expressions, energetic strong body movements and rich body language (Breugst, Domurath, Patzelt, & Klaukien, 2012). This is what these scholars believe, but to what extent this kind of passion can help the entrepreneur with funding is not explicit in their studies and this study believes this still need to be ascertained or validated with empirical data in South African context.

This is consistent with the finding from the South African GEM report (Turton & Herrington, 2012) in which experts posit that there is sufficient funding in the marketplace; however, it is not easily accessible to small businesses, thus the recommendation to review the current funding models. GEM cites government policies, finance, and education as the top three constraining factors in the small business sector. This research's view is that these factors need to be considered in conjunction with the entrepreneur's cognitive style and human capacity, especially how the cognitive capacity compensates for the other risk factors, that is why they are included in this study as key risk factors to be assessed.

Funding should be directed to SMEs that are run by owner-managers who have the capacity and qualities since they stand a better chance of succeeding than those that do not have these characteristics. Those that do not qualify should be put into entrepreneurship training or mentorship programmes first before being granted funds to start and run a business. Literature confirms that SMEs need a risk assessment model that takes a holistic, integrated view (Botha et al., 2015; Nadkarni & Barr, 2008) that include entrepreneur, endogenous and exogenous risk.

H2: *There is a positive relationship between FC and BS_F*

Both the environment and the firm are risk factors that need to be managed by the individual. Thus the next section looks at the risks that arise because of the interaction of the entrepreneur with the environment and the firm.

2.6.2 Business Planning

The internal activities of the firm are controlled by the entrepreneur. The quality of the business plan and strategy depend entirely on the capacity of the entrepreneur. Therefore, the overall success of the firm depends mainly on the capacity of the entrepreneur. There is a relationship between the business planning, strategy and the firm's performance (Howard & Jawahar, 2002).

Since small businesses are always in a growing mode by nature, this requires a lot of planning and flexibility from the entrepreneur. Most small businesses do not formalise the process of business planning into a written plan, which has a negative effect on the business's performance. Those businesses that have written plans normally have them because of funders' requests, but never use them as a guide to operating their businesses (Chwolka & Raith, 2012; Gibson & Cassar, 2005; Perry, 2001). The business plan has to take into consideration all aspects of the business and the entrepreneur should have strategic planning skills to be able to prepare it (Zwerus, 2013).

The real risk lies in the implementation rather than the preparation of the document. This is where most of the risk assessment models fail. The objective of the business plan is first, to assist an entrepreneur to decide whether to enter the market or not (viable business idea) and second, to make day-to-day decisions on how to manage the business. Quality business planning is vital for both new ventures and established small businesses (Brinckmann, Grichnik, & Kapsa, 2010) in order to make correct decisions.

Funders, consultants, mentors and all involved with small business need to change the way they assess business plans. Key areas to assess when deciding whether the business is viable and sustainable are the entrepreneurs' capacity to understand and implement the plan rather than the existence or availability of the plan. Once the business planning is completed, the plan should be used to determine how much money the business needs to start and operate and to manage the day-to-day cash flows. There is value in having and using a business plan in small businesses (Brinckmann et al., 2010; Perry, 2001).

This study posits that if the entrepreneur did not write the business plan (in terms of content and ideas), then it is useless to have a business plan that is written and understood by a consultant, because if one cannot write it, then he cannot understand it and therefore, he cannot implement it. Therefore, this research collects and analyses data based on who prepared the plan, can the entrepreneur understand and implement the plan rather than the availability of the business plan (Perry, 2001).

H3: *There is a positive relationship between BP and BS_F*

2.7 Endogenous Risk Factors – The Entrepreneur

The whole entrepreneurial process starts and ends with the entrepreneur. There is no entrepreneurship without the entrepreneur because the entrepreneurship process is an action oriented construct (Bandura, 2001). The understanding of the entrepreneur's role in the risk model can only begin when one understands the behaviour of the entrepreneur. Moreover, the behaviour can only be understood when one understands the underlying factors that manifest themselves in the behaviour and actions.

The behavior can be analysed well using human behavioural studies. The literature on human behaviour can be found in both neuroscience and cognitive theories since they are both interested in the mind of the person and in this case, of the entrepreneur (Beugré, 2010). The only difference between these two fields of study is that neuroscience focuses more on the brain activity (very technical and physiological) while cognitive studies focus more on the observable manifestation of the brain activity (Martin de Holan, Ortiz-Terán, Turrero, & Alonso, 2013) which is behaviour, thus the focus on cognitive psychology.

Entrepreneurship as a concept does not exist without the human agency, the entrepreneur. Entrepreneurship process depends entirely on the entrepreneur who makes the entrepreneurial decisions to undertake the process (Shane, Locke, & Collins, 2003). The researcher, therefore, argues that any study that focuses on other entrepreneurial factors without consideration of the entrepreneur lacks the key factor that makes the process valid.

In building the integrated risk assessment model that is unbiased, the researcher starts by analysing the magnitude of the effect and impact of the entrepreneur towards the success of the SME. The belief is that the entrepreneur should contribute more than 50% in the model towards the success of the SME, thus the inclusion of the entrepreneur in this study's risk model.

Entrepreneur risk factors are risks that arise due to the entrepreneur's actions, styles, and abilities. Investors, experienced successful entrepreneurs, venture capitalists, prominent academic researchers, experienced mentors and consultants involved with small business are almost all in agreement, the key determinant of small business success is the entrepreneur (Herron & Robinson, 1993).

There is overwhelming evidence in the literature that supports this observation, as illustrated in Table 2-3 and Table 2-4where at least 30 studies focusing only on entrepreneur characteristics are reviewed and cited. Therefore, this research postulates that the entrepreneur is a critical risk factor to be assessed when evaluating the likelihood of success of a small business (Herron & Robinson, 1993). The literature further confirms that most of the SME risks are within the entrepreneur's control. A few key variables related to the entrepreneur are studied, which contributes in developing the conceptual framework that is person-centric**.**

There are a plethora of studies that focus on personal traits when looking at the antecedents of SME success (Caliendo et al., 2011; Entrialgo, Fernández, & Vázquez, 2000; Karahan & Okay, 2011). Personal traits are defined by psychologists as enduring characteristics of an individual, manifested in a consistent behavior in a wide variety of situations (Herron & Robinson, 1993, p. 282). Some of the personality dimensions that personal trait studies look at are needs for achievement; the need for autonomy; self-efficacy; risk taking and locus of control which are usually referred to as the big five. These traits can also be found in other individuals who are not entrepreneurs and are not consistently displayed as suggested by the former scholar. The difference between entrepreneurs and non-entrepreneurs is not their personality, but their way of thinking (Robert A Baron, 1998; Baum & Locke, 2004; Hai Yap & See Liang, 1997), especially in an entrepreneurial context.

These then does not differentiate entrepreneurs from non-entrepreneurs, and it might make it difficult to analyse. This study supports the view that the individual's dispositional factors should be analysed in a context that is entrepreneurial task-specific to reach conclusions that are specific to entrepreneurs.

Measurement instruments have been developed to measure different entrepreneur attributes (i.e. alertness, passion, motivation, cognition, and confidence) (Busenitz, 1996; Tang, Kacmar, & Busenitz, 2012; Valliere, 2013) and these measures need to be used under entrepreneurial task-specific environments. The personal traits have a causal effect on SME performance, according to Hollenbeck and Whitener (1988). Personal traits are difficult to study and analyse in the entrepreneurial context because they are not consistent enough to be observed in all entrepreneurial tasks.

Previous studies have failed to link personal traits to performance because the direct link is very weak. Personal traits are mediated by motivation, moderated by entrepreneurial management abilities and modified by the context, hence the weak direct link (Herron & Robinson, 1993). Based on the above observations of inconsistency, this study does not focus on personal traits as a construct but rather on cognitive styles, self-efficacy and human capital because they can be measured, changed or learned through programmes such as the frame of reference. Trait-based research has been criticised intensely in the entrepreneurship literature because of very disappointing results in previous studies (Shane et al., 2003) thus the focus on cognitive elements in this study.

The objective of this section is to answer the question, to what extent does each of the entrepreneur's risk variables contributes towards the success of the SME. The few entrepreneur risk variables that this research focuses on are;

[1] ***Cognitive styles (CS) -*** this part investigates the three dimensions of CS which is knowing, planning and intuition. The relationship of cognitive styles and their effect on SME success is examined;

[2] ***Entrepreneurial Self-efficacy (ESE)*** - The relationship and effect of the elements of entrepreneurial self-efficacy on SME success is examined

[3] ***Human capital (HC) -*** the discussion focuses on how education, skills, experience and prior knowledge enhance SME success and how strong that relationship is.

2.7.1 Cognitive Styles

***Defining cognitive style*:** Looking at all the different definitions cited by Cools and Van den Broeck (2007) from different scholars, it is evident that these scholars agree on the conceptualisation of cognitive styles. Cognitive style is defined as a preferred and habitual/consistent way that different individuals organise, represent and perceive or process information and experience (Cools & Van den Broeck, 2007).

The objective of this section is to understand how the cognitive styles of the entrepreneur impact on the success of the SME. The cognitive profile of the decision maker plays an important role in the success of the SME, thus the need to focus on cognitive style. Cognitive abilities are usually the underlying factors that make a person behave and act in a particular way (Urban, 2012). The question to answer is which cognitive style is used the most by successful entrepreneurs when making business decisions that lead to successful SMEs? (Murmann & Sardana, 2013).

By answering this question, this study is able to show the relationship between cognitive styles and SME success. This study, therefore, hypothesises that successful entrepreneurs use both intuitive and analytical styles when making decisions depending on the environment. The understanding of the different cognitive styles should add value in this study regarding understanding how entrepreneurs learn, solve problems, make decisions, become creative and even perceive risks and opportunities (Kahneman, 2011).

Different scholars categorise cognitive styles differently. Cools and Van den Broeck (2007) use a three-dimensional model to label them as knowing, planning and creating. However, Kahneman (2011) uses a two-dimensional model which is analytical and intuitive. The three-dimensional cognitive style is an extension or refinement of Kahneman's two-dimensional model, according to this study's observation. For this study, Kahneman's two-dimensional model is the focus and is adopted as the foundation of this research's discussions on cognitive styles, but

for ease of data collection, the three elements are used to measure Kahneman's intuitive and analytic styles.

The sections to follow investigate how these different styles affect the self-efficacy and the decision-making process (judgement and choices) of the entrepreneur. The literature on entrepreneurship that has its roots in cognitive psychology posits that there is a relationship between cognitive style and SME success. In this study, the understanding of the kind of relationship that exists between the entrepreneur's cognition and SME success is key in the development of the risk assessment model. There are several key elements to analyse when looking at the cognitive abilities of an entrepreneur.

First, this study discusses the different cognitive styles adopted from Kahneman's two-dimensional model which he calls system one (fast) and system two (slow) (Kahneman, 2011). These two styles are all about how a person thinks and how resources are used to make decisions. Thereafter the study looks at the three-dimensional model which is knowing, planning and creating to expand the two dimensional model. Table 2-6 lists some of the differences between the two cognitive styles from the two-dimensional model.

Table 2.6: The two dimensional model – Analytic-intuitive

System 1 (Automatic)	System 2 (Effortful)
Intuitive	Analytical
Fast thinking	Slow thinking
Spontaneous	Deliberate
Heuristics/systematic errors	Reasoning
Impulsive and emotional	Self-control
Experiencing self	Remembering self

Source: Kahneman (2011)

Table 2-6 presents some of the characteristics of intuitive and analytic cognitive styles. In this section, we evaluate which of the two styles entrepreneurs possess, is it intuitive or analytic or both and if both, what combination. This study believes that the entrepreneur needs to have or use a certain degree of each of the two cognitive styles depending on what phase the business is in. Moreover, this leads to a need to investigate the magnitude of each of these key elements. Both these styles have their advantages and disadvantages; they can be catastrophic to a business, especially a small business with limited resources. In an attempt to simplify the measure of a different kind of cognitive style, the three-dimensional model is used during the survey (Cools & Van den Broeck, 2007).

For example, an entrepreneur who is looking at opportunities to start a business and the one who already has one, but wants to expand will need to apply different styles or some form of a combination of the two. When the business is a start-up and still looking for opportunities, the analytic “system two” will be required more than the intuitive “system one” because there is a lot of research and planning that need to happen at the beginning.

This seems to be consistent with the three-dimensional model that will be looked at later in this section; research fits the knowing styles and planning fits planning style. However, when the entrepreneur has been in business for at least more than three years, most decisions would be made intuitively, based on acquired experience, and this can fit the creative style. The longer the experience, the less time needed to think and plan, therefore inexperienced entrepreneurs should use more of system two and experienced entrepreneurs’ system one because they can recognise risks and potentially easier.

2.7.1.1 Discussing System one and two in detail

The automatic system 1: It is the origin of many systematic errors and biases. It is the one that provides the impressions that often turn into one’s belief which is the source of one’s actions and decisions. This automated system operates mainly on the subconscious mind of the entrepreneur. It is used as a default without effortful thinking or consciously deciding to use it.

Though this system can have a lot of biases, heuristics, and unchecked reactions, it can also be a very useful system with tools needed when quick decisions are required. For example, if a decision needs to be made quickly by an expert, he can use his intuition to make a more accurate decision, and this is referred to as expert intuition (Murmann & Sardana, 2013).

To use this system optimally, the entrepreneur needs to be aware of both the benefits and the negatives. It should be used interactively with system two to keep the balance and reduce systematic errors. Some of the good features about system one are that it allows entrepreneurs to make quick decisions without having to go through detailed analysis before action can be taken, especially when fast-moving business opportunities present themselves. This kind of thought process helps entrepreneurs in the early stage of their business so they can act fast when they see an opportunity. System one is at its best when combined with the entrepreneur's level of education, experience, and skills in entrepreneurial task related activities. Intuitive system one helps with opportunity identification.

The effortful system 2: Its main function is to monitor and control thoughts and actions suggested by system one. It is up to system two to decide whether to allow those suggestions to be expressed directly or modified or just suppress them. This style is a very important tool for entrepreneurs because it assists them regarding controlling their behaviours, monitor and control thoughts and actions.

Most people shy away from this system because it is time-consuming and most of the time it limits creativity, flexibility, and spontaneity. This system is more about thinking, analysing and reasoning things out. Moreover, because of that, it is very helpful with planning effectiveness. Everything is a deliberate and conscious effort. If these systems are used interactively as indicated earlier, the entrepreneur can reduce the risk of failure and missing opportunities (Barbosa, Kickul, & Smith, 2008).

There are a number of studies that focus on the two dimensional model which is consistent with Daniel's system one and two model, and different scholars label it differently; analysis/intuition, analytic/non-analytic, analytic/holistic, logical/non-logical and rational/intuitive (Cools & Van den Broeck, 2007; Murmann & Sardana, 2013). All these labels are some of the elements that differentiate system one and system two and the discussions about these differences started way back in the 1930's.

Table 2.7: The three-dimensional model: Knowing-Planning-Creating

ANALYTICAL		INTUITIVE
Knowing	**Planning**	**Creative**
Facts	Sequential	Possibilities
Details	Structured	Meanings
Logical	Conventional	Ideas
Reflective	Conformity	Impulsive
Objective	Planned	Flexible
Impersonal	Organised	Novelty
Rational	Systematic	Subjective
Precision and methodical	Routine	Inventive and Creative

Source: Cools and Van den Broeck (2007, p. 363)

Table 2-7 present the different characteristics of the three-dimensional cognitive style model which consist of knowing, planning and creative style. The knowing and planning style can easily be categorised under Kahneman's analytic style as one factor. Because people with these two styles tend to like details and want to know exactly the way things are and retain most of the data and its facts. Those with planning style also tend to organise the facts they have at hand to maintain a well-structured environment.

The creative style though seems to be different and is more intuitive, irrational and inventive which fits well the automatic system one (Kahneman, 2011). Entrepreneurs are individuals who see opportunities where everyone else sees problems, as stated earlier in this study when defining entrepreneurs. This is how the creative style is described and thus this study hypothesises that the results from the survey will reflect this characteristic for successful entrepreneurs.

H6a: *There is a positive relationship between CS_I and BS-F*

H6b: *There is a positive relationship between CS_P and BS-F*

2.7.2 Entrepreneurial Self-Efficacy

Conventionally under general circumstances when people talk about confidence, they talk about self-confidence rather than self-efficacy. Here, the study looks at the differences between the two constructs, their conceptualisation, and deep meaning to demonstrate the importance of using entrepreneurial self-efficacy for the context of this research.

Self-confidence: Every entrepreneur needs to have self-confidence to start and run a successful SME. There is a link between self-confidence and SME success**.** How does self-confidence contribute towards the success of an SME? When starting a new business, the entrepreneur will need to get support from different institutions and people. Therefore he needs to believe in his or her business idea and capabilities to convince clients to buy his/her product, financial institutions to fund the business and suppliers to grant him credit.

Shay and Wood (2004) find that black South Africans lack the self-confidence to start and run their own businesses (Gwija et al., 2014) and this is partly the reason for the low TEA rate and high failure rate. Self-confidence is a general construct that is not specific to entrepreneurship, and it might be difficult to measure its effect to entrepreneurial success, thus the introduction of entrepreneurial self-efficacy (ESE). ESE has a richer meaning in this context than self-confidence or general self-efficacy.

Entrepreneurial self-efficacy: This is one of the key determinants of SME success. Entrepreneurs who have a high level of entrepreneurial self-efficacy (ESE) have a higher probability of starting and running a successful SME because of their strong belief in their abilities. Self-efficacy gives them motivation and strength to persevere and put more effort in entrepreneurial challenging tasks (Bandura, 1994). Motivation and self-confidence inform the quality of decisions taken, which improves the chance of getting finance that leads to either a successful or an unsuccessful SME. These two variables usually play a mediating effect on SME success (Tyszka, Cieślik, Domurat, & Macko, 2011).

Entrepreneurs who are motivated, and confident have a higher chance to succeed because they have the will power to stay on and sustain their efforts and businesses.

Defining self-efficacy - It is described as the individual's core belief in his ability to influence and regulate situations and events that affect his/her life (Bandura, 1994). Self-efficacy can be classified as either general self-efficacy (GSE) or entrepreneurial self-efficacy (ESE) (Urban, 2006). Self-efficacy is a task specific construct which involves behavioural control (Chen et al., 1998). This study sums it up in three words: competency, efficiency, combined with self-confidence that is SE. Self-efficacy has predictive power and it gives a promise of domain specificity. Since it is task specific, this study focuses specifically on ESE rather than GSE. ESE refers to the strength of a person's belief that he or she is capable of successfully performing the various roles and tasks of entrepreneurship.

It is more than just self-confidence; it involves the capacity to use multiple skills to organise and integrate courses of action to serve innumerable entrepreneurial tasks. Entrepreneurial self-efficacy is the core motivation and drive for entrepreneurs to start their own businesses because of the strength of their belief in their ability to deal with prospective challenging situations of their business (Bandura, 1982, 2012).

ESE is action focus; it goes beyond belief to execution. ESE consists of five elements which can serve as strong predictors of entrepreneurial intention but in this study, it is used to specifically predict entrepreneurial success or performance. The ESE elements are marketing, innovation, management, risk taking and financial control, but innovation and risk-taking are the key primary entrepreneurial capabilities. These ESE elements are consistent with the focus of this study on risk factors key to the success of an entrepreneur and the SME. The effects of ESE should not be evaluated in isolation, but in conjunction with other key factors like availability of resources, opportunities and obstacles in the environment which influence ESE and performance.

Higher self-efficacy has been proven to motivate entrepreneurial entry though it may not always enhance performance (Chen et al., 1998). This study believes that it can also motivate entrepreneurs to grow successful SMEs. Motivated entrepreneurs who are passionate are more likely to grow their businesses and sustain them than those who are not (Miner, 1990). The source of the entrepreneur's motivation should come from within; it must be endogenously created. The entrepreneur's passion, motivation, and his attitude towards life will be evident in the way he thinks and makes decisions.

Operationalising ESE: The independent variable is entrepreneurial self-efficacy since the study wants to focus on measuring confidence specific to entrepreneurial tasks. ESE has several elements, but there are two key primary entrepreneurial capabilities which are innovation and risk taking perception and these two are also measured and used to evaluate the relationship with SME success. It is also important to determine what motivates the entrepreneur since entrepreneurs with high ESE are expected to be highly motivated.

H5a*: There is a positive relationship between ESE-Management and BS-F*

H5b*: There is a positive relationship between ESE-Finances and BS-F*

H5c*: There is a positive relationship between ESE-Growth and BS-F*

2.7.3 Human Capital

The objective of this section is to first evaluate the extent of the relationship between the human capital of the entrepreneur and SME success. Secondly, how the interactive relationship between human capital and other risk factors affect the performance of an SME. Human capital is defined as knowledge and skills that individuals acquire through investment in schooling, on-the-job training and experience. The human capital theory assumes that people attempt to receive a compensation for their investment in human capital (Unger, Rauch, Frese, & Rosenbusch, 2011, p. 343).

This theory has been adopted in entrepreneurship literature. Human capital variables include education, experience, skills and knowledge. Superior human capital improves the capabilities of an entrepreneur, to better plan, easily learn new information, raise capital and manage the business (Hartcher et al., 2003). Several scholars have argued that there is a significant relationship between human capital and success (Bates, 1990; A. C. Cooper et al., 1994) and that relationship has been well established. Investing in human capital can be costly and can take time, but it is key to the sustainability of the business, particularly at the managerial level (Mitchelmore & Rowley, 2010).

The current management and risk literature classify human capital as an endogenous risk; this study argues that this can be further sub-classified as entrepreneur risk because this risk emanates from the actions of the individual/entrepreneur and staff in the business. Human capital includes the capacity of both owner-manager and staff, who are the most common source of endogenous firm based risks (Howard & Jawahar, 2002). In this research, the emphasis and attention are more on the entrepreneur who is running and managing the SME than the staff/employees. Skilled individuals have the capacity to effectively and efficiently run an SME to succeed.

Applied psychology research on individual job performance argues that there is a strong relationship between human capital and firm performance. This argument is consistent with both human capital theory and resource base theory (Crook, Todd, Combs, Woehr, & Ketchen Jr, 2011). Strategic management and entrepreneurship literature also follow the same view. This argument is applicable in the small business environment; the human capital and performance of the entrepreneur and staff will significantly affect the performance of the SME. It is critical to mention that the relationship between human capital and SME performance can be influenced by other moderating factors like strategy, sound business practices and the appropriate conditions (Crook et al., 2011). It is therefore, very important to be mindful of moderating and mediating effects when measuring the relationship between HC and SME success.

This study explores the unique contribution of the different risk factors since several researchers (Bates, 1990; Crook et al., 2011; Mbogo, 2011; Unger et al., 2011) have established the relationship and effect of human capital to firm performance though there is no consensus yet on the magnitude. Though there are differences in terms of the extent of the relationship due to moderators, the relationship exists and is significant. Some of the moderators that are investigated in resource-based theory are path dependence, firm-specific versus general human capital, and operational versus global firm performance measures. Crook et al.'s (2011) findings show that the relationship between human capital and organisational performance is mediated by operational performance as indicated in Figure 2.4 below. This is consistent with Unger et al. (2011)'s findings that human capital has a stronger relationship with SME success if the output of human capital acquired is transferred to the SME's operations or daily tasks.

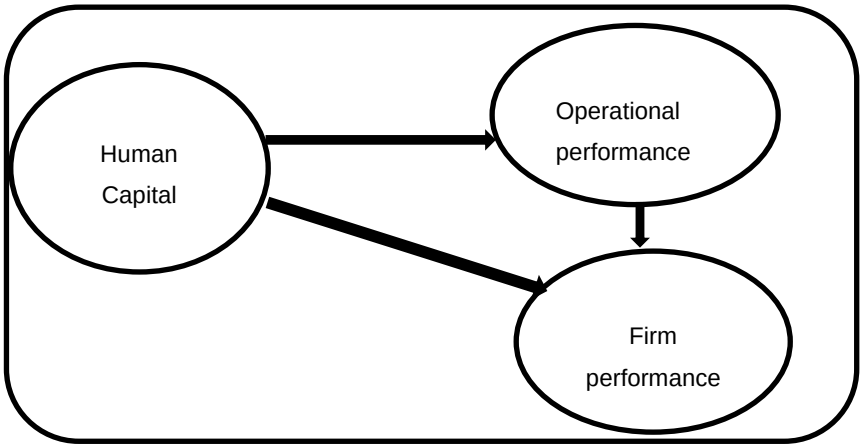


Figure 2.4: The relationship between human capital and firm performance

Source: Crook et al. (2011, p. 451)

2.7.3.1 Education and Experience (HC Input)

Education can either be formal or informal, where formal includes schooling (primary, secondary/high and tertiary education) and informal includes working experience and training. Education and experience are direct human capital investments, their effect on success is lower when compared to outcomes of HC investment (Unger et al., 2011). The direct HC investment is referred to as HC input in this study. Education and experience do not necessarily translate to knowledge and skill. In practice, investors put more value on education and experience when assessing the viability of an SME, but the view of this research is that emphasis needs to be put more on knowledge and skills because research has shown that it has a stronger relationship with SME success than education and experience (Brink et al., 2003).

Education and experience are merely the number of years a person has spent doing something, but it cannot be directly linked to and quantified as knowledge and skill. Entrepreneurs with the same experience and qualification do not necessarily have the same level of knowledge and skill (Crook et al., 2011). Studies that focus on experience (number of years) and education (qualifications) (Bates, 1990) make a few assumptions which might not be necessarily correct, first, they assume that the number of years in schooling or in a job is equivalent to the amount of knowledge acquired, second, they assume that the knowledge acquired is relevant to the current entrepreneurial task and last, they assume that the presumed knowledge will be transferred to the current task (Shane, 2000). Knowledge and experience are said to be as good as its execution. There are no well-defined measurement scales in literature for knowledge and skills and that is why most studies use education and experience as proxies for the HC output.

FinScope's (2010) survey emphasises the importance of management's level of education. The high failure rate of SMEs in SA is partly explained by the 66 percent of entrepreneurs who do not have matric, see Figure 2.5.

The 2011 South African GEM report also confirms that lack of education and experience are obstacles for small business growth and success (Von Broembsen, Wood, & Herrington, 2012). This study argues that this should be looked at in conjunction with entrepreneurial education, skills, and knowledge because general education and experience alone do not necessarily translate to good business practice and success.

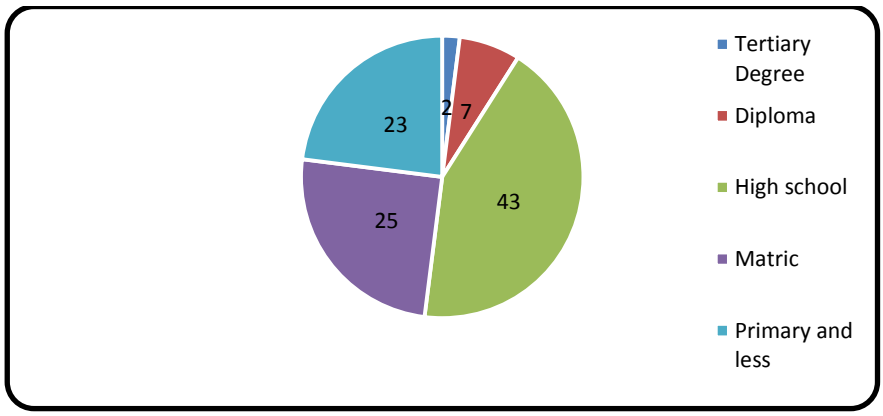


Figure 2.5: Level of education of entrepreneurs is SA

Source: Finscope (2010)

Bates (1990) identifies owner level of education and financial capital as key determinants of firm survival. He further describes human capital inputs as a variable that partially causes financial capital inputs and he postulates that these two are the true predictors of firm survival. The above authors confirm the importance of education and experience which is consistent with this research's hypothesis, though this research differs in terms of the extent in which these variables can predict the success or failure of an SME if measured in isolation from other risk factors, human capital variables, and other moderators.

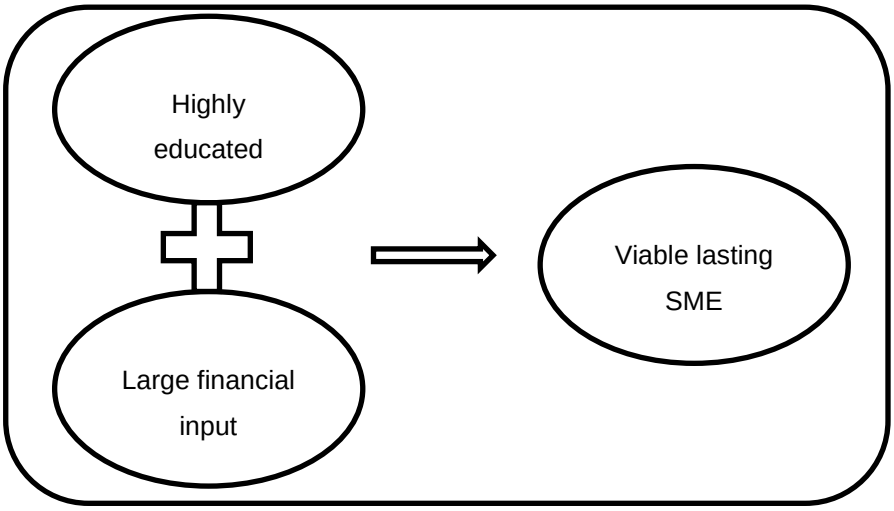


Figure 2.6: Input factors that can predict the viability of an SME

Source: Bates (1990)

Experience is viewed as an important determinant for entrepreneurial start-up success (Gompers, Kovner, Lerner, & Scharfstein, 2006). In this research, experience is defined as the number of years spent on a task that gave the entrepreneur knowledge and skills to be used in the current entrepreneurial task. Experienced entrepreneurs understand entrepreneurial risk and this suggests that the cognitive processes of entrepreneurial human capital accumulation are very important in reducing perceived risks (Psaltopoulos et al., 2005). Over time, experience in the market should enhance the accuracy of forecasts and reduce the degree of uncertainty associated with venturing (Eisenhauer, 1995). It is important that the experience should be high task related and the effect to SME performance will be greater.

Prior start-up experience is one of those experiences that are key to the success of an entrepreneur. This experience is key even if the entrepreneur had started an SME before and failed. Failure can be one of the most important learning experiences that an entrepreneur needs for future success.

Though some people see failure as a negative and distressing experience, most successful entrepreneurs today will tell you that they have failed once or more in their journey while attempting to start and build a business. The probability of succeeding is higher for a person who has started a business before and failed than a person who has no prior experience at all. Most of the entrepreneurs and experts are of the view that failure is a good learning experience (Farmer, Xin, & Kung-Mcintyre, 2011).

Most institutions of higher education offer diplomas and degrees in entrepreneurship but what is lacking is practice that can give the entrepreneurs prior experience. Entrepreneurship education is supposed to provide entrepreneurs with entrepreneurial skills, attitudes, entrepreneurial mindset, concepts, and ability to recognise and exploit opportunities. It further improves the person's self-esteem and confidence to act where others are hesitant. Some scholars do not find a strong significant relationship between entrepreneurial education and entrepreneurial success, thus the current debate to review business schools' current entrepreneurial programmes to be more experience based (Karlsson & Moberg, 2013). The challenge in South Africa is that most of the graduates who studied entrepreneurship become employees rather than entrepreneurs which suggest a failure of the system to foster entrepreneurial mindset and confidence (Gwija, Eresia-Eke, & Iwu, 2014). Entrepreneurship literature maintains that education and related experiences can influence the individual's level of self-efficacy and in return, impact on entrepreneurial outcome (Arora, Haynie, & Laurence, 2013).

2.7.3.2 Knowledge and Skill (HC Output)

Knowledge and skill are outcomes of human capital investment. Highly knowledgeable entrepreneurs, with skills, are most likely to create firms that are successful and sustainable. This view is consistent with human capital theory. Skills and task-related knowledge seem to have more impact on the success of the SME than formal education (Unger et al., 2011). As an entrepreneur becomes more skilled, his demand for energy diminishes.

This results in the entrepreneur being able to have more energy to do more tasks than a normal unskilled person would. As a result, this benefits the SME because the entrepreneur will require less time to do certain tasks and will be able to switch from one task to another easily (Kahneman, 2011). The level of skill and knowledge of the owner-manager required in a small business is critical because it informs the direction the company will take in terms of decision making and strategy (Mbogo, 2011).

Using consultants and mentorship in those functional areas where the entrepreneur and the team have no skill and cannot afford to employ a full-time skilled or qualified person, is an available alternative to improve skills and capacity (Armstrong, 2008). This study argues that a combination or interaction of all the human capital variables (both investment and outcome) will produce a sustainable SME and increase the probability of that SME's growth and success.

Operationalising the HC risk factor: The questionnaire captured information on all the HC risk variables, and these were used to evaluate the relationship between all the four risk variables (education, experience, knowledge, and skill). These captured both general and entrepreneurial aspects of the HC variable. It is critical that the analysis does not exclude prior start-up experience irrespective of whether that prior experience resulted in a successful or unsuccessful business and this should also be able to show the risk-taking capacity of entrepreneurs with superior HC versus those with low HC. Once the relationships have been ascertained, then the magnitude of the effect of each variable towards the SME success will be determined. Human capital is the independent variable and SME success the dependent variable. This analysis should give the researcher critical information to improve the risk assessment model of SMEs.

H4: *There is a positive relationship between HC and BS-F*

2.8 Conceptual Framework

Proceeding from the literature reviewed and the theoretical foundations discussed in the previous sections, the study developed a conceptual framework that explains the critical role an entrepreneur plays in the success of a small business, this study develops a risk assessment model that is person-centric, multidimensional and holistic in nature (Nadkarni & Barr, 2008).

The independent variables that are used as the building blocks for the conceptual framework are; cognitive styles, self-efficacy, human capital, business planning, financial capital and environmental risk perception. These variables have been found from previous research to have either a strong and/or significant relationship with business success (performance or growth) by several studies in entrepreneurship thus their inclusion in this study's framework (Brink et al., 2003; Markman & Baron, 2003; Vecchio, 2003; Wiklund et al., 2009).

Business success and performance are synonymous in this study and the terms are used interchangeably. It is measured by financial performance and growth (Baum et al., 2001). The conceptual framework is based on the hypothesis that each risk variable in the framework differs in terms of the degree it impacts on the success of the SME since risk is all about two variables, impact and the likelihood of occurrence (Bera, 2009). Based on this study's understanding of risk it, therefore, suggests that the entrepreneur risk has the highest impact and a high likelihood of occurring. Drawing from several theories and disciplines, this study looks at the best way to assess different risk variables and develop a risk model. SME success is a function of all three levels; individual, firm and environment (Vogel, 2013).

$$y = f(w_1x_1, w_2x_2, w_3x_3)$$ ***.....statistical conceptual risk assessment model***

Where y=SME success; $w_{i\ (i=1,\ 2,\ 3)}$ *= weight;* x_1*=The Entrepreneur,* x_2*= The Firm and* x_3*= The Environment.*

The literature reviewed suggests that *capacity* combined with *context*, together with the *environment* will lead to a particular *behaviour* and that behaviour will result in a particular *outcome* called *success or failure*. This is the ethos of our conceptual framework.

The conceptual framework for entrepreneurship is usually derived from management, economic, psychological, cognitive and recently, even from neuroscience and biological concepts (Eisenhardt, 2013; Nicolaou & Shane, 2014; Omorede, Thorgren, & Wincent, 2014; Urban, 2012). Therefore, because of the multidisciplinary nature of entrepreneurship theory, it becomes difficult to discuss the theoretical roots of entrepreneurship by looking at only one discipline thus the adoption of complexity theory with the core from psychological concepts in this study (Fuller & Moran, 2001; Wiklund et al., 2009).

This study attempts to explain the magnitude of the effect of endogenous and exogenous risk factors in the success of SMEs, by understanding the role of the key risk factor, the entrepreneur. Therefore, the analysis of the behaviour, decision making and the interaction of the entrepreneur with the environment and the firm is key. This study therefore, draws intensely from psychological concepts mainly focusing on cognitive and social cognitive theory which are the theories that cover the critical variables on which this study is focusing (Bandura, 2011; Robert A. Baron, 2004).

The objective of this framework is to use the interactions, overlaps, and relationships within and between entrepreneur versus the firm and entrepreneur versus the environment to determine the SME's likelihood of success and produce a model for SME risk assessment. Figure 2.7 Illustrates the relationships between different risk factors and variables of which most do not have unidirectional relationships. The relationships in this model are complicated because one variable can affect another variable which is also affected by the same variable (Bandura & McClelland, 1977) and this is usually called a feedback loop. This model captures the dynamics of both micro (psychological) and macro (contextual) influences.

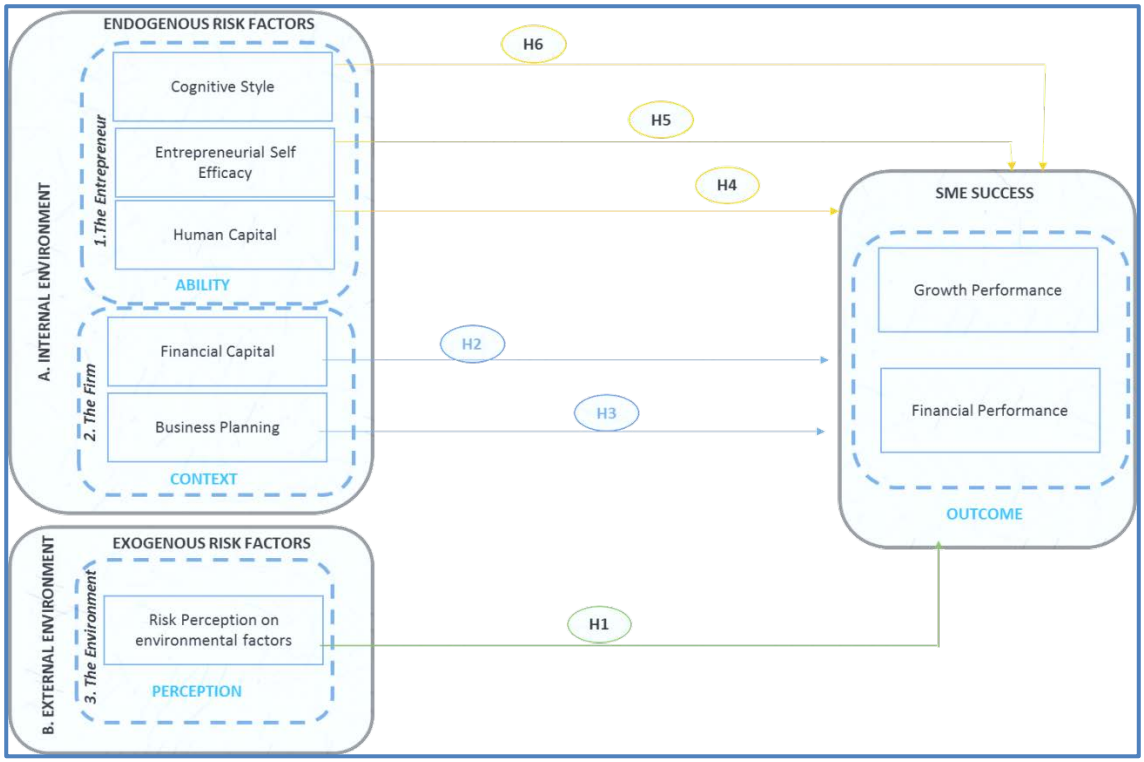


Figure 2.7: Conceptual framework of risk assessment model of SMEs in SA

Source: The researcher's own model developed based on literature reviewed (Baum et al., 2001; Dahlqvist et al., 2000; Fuller & Moran, 2001; Isenberg, 2011; Milana et al., 2016; Wiklund et al., 2009)

Figure 2.7 represents a framework describing the success of an SME in South Africa which is made up of three dimensions: [1] The entrepreneur - the person running and managing the SME; [2] The firm, the internal operational environment (planning and finance) and [3] The environment - the external environment where the firm is operating (operationalised as environmental risk perception). The model illustrates direct relationships only, Financial Capital is a mediator but not graphically presented in Figure 2.7. However, it is stated in Table 2-8 which summarised all the hypothesis to be tested.

2.9 Chapter Summary

The chapter started by definitions of the key constructs which are SMEs, entrepreneur, entrepreneurship, risk and uncertainty. It went on to explore the different theoretical foundations on which the study is based. Since integration is the cornerstone of this research, complex theory was adopted as a foundation for integrating entrepreneur, firm and environment risk factors.

The complex theory was used in conjunction with entrepreneurial ecosystem, GEM framework, and system perspective to integrate endogenous and exogenous risk factors. These perspectives, together with complex theory, state that entrepreneurship is a complex system operation in an ecosystem with interdependent components; it further states that entrepreneurship studies need to take a holistic approach that takes an interdisciplinary and multidimensional view.

The factors that are examined in this study are from two main risk categories, endogenous and exogenous risk factors. Endogenous risk factors are sub categorised into two levels, the firm and the entrepreneur. However exogenous risk factors have one level, the environment. Each of the three factors consists of several risk variables. A few variables were selected for each risk factor for further analysis. The entrepreneur risk variables are entrepreneurial self-efficacy, cognitive styles and human capital. The firm risk variables are business planning and financial capital. The environment risk variable is risk perception.

The relationships of each of these risk variables with the output variable (SME success) are examined. SME success refers to business financial performance and growth. The direct relationships between the risk variables and SME success are depicted in Figure 2.7 which represent the conceptual framework of the study. The conceptual framework is presented as an SME success model. However, it is explained and operationalised into an integrated risk assessment model framework for SMEs in South Africa.

These variables are operationalised to answer the study's research questions and address the problem of biased risk assessment models used to determine the

likelihood of success of SMEs. They enable the study to [1] To review the direct and indirect relationship of SME success with endogenous (the firm and the entrepreneur) and exogenous (the environment) risks in the SA context, [2] To determine the extent to which the integration of the three risk factors affect the likelihood of success of SMEs and [3] To quantify the magnitude of the effect of each risk factor on the risk assessment model of SMEs in SA and build a framework.

The table below summarises the research hypotheses illustrated in the pictorial presentation of the conceptual framework in Figure 2.7.

Table 2.8: Summarising research hypothesis

Hypothesis	Description
H1	There is a positive relationship between RP and BS_F
H2	There is a positive relationship between FC and BS_F
H3	There is a positive relationship between BP and BS_F
H4	There is a positive relationship between HC and BS-F
H5a	There is a positive relationship between ESE-Management and BS-F
H5b	There is a positive relationship between ESE-Finances and BS-F
H5c	There is a positive relationship between ESE-Growth and BS-F
H6a	There is a positive relationship between CS_I and BS-F
H6b	There is a positive relationship between CS_P and BS-F
H7	Financial capital mediates the relationship between entrepreneurial self-efficacy and financial performance
H8	Each risk factor has a significantly strong effect on SME success
H9	The integrated risk model should have better predictive power than individual regression models and explain more variability of the SME success
H10	The entrepreneur variables contribute or explain more than 50% of the variability in SME success
H11	The best conceptual framework should integrate all three risk factors in the model

3 CHAPTER 3: RESEARCH METHODOLOGY

The objective of this section is to discuss the methodological approach taken during the research process. This chapter covers the following key methodological concepts; the research paradigm, research design, data screening, the population and sampling, research instrument, the procedure followed when collecting data, how the data was analysed and interpreted, and lastly, the validity and reliability of the research instrument used.

3.1 Research Paradigm

Research paradigm refers to the set of beliefs that guide the researcher's actions (Lincoln, Lynham, & Guba, 2011). The philosophical assumptions that guide this study are based on the post-positivist philosophical orientation which is scientific in nature and usually takes the quantitative approach (Creswell, 2013). The ontology that underwrites this assumption postulates that the researcher is independent and does not influence the world out there (Blaxter, 2010).

This approach also assumes that reality is stable and can be observed and described from an objective point of view and that absolute truth can never be found. Post-positivists do not agree with the assumptions that positivists made about the absolute truth of knowledge and therefore argue that we cannot be positive about our claim of knowledge when studying the actions and behaviour of humans (Phillips & Burbules, 2000).

The advantage of this approach is its objectivity when analysing and interpreting data. Moreover, the deductive logical reasoning allows the use of current rules, assumptions, findings and theories to derive a conclusion and it also allows for data to be generalised (Creswell, 2013). Several studies in the social and behavioural sciences are moving from the positivist towards the post-positivist approach, and this is gradually becoming the convention (Alise & Teddlie, 2010; Ryan, 2006; Tashakkori & Teddlie, 2003). Therefore, this approach is consistent with studies in social and behavioural science, thus suitable for entrepreneurial or management studies.

3.2 Research Design

Research design in this study refers to the type of inquiry within the quantitative approach that dictated the procedure to follow during the study (Creswell, 2013). This method is a non-experimental quantitative, cross-sectional study using survey research methodology. It was an online self-administered questionnaire. According to Field (2009), surveys are the best and most used methods for quantitative studies. Some advantages include enabling the researcher to collect primary data in a short space of time, in this case, from South African SMEs (Field, 2009).

It is also cost effective, thus allowing the study to reach more entrepreneurs at once. There are a few disadvantages, such as common method bias and a lack of in-depth insight about the constructs under study against which the researcher needs to guard. The researcher used available techniques to assess and minimise the effect of such limitations (Creswell, 2013; Field, 2009).

When collecting data using questionnaires, there are ethical issues that need to be observed by the researcher. This study made sure that data was gathered in an ethical manner by obtaining participants informed consent, not wasting participants' time with long questions that were not going to be useful and clarifying the importance of this research.

Furthermore, the researcher ensured that the participants understood their role, knew that they are not obliged to participate and were assured that their information would be kept confidential and anonymous (D. R. Cooper, Schindler, & Sun, 2006). Lastly, the researcher applied for ethics clearance from the Wits ethics committee and got approval before administering the questionnaire. See attached copy in the Appendix A.

3.3 Research Population and Sampling Method

3.3.1 Research Population

The research population consisted of South African SMEs. The study was carried out in South Africa which has nine provinces, with both developed and under-developed areas. It has a large population, estimated at approximately 5.6 million small businesses, according to (Finscope, 2010) and just above 800 000 SMEs according to (DTI, 2008). Many studies have expressed how difficult it is to quantify the number of SMMEs in South Africa because this is divided into formal and informal business, some are registered, and some are not, thus making it difficult to quantify.

Therefore, the stated number of SMMEs is just an estimate which excludes some of the SMMEs which are not registered and cannot be accounted for (Ramukumba, 2014). It was impractical to try to observe or study each member of the South African small business population especially the informal, unregistered micro businesses and therefore, a sampling frame was developed.

SMMEs are defined based on the sector, number of employees, total gross asset value, and turnover in South Africa. Businesses are said to qualify as SMMEs if they have no more than 200 employees and have a turnover that does not exceed R50 million per annum. These two parameters are the main criteria used to decide whether a business is an SMME or not (South Africa, 1996).

The terms small business, SMME, and SME are used interchangeably by some researchers and official reports. For this study, the following criteria were employed, the business had to be registered, should have no more than 200 employees, must have a turnover less than R10mil and should have financial records (DTI, 2008; South Africa, 2004; World Bank, 2012).

3.3.2 Sampling Method

The sample was drawn from South African business organisations with national membership and social networking platforms. The reason for choosing South African business organisations with a membership that has national representation was to make the survey process less complicated, cost-effective and less time consuming while still getting access to SMEs from all nine provinces. The selection criterion for these business organisations was informed by the fact that the sample needed to be representative of all nine provinces thus representing the theoretical population which is SA SMEs.

Moreover, the representative sample had to be characterised by developed and under-developed provinces, rural and urban areas, cities and villages, and townships and suburbs. These are the characteristics of the structure of the South African economy as a country. There are two types of sampling in quantitative research, probability, and non-probability sampling. The probability sampling is preferred over non-probability sampling because it allows for generalisation of the study to the South African context and statistical inferences can then be made (Creswell, 2013).

After selecting the business organisations, the small business owners from each organisation were invited to participate in the survey. The invitations were sent through the chairpersons of the different business organisations in the form of a formal electronic letter, and some were sent to entrepreneurs directly (Chao, et al., 2012). Simple random selection has a few advantages; first, all SMEs within the sampling frame have an equal chance of being selected, second, the sample will be more representative, and last, the sampling error and bias will be reduced (Creswell, 2012).

3.3.3 The Sampling Frame

There is a general challenge in finding an efficient sampling method for SMMEs in developing countries. This lack of a known sampling frame pose some challenges in obtaining a fully representative sample (Chao et al., 2012; Nabatanzi-Muyimba,

2015). This study's sampling frame was designed in a way that would produce a representative sample. The sampling frame is the South African SMEs that have been in existence for more than a year, keep financial records and are represented in different national business organisations' databases.

A few South African business organisations were identified for this study's sampling purposes. The business organisations selected have SMMEs from various provinces in their databases, thus representative of the country's SME demographics. The sample, therefore, included, but was not limited to, members of the Business Woman Association (BWA), South African Black Entrepreneurs Forum (SABEF), South African Woman Entrepreneurs Network (SAWEN) and individuals that have been assisted by the Small Enterprise Development Agency (SEDA).

This approach assisted the researcher in defining a manageable study population. In order not to exclude SMEs that are not affiliated to any of the identified business organisations, this study utilised platforms like LinkedIn and Facebook to get more participants. This action was taken to minimise the bias against individual businesses with no affiliation.

All the SMEs had to meet the criteria regarding the number of employees, turnover, been operating long enough to have financial records and have kept financial records before they could participate in the survey. Section A, question 1.1 to 1.3 of the questionnaire addressed this, to ensure only SME owners who meet the requirements complete the survey. Table 3-1 shows the different types of businesses that participated in the survey. Due to the small sample size, the researcher decided to include the 90 respondents who are micro businesses even though the initial target excluded micro enterprises Therefore the final section criteria was SMMEs as per the definition described in Section 3.3.1

Table 3.1: The Sample distribution of SMMEs

Business Size	No of years in business				
	< 2yrs	2 to 3yrs	4 to 5yrs	>= 6yrs	Total
Micro	42	17	13	21	
	45%	18%	14%	23%	93
Very Small	13	23	13	23	
	18%	32%	18%	32%	72
Small	12	12	9	46	
	15%	15%	11%	58%	79
Medium	3	3	2	34	
	7%	7%	5%	81%	42
Total	**70**	**55**	**37**	**124**	**286**

Source: Primary data

Table 3.1 above cross-tabulated the size of the SMME versus the number of years it has been in business. This table illustrates the number of firms that fall under each of the four categories regarding SMME classification and the number of years in business. It is important to show the business categories and business age for two reasons; first, to demonstrate that they met the SMME criteria and second, that the age of the firm is not correlated to the category or size of the business thus suggesting a lack of growth. Under normal circumstances, enterprises are expected to grow over time and graduate from lower to higher categories (micro to medium and eventually big business).

From the 504 responses received, only 286 of the responses was usable. The cross tabulation shows the number and percentage of businesses that are classified as micro, very small, small and medium. It also shows how many years each SMME has been in business. Most of the SMMEs (124) have been in business for more than five years, and 21 of them remained micro for five years. About 165 (58%) of them are classified as micro, and very small which is very concerning because this suggests growth and performance challenges.

The DTI annual review report of SMMEs conducted in 2008 shows a similar trend about the distribution of the enterprises that are in the StatsSA Integrated Business Register. Most of the businesses are between micro and very small classifications (DTI, 2008). Some have been at the same level for more than five years which is evidence of no growth and no success at all.

The same applied to the sampled data in this study, approximately 60% of the businesses are within the micro and very small classification which is consistent with the DTI report. This study can, therefore, conclude that this suggests the data collected is representative of the SA SMME population. However, what is most concerning, is that since 2008, not much has changed regarding accelerated growth rate of SMMEs and the question remains why, after so many support programmes have been put in place, there is still no change. This is outside the scope of this research, but is something worth pursuing in future research.

Table 3.2: Comparison of StatsSA SMMEs versus sample distribution

Classification	This Study	StatsSA (Active & Inactive)	StatsSA (Active)	Growth
Micro	33%	11%	37%	Highest
Very Small	25%	14%	47%	Medium/Highest
Small	28%	3%	12%	Medium
Medium	15%	1%	4 %	Lowest

Source: Stats SA Integrated Business Register, March 2007 and primary data

Table 3-2 shows that the distribution of the SMMEs is representative of the population because from all three sources, most of the businesses fall within the micro and small business category. Medium businesses are in the minority which signals growth challenges of SMMEs. It is said that 82% of SMMEs in South Africa make up the micro and very small category (Ramukumba, 2014). SA SMME sector is stagnant and will not generate the kind of job numbers expected and the economic activity required.

The table above is evidence of lack of growth and sustainability which was the researcher's observation that led to this study investigating better models of assessing SME risks.

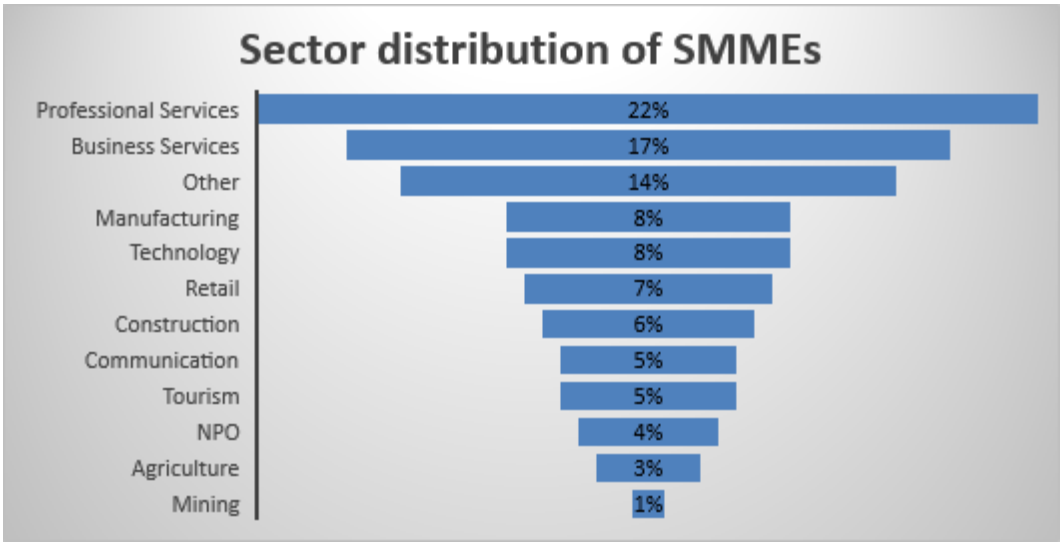


Figure 3.1: Standard Industrial Classification of sampled SMMEs

Source: Primary data

Figure 3.1 shows that the total number of responses was more than the 286 which is the total sample size because some businesses operate in more than one industry. Approximately 40% of the SMMEs play in the professional and business services space. According to the StatsSA integrated register of 2007, most (44%) of the SMMEs in the formal sector operate in financial intermediation, insurance and the real estate and business services.

Moreover, about 23% of the businesses are in the wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods; hotels and restaurants (DTI, 2008). The data distribution is consistent with the data collected in this study where professional services make up 22% and business services 17%. It shows that the services industry, whether financial or professional, makes up the bulk of SMMEs. The mining and agriculture industries have the lowest number of SMMEs, and this can be attributed to the larger cash injection required as start-up capital to which entrepreneurs do not have access.

3.3.4 Sample Size

Approximately 5000 questionnaires were sent out, and 504 responses were received which is about 10% response rate. A total of 286 of the responses were viable, and 192 were incomplete, therefore excluded from further analysis. There was missing data, and 26 did not even meet the criteria as SMMEs and were also excluded. Therefore, the analysis is based on a sample size of 286 respondents.

Because this study is quantitative in nature, there are specific requirements as to how big the sample size should be to perform certain statistical tests and multivariate analysis (MacCallum, Widaman, Zhang, & Hong, 1999; Tabachnick & Fidell, 2003). Given that factor analysis and multiple regression analysis were used, it was necessary to consider the minimum sample sizes required for these particular statistical procedures. Each of these techniques has their rules of thumb around optimal sample size, but all these rules advocate for bigger sample sizes (Field, 2013).

There are no clear theories on how to determine the optimal sample size for both factor and multiple regression analysis, thus the different views in literature are just rules of thumb. There is no agreement amongst researchers on how to determine the sample size. There are two schools of thought, though; some researchers argue that sample size is important and therefore determine the sample size according to participant/ variable ratio while others argue that as long as the factor has four or more loadings greater than 0.6, then the sample size does not matter (Fan, Thompson, & Wang, 1999; Field, 2013; MacCallum et al., 1999; Mundfrom, Shaw, & Ke, 2005). This study adopted the first argument of determining the sample size according to participant-variable ratio.

Nunnally (1978) and Everitt (1975) recommend as many variables as the participants while Kass and Tinsley (1979) recommended having between five and 10 participants per variable up to a total of 300 and J. Hair, Anderson, Tatham, and Black (1995) suggested using a ratio of 20 to 1.

Besides all these different recommendations, the common practice prevalent in literature has been to use 10 – 15 observations per variable according to Field (2009, 2013) but the minimum is five.

The general agreement in factor analysis is that the higher the commonalities, the lower the required sample size. In any case, bigger sample sizes are always the best irrespective of which statistical technique is used (Field, 2009). Table 3-3 below summarises the recommendations of various researchers which guided this study's decision on sample size.

Table 3.3 : Sample size critical values/ ratio

Observations/Participants	Variable/ Predictor	Reference
10 to 15	1	Field (2009,2013)
10	1	Nunnally (1978)
5 to 10 Up to 300	1	Kass and Tinsley (1979)
20	1	Hair, Anderson, Tatham, and Black (1995)
300	Absolute	Tabachnick and Fidell (2007)
1000 – Excellent 300- Good 200- Fair 100- Poor	Absolute	Comrey and Lee (1992)

Sources: (MacCallum et al., 1999; Mundfrom et al., 2005)

From Table 3-3**,** it is evident that the common rule of thumb varies from five to 20 observations per predictor variable and overall, 300 is a good sample size for any analysis. This study managed to get a sample size of 286 which is very close to 300. According to the 20:1 rule, the minimum sample size required is 160 cases, and 286 is more than the required minimum, and thus is a good sample size.

It would have been ideal to get to the 300 recommended as best, but due to incomplete responses, the study could only use 286 which is very much close to the recommended 300 and thus deemed acceptable and safe for further analysis.

Despite the fact that this study managed to get the required minimum sample size, it was still deemed necessary to further evaluate the number of variables, factors or variables per factor and size of commonalities and factor loadings (Field, 2013).

Sampling adequacy (Barlett and KMO): Kaiser–Meyer–Olkin (KMO) is another way to test the sampling adequacy to assess whether it is appropriate to do factor analysis or not. It ranges from 0 to 1, and a value close to one means the sample is adequate. Kaiser (1970) recommends 0.5 as a cutting point, and anything less than this will lead to inappropriate factor analysis. Table 3-4 is a guide on how to interpret the results from SPSS KMO test.

Table 3.4: KMO measure of Sampling Adequacy critical values

KMO range	Decision
Greater than 0.9	Superb
Between 0.8 and 0.9	Great
Between 0.7 and 0.8	**Good**
Between 0.5 and 0.7	Mediocre

Source: (Hutcheson & Sofroniou, 1999, Field, 2009. p. 647).

The Bartlett's test of sphericity: It is used to test inter-correlation between variables representing the same construct. It was then employed in this study to measure the statistical significance of the correlation matrices. The Bartlett test of sphericity tests the null hypothesis that the original matrix is an identity matrix. If the null hypothesis is true, it means that all correlation coefficients would be zero. The objective is to reject the null hypothesis and have significance value less than 0.05 which will suggest that factor analysis is appropriate (Field, 2005).

Response Rate: There are challenges of very low response rates when doing research surveys and it is important to target more than the required sample size to avoid small return samples (Nabatanzi-Muyimba, 2015). The response rate was estimated at 10% due to the number of unsolicited emails that were sent out (J. F. Hair, Black, Babin, & Anderson, 2010). It is very difficult to track response rate from unsolicited email and ordinarily most people do not respond to such.

This figure is an estimated response rate rather than an actual rate because the study could not measure with a level of acceptable certainty as some of the questionnaires were placed on social media which is an open platform and makes it difficult to track how many people received or viewed the survey.

Non-Response Bias: Independent sample t statistics test was conducted to test for non-response bias. The objective is to assess that those who responded do not differ from those who did not respond. If the two groups differ, it suggests that there is selective non-response. Selective non-response bias is not desirable in research because it biases the results and the findings cannot be generalised because they are not representative.

The data was grouped into two groups, and the respondents who responded late are used as a proxy for the potential respondents who did not respond.

Table 3.5: Indepent samples T-test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	0.10	0.75	0.58	283.00	0.56	0.07	0.12	-0.16	0.29
Equal variances not assumed			0.58	282.38	0.56	0.07	0.12	-0.16	0.29

Table 3-5 provides the results of the test of equality of means and variance. The variances of the two groups are not significantly different, $p>0.05$, $F(0.10,283)$. The output continues to show that the means for the two groups are also not significantly different at $p>0.05$. Based on these results, it was concluded that there is no problem of non-response bias and therefore no limitation will be imposed on the study results (Fowler Jr et al., 2002; Groves et al., 2011).

3.4 The Research Instrument

The research instrument used in this study was a predetermined self-administered on-line questionnaire. A self-administered questionnaire enables objectivity, confidentiality and reduces social desirability unlike when an individual has to interview the respondents directly. On-line questionnaires are quick and efficient and allow for wider geographical reach (D. R. Cooper & Schindler, 2011). The research instrument was suitable for this sample because it was piloted and has been used successfully for similar samples or studies (Acedo & Florin, 2006; Baum et al., 2001; Wiklund et al., 2009)

It was a multi-item scale consisting of five to 10 questions/statements per construct. The multi-item scale type of questions is popular in social science research because the variables measured are more subjective and difficult to measure with a single question which was the case in this study. Likert scales are easy to construct and are used to evaluate statements on a scale of agreement. The only disadvantage about them is that it can be difficult to interpret the meaning of each score (Zikmund, 2003).

A 5-point Likert scale was used to measure both independent and dependent variables from strongly disagree (1) to strongly agree (5). The development of the questionnaire was informed by previous studies and scales from past questionnaires wherever possible (Acedo & Florin, 2006; Cools & Van den Broeck, 2007; Urban, 2012). The survey was pretested on ten entrepreneurs, and a few changes were made to the structure, wording, and other minor improvements.

The demographic section had both closed-ended and forced questions. Measurements of control variables included multiple choice, dichotomous, checklist and single responses. Scales from previous studies were used to obtain a certain level of reliability because they have been tested before and been found to have excellent Cronbach alphas. They have met the reliability and validity requirements (Brockman, Jones, & Becherer, 2012; Wiklund et al., 2009) though not tested in the South African context.

A summarised version of the research instrument in Table 3-6 provides an overview of the structure, the questions and the items that constituted the survey, see Appendix A2 for a tabulation of detailed information with author sources.

Table 3.6: Research Instrument Summarized

High-Level Factors	Constructs (Latent Factors)	Section	Question #	Items	Variables
Selection Criteria and Classification	SMME	A	Q1.1-3	13	Other
Demographics	Individual and Business	B	Q2.1-8	8	CV
SME success	Growth (BS_G)	C	Q3.1	5	DV
	Financial Performance (BS_F)	C	Q3.2	6	DV
The Entrepreneur	Human Capital (HC)	D4	Q4.1-6	18	IV
	Entrepreneurial Self-Efficacy (ESE)	D5	Q5.1-2	14	IV
	Cognitive styles (CS)	D6	Q6.1-1	18	IV
The Firm	Business Planning (BP)	E	Q7.1-1	7	IV
	Financial Capital (FC)	E	Q7.2-3	10	IV
The Environment	Risk perception (RP)	F	Q8.1-1	8	IV
Total				**107**	

ID-Independent Variable, DV-Dependent Variable, CV-Control Variable, See Appendix A2 for detailed table with sources

Source: Primary data

The objective of the instrument was to collect data on the following: three high-level risk factors (the entrepreneur, the firm, and the environment), demographics, and a dependent variable (SME success). The questionnaire was divided into six sections labeled A to F.

[1] Section A was a selection criterion;

[2] Section B was demographic data;

[3] Section C measured the SME success construct which was the dependent variable in the study (BS_G and BS_F);

[4] Section D measured the entrepreneur variables (HC, ESE, and CS);

[5] Section E measured the firm variables (BP and FC);

[6] Section F measured the environmental variable (RP).

There were variables that were used as control variables for each risk factor which were included in each of the five sections from Section B to Section F and are listed below as per risk factor.

Table 3.7: Control Variables

CONTROL VARIABLES		
The Environment	**The Firm**	**The Entrepreneur**
• Area level of development • Location/ Province • External Support • Sector	• Number of Employees • Annual turnover • Assets • SMME size • Business Age	• Gender • Race • Age • Education

Section D to F constituted the study's independent variables which are used as predictor variables of SME success. The questionnaire was structured to reflect the three-dimensional levels of entrepreneurship; this is the study's high-level factors which are entrepreneur risks (individual level), firm risk (firm level) and environmental risks (external level) (Wiklund et al., 2009).

See the detailed questionnaire with author resources together with the cover page in Appendix A1 and A2.

3.5 Procedure for Data Collection

This study was a cross-sectional study. An online software - Qualtrics - was used to design, distribute, capture and summarise the data. Data was collected using a survey questionnaire over a period of three months from September 2015 to December 2015. Questionnaires are the most commonly used method of data collection in field research (Field, 2009).

It is always advisable to target a bigger sample size to cater for low response rate, unusable and missing data. Surveys are an efficient method to collect data from a huge sample, but they have limitations that need to be managed and minimised (D. R. Cooper et al., 2006). Primary data was collected from SME owners in South Africa using an online questionnaire. It is standard practice in social science studies for researchers to use surveys to collect data from SMMEs (Ramukumba, 2014) and has, therefore, become a standard method.

Questionnaires were distributed to approximately five business organisations using emails and were also posted on social networks. The individual number of entrepreneurs to whom the questionnaire was sent, cannot be stated with an acceptable level of confidence because it was not possible to track how many entrepreneurs received the questionnaires since it was mostly administered through chairpersons of business organisations, unsolicited e-mails and on open platforms like LinkedIn, Twitter, and Facebook.

Therefore, the response rate is estimated to be as low as approximately 10% due to the factors mentioned above. The summary of the responses received is tabulated in Table 3-8

Table 3.8: Type of respondents

Respondents		Frequency		Percentage		Data
Entrepreneurs		286		57%		Viable
Non-Entrepreneurs		26		5%		Disqualified
Incomplete		192		38%		Missing data
Total Responses		**504**		**100%**		

Source: Primary data

Table 3-8 shows the kind of people that responded to the survey; 286 were entrepreneurs and SME owners, and their responses could be used. However, 26 of them were not entrepreneurs, and 192 had missing data, and their responses could not be used for further analysis.

The business organisations from which the researcher collected data had a membership of both SMMEs and big businesses, but the group of interest was the SMEs. Most of those businesses who did not meet the selection criteria did not attempt to respond, but some did, and that is how the 26 non-entrepreneurs were tallied. The first question on the questionnaire was to confirm whether an entrepreneur's business is classified as a small business or not. If the respondent met the criteria, s/he could proceed to the next question otherwise the survey closed and went to the last page which had a closing message.

The data were collected from two groups using two different methods. The detailed process that was followed when collecting the data is as follows:

- ***To Business Organisations***

[1] Chairpersons of the various business organisations and individual businesses were contacted telephonically and by e-mail, to request participation of their members or themselves and their importance in the study was explained to them;

[2] To those who granted the researcher permission, an official formal letter explaining the purpose and importance of the research was emailed to the chairpersons and individuals. The e-mail included the consent form, explanation of the study and the link to the survey;

[3] One of the organisations preferred that the researcher explain to their members at one of their meetings what the study was all about before emailing the formal invitation. It was followed by execution of Step [2];

[4] After the research objective and the research process was explained to the members at a meeting, the chairperson then sent out the link to the survey to all the members

[5] After a week follow-ups were done to improve the response rate;

[6] A week before the closing date, an e-mail was sent out again to follow up and remind the potential respondents of the request to participate.

- ***To Social Networks***

[1] A link was posted on Facebook, Twitter, and LinkedIn requesting entrepreneurs to complete the survey. The link was sent with an attachment letter which had all the details and explanation of the study.

[2] Follow-up e-mails were sent directly to individuals through the social network platform and reminded them to participate.

[3] Follow-ups were done after two weeks, again to improve response rate.

The advantage of using this method to collect data was that the researcher managed to reach many entrepreneurs at once from the online platform. This platform allowed respondents to give more honest answers, to complete the questionnaire at their convenience and it was efficient. The disadvantage was that questions might be misunderstood, and the response rate could be low, but scales were tested for internal reliability. The multiple scales also helped to minimise the effect of misunderstood questions because a respondent had to respond to several questions for one construct.

After the data was collected, the analysis had to begin, and the next section describes how the researcher conducted the data analysis.

3.6 Data Screening and Analysis Approach

The statistical package for social scientists (SPSS V23/4) and Analysis of Moment Structure software (AMOS V23) were identified as appropriate statistical software to perform the multivariate statistical analysis. These are easy to use software packages, they do not require any special skills and the outputs are easy to understand and interpret (Field, 2013). As already stated, this section focuses on describing how the data analysis was performed and what important factors were considered when making statistical decisions.

After the data had been captured into Qualtrics, it had to be cleaned to ensure the integrity of the data was not compromised. The data quality check process included screening the data for errors, coding, completeness and reversed questions. Once that was done, it was then exported to SPSS and checked for missing data, and violation of any statistical assumptions of multivariate analysis (Field, 2013; Tabachnick & Fidell, 2003). We then started by assessing the data for any missing values, violation of multivariate analysis, followed by validity and reliability testing and lastly, the statistical techniques used for hypothesis testing.

3.6.1 Missing Values Analysis

This section looked at different ways of treatment of missing data. Surveys usually come with a problem of missing data, and this could be due to data collection processes and other survey related issues (i.e. long questionnaires, instrumentation, respondents exercising their rights not to answer or sensitive questions) (Field, 2013).

In this study, the research instrument used was an online survey which was programmed not to allow participants to proceed to the next question unless the prior question has been answered in full. This approach came with its challenges whereby participants abandoned the survey without completing it.

Therefore, the missing data in this study was limited mainly to incomplete data sets. There were a few steps followed to analyse the pattern, delete and replace

some of the missing values from the 504 responses received and these steps were guided by Rubin (1976)'s theories on missing data.

[1] First, the listwise deletion was performed to all the cases (26) received from respondents who did not meet the small business criteria. The listwise deletion deleted all data of the 26 cases that had been identified (Little, 1992). The disadvantage of listwise deletion is that one loses the whole set, but for the kind of analysis this study needed to do, it was important that we had the full set of variables per observation.

[2] Then, a further listwise deletion was performed to all the cases (192) that had more than 10% missing values (RJa & Rubin, 1987).

[3] Subsequently, only 286 cases remained, and eight of them still had missing values. Then the remaining cases which still had missing values were examined to see whether they were missing completely at random (MCAR), missing at random (MAR) or missing not at random (MNAR). If the fact that data are missing does not depend on any values, or potential values, for any of the variables, then data are said to be missing completely at random (MCAR) (Howell, 2008).

[4] Little's missing completely at random (MCAR) test was performed on SPSS. The test output gave a p-value of 0.470. Therefore, there was evidence of MCAR, $p>0.05$ means was not significant (Howell, 2008)

[5] Lastly, the missing values were replaced using the expectation maximisation method from SPSS. Maximum likelihood estimation uses all available values to generate maximum likelihood-based statistics (Moon, 1996). MVA was performed on the cleaned data to confirm that there were no missing values any more.

Table 6-1 and Table 6-2 (both in Appendix B) provide the descriptive statistics and confirm that there are no missing data any more, but suggested that they might be an issue of extreme values. It is critical that before performing any statistical analysis, data must not violate any statistical assumption and the following section addresses that issue.

3.6.2 Statistical Assumptions

It is crucial to screen the data for violation of any assumptions for the multivariate statistical technique used, otherwise the results become misleading, cannot be interpreted at face value and cannot be generalised to the population of interest (Field, 2009). Since this study sought to answer research questions that relate to the strength, direction and significance of the relationship of multiple IVs to SME success (DV), to build a regression model with the most predictive power and subsequently, develop a framework to assess SME success, it was therefore, deemed appropriate to use multivariate statistical procedures (Tabachnick & Fidell, 2003).

These included Pearson product moment correlation, exploratory and confirmatory factor analysis and hierarchical multiple regression analysis. It is then important to address the assumptions of each of these statistical techniques requirement to provide a stable model (Field, 2013; Tabachnick & Fidell, 2003). The data were therefore tested for the following assumptions: absence of outliers, normality, linearity, homogeneity of variance, independence of error terms, multicollinearity/collinearity and normality of errors.

3.6.2.1 Assumption1: Outliers

Outliers are data points that are different from the data set; they are not within the range of the other observations which are the majority. Because of this, they can bias the parameter estimate and magnify the sum of squared error (Field, 2013).

According to the exploratory data analysis framework developed by Tukey (1977), outliers are the observations that fall outside the set boundaries of the interquartile range. There are several methods that researchers use to detect outliers and the most popular one is the box and whiskers plot which is usually referred to as the interquartile range rule. Box plots are simple to compute and understand, thus their popularity (Iglewicz & Hoaglin, 1987) and they are available on the SPSS platform.

Interquartile (IQR) range rule: SPSS uses 1.5*(IQR) and 3*(IQR) as the multiplier("k"). It denotes outliers by a small circle where k=1.5 for "out" values, and an asterisk where k= 3 for "far out" or extreme values and no labeling if there are no outliers. Figure 6-1 in Appendix B shows there were no outliers detected on the following factors; BS_F, FC, HC, ESE_F, and ESE-G. However, it shows detection of "out" values or outliers on RP=5, BP=7, CS_I=3, CS_P=2, ESE_M=1, and BS_G=7; where 5,7,3,2,1 and 7 are the total number of observations labeled as out values. There were no extreme values detected, and it was concluded that there was no problem of outliers in this data set since the out values are generally not treated as outliers (Field, 2013).

There have been some critics of this rule because in most cases, it labels some cases as outliers while they are not and sometimes does not detect certain cases which are potential outliers (Tukey, 1977). According to David C. Hoaglin, Iglewicz, and Tukey (1986), the two multipliers 1.5 and 3.0 that SPSS uses has proven to be wrong 50% of the time when tested. Because of the critics, it was then decided to verify the results obtained from SPSS inter-range quartile rule using a different rule.

Tukey outlier labeling rule: This study proceeded and applied David C Hoaglin and Iglewicz (1987)'s rule to validate that the results were not one of the 50% wrong outcomes and still no outliers were detected. One of the advantages of using Tukey's outlier labelling rule is that it is less sensitive to extreme values, unlike the standard deviation and Z-score rules.

Hoaglin and Iglewicz used simulation on a Gaussian distribution to determine the correct multiplier to use to calculate the cut-off (lower and upper bound), any value outside these boundaries is a potential outlier. The formula used to calculate the cutoffs is as follows:

$$\text{Lower Bound} = Q1 - ((Q3 - Q1)* k)$$

$$\text{Upp Bound} = Q3 + ((Q3 - Q1)* k)$$

Where k=2.2; Q3 =75th and Q1= 25th percentiles (David C Hoaglin & Iglewicz, 1987; David C. Hoaglin et al., 1986; Tukey, 1977). Table 6-3 in Appendix B provides Tukey's hinges used to compute the lower and upper boundaries for detecting outliers.

Table 3.9: Critical values for outliers

FACTOR	Q1 (25th)	Q3(75th)	K	Lower	Upper
BS_F	2.17	3.67	2.2	-1.13	6.97
RP	2.00	3.00	2.2	-0.20	5.20
BP	3.00	4.00	2.2	0.80	6.20
FC	1.67	3.00	2.2	-1.27	5.93
HC	2.20	4.00	2.2	-1.76	7.96
ESE_M	3.00	4.33	2.2	0.07	7.27
ESE_F	2.67	4.00	2.2	-0.27	6.93
ESE_G	2.67	4.00	2.2	-0.27	6.93
CS_I	4.00	4.83	2.2	2.17	6.67
CS_P	3.60	4.60	2.2	1.40	6.80
BS_G	1.33	2.33	2.2	-0.87	4.53

Source: David C Hoaglin and Iglewicz (1987, p. 1147)

Outlier fences were calculated based on Tukey's hinges. Table 3-9 shows the lower and upper boundaries, and each observation needs to be within these limits otherwise, it suggests that it is an outlier. Table 6-4 in Appendix B provides the case number, lower and upper extreme values with the outlier fences for each observation.

The extreme values are used as a comparative measure to test the data. CS_I had one observation that is lower than the lower bound (case # 42=2<2.17). BS_G had three observations higher than the upper limit (cases # 60,71 and 101 > 4.53). BS_G observations were excluded from the regression analysis and CS_I was monitored closely because the observation did not seem to be significantly different from the lower bound. Therefore, no evidence of outliers was detected on any of the factors.

Standard deviations rule: The 2SD and 3SD rules are used a lot, but there are some unanswered questions regarding their theoretical base and robustness.

According to the normal distribution theory and visual inspection, it is clear that a normal distribution has approximately 2.3% data points above and below the standard deviation of 2 from each tail (Field, 2009). This theory suggests that if cases that have values above ±2 are deleted, then the tails that constitute the 5% will be lost. Though the researcher supports the argument that this approach is flawed, the data was assessed nevertheless and concluded that there are no observations that lie outside this criterion of ±2SD (Seo, 2006).

Mahalanobis Distance (MD)-Multivariate outliers: Multivariate outliers refer to observations with an unusual combination of scores. MD measures the distance of the predictor variables from the data distribution (Hodge & Austin, 2004). Evidence of the presence of potential multivariate outliers was detected from observation number 180. X^2 =26.13; df=9, p =.00034., MD= 28.7981. Since p<0.001 there is statistical evidence of an outlier and this observation was deleted from the data for any further analysis (Tabachnick & Fidell, 2003). After deletion of the outlier, MD was re-computed with the p-value ranging from 0.0057 to 0.9991. Table 3-10 provides a pictorial view of the MD results which concur with the other results that suggested that the problem of multivariate outliers was addressed.

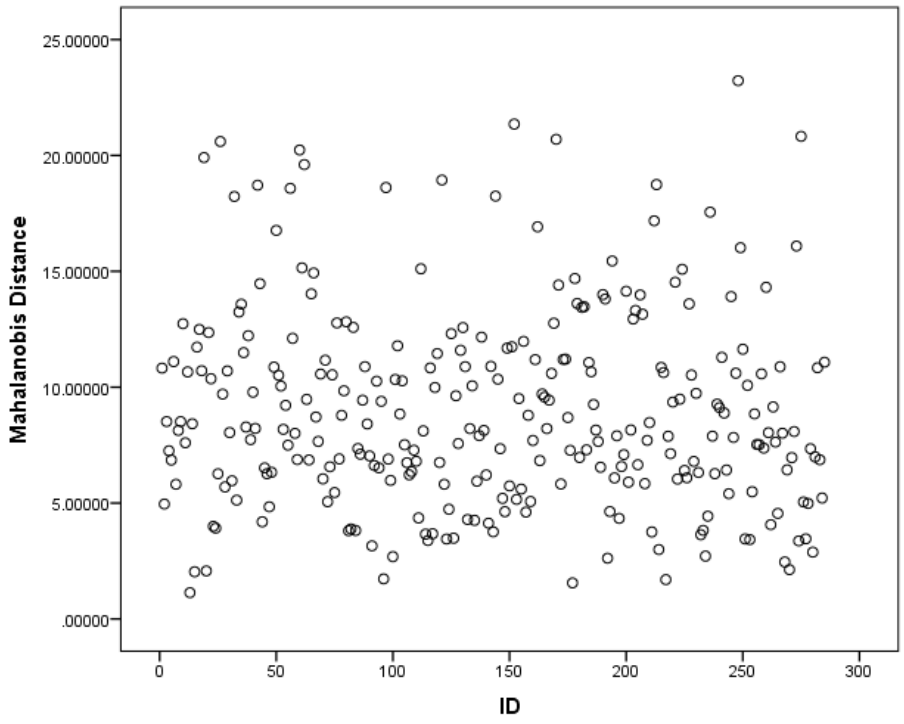


Figure 3.2: Pictorial view of the Mahalanobis distance results

3.6.2.2 Assumption 2: Normality

Most parametric statistical analysis requires that the data be roughly normally distributed to obtain generalisable results and correct inferences. According to Andy Field, normality is therefore not a mandatory requirement if the researcher does not wish to generalise the results beyond the sample collected (Field, 2009), however this study disagrees with Field's school of thought because non-normality is not only used for generalisability but it has many other benefits. Normality of variables can be assessed using numerical methods, graphical methods or formal normality tests. The methods utilised in this study are, Shapiro-Wilk (S-W) and Kolmogorov-Smirnov (K-S) tests, kurtosis and skewness indices, Z-scores, histograms, Mahalanobis and Quantile-Quantile (Q-Q) plots (Razali & Wah, 2011).

A graphical assessment of normality: The researcher started by visually assessing the sample distribution using graphical methods which are sometimes referred to as an "eyeball" test (Histograms, P-P and Q-Q plots).

An approximately normally distributed data set has a bell-shaped line fitted closely around the histogram frequencies and the data points on the Q-Q plot line up along the diagonal line. Normality characteristics can be observed from a histogram or computed using descriptive statistics in SPSS. If the histogram has a long tail to the right, it is positively skewed, and if it has a long tail to the left, it is negatively skewed (Field, 2013).

Figure 6.2 in Appendix B shows the graphical presentation of the distributions of all the factors. All the P-P plots seem to be approximately normal, except for CS_I, CS_P which has one data point which appears to be far out from the rest of the observations, and BS_G graphs seem to suggest non-normality. BS_G was log transformed and consequently looked better.

The histograms were a little confusing because there is not enough variability in the data set since the variables were measured on a scale of one to five. Though Likert scales are treated as continuous variables in the literature, they have limitations, especially when using techniques that are very sensitive to sample size and the variable type (continuous vs. ordinal). The histograms are provided in Figure 6.2 in Appendix B but the researcher chose to use them in conjunction with the Q-Q plots. The usage of both histogram and Q-Q plots was to manage the challenge that comes with difficulty in interpreting Likert scales visually (Field, 2013; Tabachnick & Fidell, 2003).

Figure 3.3 provides a graphical assessment of multivariate normality using Chi-square and Mahalanobis distance (MD) plot. The MD was computed through the SPSS environment using the transform function. After computing the MD, the p-values were calculated using the following equation ($casenum – 0.5)/285 followed by the CHISQ which was computed using the inverse DF in SPSS. The simple scatter plot shows a clear straight line of the data points, and it, therefore, suggests that the data is multivariate normal (Tabachnick & Fidell, 2003; Wan Nor, 2015).

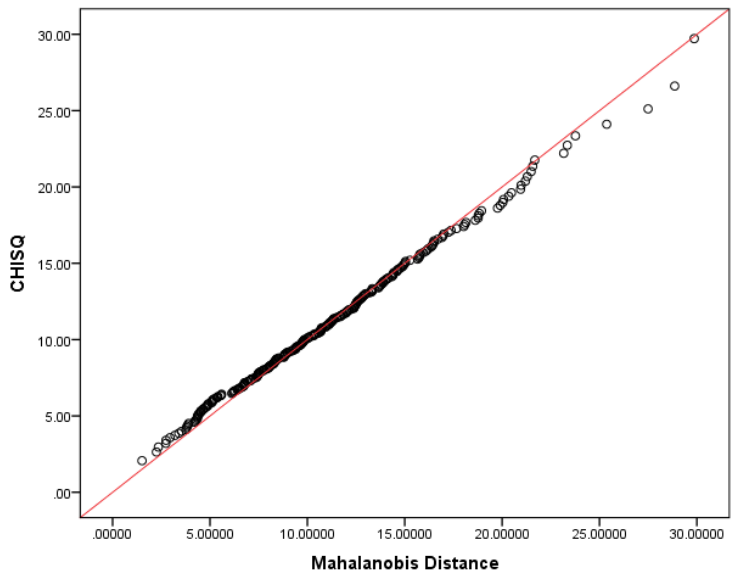


Figure 3.3: Chi-square versus Mahalanobis distance plot

Source: Primary Data

Shapiro-Wilk and Kolmogorov-Smirnov tests: S-W and K-S test the null hypothesis that the data comes from a normally distributed population. The objective of this test was to fail to reject the null hypothesis at $p>0.05$ and conclude that the test is not significant therefore the data is normal. There are different views in literature as to which test is more reliable between S-W and KS. Some scholars argue that S-W is more reliable (Field, 2009; Razali & Wah, 2011), while some argue that statistical significance tests should be used with other tests because they are not reliable and they are highly sensitive to sample size irrespective of whether it is KS or S-W (Cramer & Howitt, 2004; Shapiro & Wilk, 1965; Tabachnick & Fidell, 2003).

In this case, the sample size was bigger than 250, error terms were small and a 5-point Likert scale was used. Therefore, we did not expect the S-W and K-S to produce reliable results since they are both sensitive to the issues mentioned above (Field, 2009). Table 3-10 provides the S-W and K-W normality tests statistics with all p-values less than 0.05, df=285 for both tests.

The results were not surprising as the researcher expected the results to be contradictory to the results of the “eyeball test” or graphical assessment due to sample size and Likert scale effects. The K-S and S-W suggest that the data is not normally distributed at ($p<0.05$, df=285). Finally, following from the contradictory results from the graphical and formal normality tests, the skewness and kurtosis tests were conducted before the final decision in order to be able to substantiate whatever conclusions are made.

Table 3.10: Shapiro-Wilk and Kolmogorov-Smirnov Normality Test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
FACTOR	Statistic	Df	Sig.	Statistic	df	Sig.
BS_F	.11	285	.00	.97	285	.00
RP	.11	285	.00	.97	285	.00
BP	.16	285	.00	.93	285	.00
FC	.12	285	.00	.94	285	.00
HC	.09	285	.00	.94	285	.00
ESE_M	.13	285	.00	.96	285	.00
ESE_F	.11	285	.00	.97	285	.00
ESE_G	.10	285	.00	.97	285	.00
CS_I	.13	285	.00	.92	285	.00
CS_P	.11	285	.00	.94	285	.00

a. Lilliefors Significance Correction

Source: Primary Data

Skewness and Kurtosis: Skewness measures the symmetry while kurtosis measures the peakedness/flatness of the distribution. A normally distributed sample has a skewness and kurtosis close to zero, any significant deviations from this suggest that there is a difference between the sample distribution in question and a normal distribution (Field, 2013).

Based on the normality assessments conducted graphically the results showed that the distribution of all variables is normal except for BS_G, which was transformed. However, the formal normality tests showed that all the variables are non-normal.

To resolve the dilemma from the two outcomes, further analyses were conducted using skewness and kurtosis tests. The contradictory results could be attributed to the fact that both tests are sensitive to sample size. Graphical assessment works better with sample size approximately greater than fifty while formal tests might be more useful with sample sizes less than three hundred (Kim, 2013; West, Finch, & Curran, 1995). The sample size was very close to three hundred.

Table 3-11 shows that all the variables are slightly negatively skewed except for RP, FC and Log(BS_G) which are slightly skewed to the right (positive skew). The cutoffs used to make a decision were 2 for skewness and 7 for kurtosis. No problem of skewness and kurtosis were detected since all the skewness and kurtosis statistics were less than the cutoff of 2 and 7 respectively (Cohen, Cohen, West, & Aiken, 2013; Curran, West, & Finch, 1996).

BS_G is the only factor that had skewness and kurtosis greater than one, though it is still below the cut-off two the Log-transformed factor was preferred since it substantially improved the factor from a skewness of 1.169 and kurtosis of 1.712 to 0.195 and -0.48 respectively. These results are more reliable than the above mentioned two because skewness and kurtosis are less sensitive to sample size compared to the others. It was therefore accepted that the data is normally distributed except for BS_G and this is in support of the graphical tests conducted earlier.

Table 3.11: Skewness, Kurtosis, and Z-Scores

	Skewness			Kurtosis		
Factor	**Statistic**	**Std. Error**	**Z-score**	**Statistic**	**Std. Error**	**Z-score**
BS_F	-.200		-1.39	-.511		-1.78
RP	.302		2.09	.055		0.19
BP	-.663		-4.59	-.263		-0.91
FC	.215		1.49	-.639		-2.22
HC	-.344		-2.38	-.912		-3.17
ESE_M	-.354	0.144	-2.45	-.413	0.288	-1.44
ESE_F	-.245		-1.70	-.510		-1.77
ESE_G	-.164		-1.14	-.493		-1.71
CS_I	-.797		-5.52	.285		0.99
CS_P	-.654		-4.53	.538		1.87
LogBS_G	.195		1.35	-.480		-1.67

Source: Primary Data

The descriptive statistic only tells us the size of the skewness and kurtosis but does not tell us the significance of the statistic. The significance of the statistic tests the null hypothesis that there is no skewness or kurtosis at $p<0.01$, 0.05 or 0.001 (Cramer & Howitt, 2004) and therefore the data comes from a normally distributed sample. The Z-Scores were used to simplify the interpretation of the skewness and kurtosis values and test the significance of the statistic. The Z-scores were calculated using the following equations

$$\text{Z-Skewness} = (S_S - 0)/\text{SE Skewness}$$

$$\text{Z-Kurtosis} = (S_K - 0)/\text{SE Kurtosis}$$

Where S_S=Statistic for Skewness, S_K =Statistic for Kurtosis and SE =Standard Error

The significance of the Z-scores were tested against a 95%, 90%, 99% confidence with (1.96, $p<0.05$); (2.58, $p<0.01$) or (3.29, $p<0.001$) respectively. If the Z-score is higher than the 1.96 or 2.58 or 3.29, then it means there is skewness or kurtosis thus violating the normality assumption. In this study, the Z-scores were interpreted using 3.29 at $p=0.001$ since the sample size was larger than 250.

CS_I, CS_P, and BP seem to violate the normality assumption; the Z-scores are greater than the upper limit of 3.29 at p=0.001. The results are inconsistent when compared with the graphical test and the size of the statistics. Because of the sample size which is greater than 250, the 5-point Likert scale that was used and the inconsistency of the outcome, the data was deemed fairly normal, but the factors were monitored closely to make sure it did not cause problems in further analysis (Field, 2009).

Table 3-10, Table 3-11 and Figure 6-2 – Summary of Normality test results: The visual inspection of the normal Q-Q and MD plots, the Z-Scores and S-W and KS all showed different results. Based on the fact that each of the factors met the requirements of at least two criteria, it was then decided to treat all variables and the Log(BS_G) as reasonably normally distributed.

3.6.2.3 Assumption 3: Linearity and Homoscedasticity Test

The purpose of the linearity test is to determine if there is a linear relationship between the dependent and independent variables. Linearity is a requirement for correlational and regression analysis (Tabachnick & Fidell, 2003). The Pearson Moment of Correlation was used to test the linearity of the study variables. Linearity can also be tested using scatterplots, but due to the difficulty of interpreting scatterplots drawn from a five-point scale with 285 data points, the bivariate correlation was utilised (Field, 2013).

Consequently, the Pearson correlation matrix with significant bivariate correlations was produced. Table 3-12 provides the relationship between all the variables and their significance. The dependent variable (BS_F) has a significant linear relationship with the following predictor variables (FC, ESE_F, ESE-G, ESE-M, RP and CS_I) at p=0.05 and p=0.01 but does not seem to have a significant linear relationship with BP, CS_P, and HC which is a limitation of this study.

Table 3.12: Pearson Correlation Matrix- Linearity

FACTOR	BS_F	RP	BP	FC	HC	ESE_M	ESE_F	ESE_G	CS_I	CS_P
BS_F	1.00									
RP	.238**	1.000								
BP	.092	.111	1.000							
FC	.534**	.346**	.029	1.000						
HC	.073	.078	.265**	.163**	1.000					
ESE_M	.263**	.048	.142*	.183**	.343**	1.000				
ESE_F	.316**	-.008	.235**	.275**	.344**	.355**	1.000			
ESE_G	.363**	.003	.138*	.212**	.157**	.423**	.377**	1.000		
CS_I	.130*	-.011	.124*	.069	.165**	.295**	.132*	.191**		
CS_P	.064	.109	.259**	-.089	.098	.125*	.086	.103	.240**	1.000

*Correlation is significant at the 0.01** and 0.05* level (2-tailed), BS_F=Business Success Financial Performance, RP=Risk Perception, BP=Business Planning, FC=Financial Capital, HC=Human Capital, ESE=Entrepreneurial Self Efficacy, M-Management, F-Finance, G-Growth, CS=Cognitive Style, I-Intuition, P-Planning, BS_G=Business Success-Growth*

Homoscedasticity means that the variance of the residuals should be equal at each level of the predictor variables. Homoscedasticity is also known as the homogeneity of variance which is used when testing grouped data. Levine's test can also be used for grouped data. In this study, we used the residual plot to test for the ungrouped dataset. If this assumption is violated, it will invalidate the confidence intervals and the significance tests (Field, 2013). Figure 3-2 shows that the residuals fall within -3 and 3 of the standard residuals cutoff and it was concluded that the homoscedasticity assumption was not violated, the data seem to be scattered evenly on the residual plot.

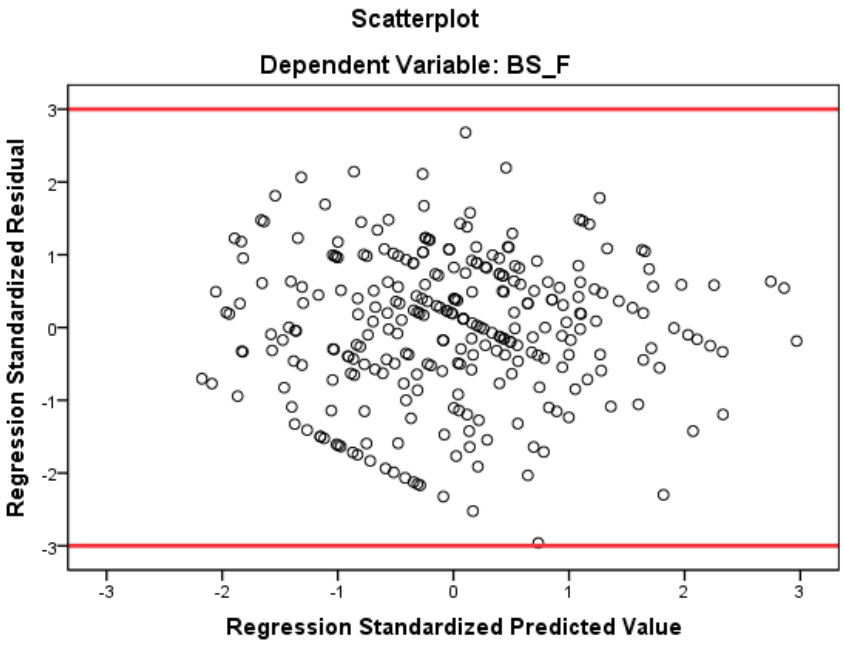


Figure 3.4: Homoscedasticity

Moreover, the data was split into wave 1 and wave 2 for the entrepreneurs who responded early versus those who responded late. The Levene test was performed on the two groups. Table 3-13 provides the results; all the variables had $p>0.05$, $df_1=1$, $df_2=283$ which suggest that the homogeneity of variance assumption was not violated.

Table 3.13: Test of Homogeneity of Variance

	Levene Statistic	df1	df2	Sig.
BS_F	.032	1	283	.858
RP	1.713	1	283	.192
BP	1.145	1	283	.286
FC	.877	1	283	.350
HC	.044	1	283	.833
ESE_M	1.327	1	283	.250
ESE_F	.343	1	283	.558
ESE_G	.445	1	283	.505
CS_I	1.737	1	283	.189
CS_P	.442	1	283	.507
BS_G	.635	1	283	.426

3.6.2.4 Assumption 4: Independence of Error Terms

Independence of errors means that for any two observations, the errors must be uncorrelated. This hypothesis was tested using the Durbin-Watson (DW) test. It can also be used to test autocorrelation which is also known as serial correlation. There is no consensus in the behavioural science literature about the use of DW to test survey data that is not time series (Field, 2009) nevertheless it was used in this study since this is a basic study.

Table 3.14: Durbin-Watson- Independence of Errors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.619[a]	.384	.363	.77601	1.663

a. Predictors: (Constant), CS_P, ESE_F, RP, CS_I, BP, ESE_G, HC, FC, ESE_M

b. Dependent Variable: BS_F

DW is robust when using time series because it is time-based and the order of the observations influences the result. The purpose of this test is to measure the next error terms. Durbin-Watson ranges from zero to four.

If DW=2, then there is no problem of correlated error terms but if it is less than one or greater than three then it suggests that the error terms are correlated (Durbin & Watson, 1951; Field, 2013). Table 3-14 provides evidence of independent errors with DW=1.663 which is less than three and greater than one which is very close to 2 and therefore concludes that there is no indication to suggest that the errors are correlated.

3.6.2.5 Assumption 5: Multicollinearity Test

Multicollinearity is when two or more predictor variables in the model are highly correlated (r >0.8 or 0.9) and provide redundant information about the response. Multicollinearity makes it difficult to determine the unique significance of each predictor variable in the model. It is not desirable in any analysis because it produces confusing, misleading and unreliable regression results. The objective of this test is to determine if any independent variables are similar (Field, 2013; Tabachnick & Fidell, 2003).

If there are such variables, they need to be excluded from the model or else aggregated into one variable because the one variable is usually enough to predict the response (Tabachnick & Fidell, 2003) if it is close to one. Table 3-12 shows the correlation coefficients of the different variables, and none of them has a coefficient (r>0.8). It was concluded that there is no problem of multicollinearity. Further tests were conducted through the SPSS collinearity diagnostic analysis.

Moreover, Variance inflation factor (VIF), Tolerance (T) and Conditioning index (CI) between predictor variables are the three indices used to scan further and identify multicollinearity. VIF and tolerance are a function of each other, VIF tells us whether a predictor has a strong linear relationship with other predictor variables while tolerance statistics is the reciprocal of VIF (Field, 2013). Conditioning index tells us whether one variable is dependent on other variables, it measures the tightness. According to Field (2013), there are no hard and fast rules on what values call for concern, but this study used the guidelines (Table 3-15) Field cited in his book as the decision rules.

Table 3.15: Decision Rule for multicollinearity

Procedure	Multicollinearity
Correlation coefficient (r)	Greater than 0.8
Variance Inflation Factor (VIF)	Less than 1 or greater than 10
Tolerance (T)	Less than 0.2
Condition Index (CI)	Greater than 30
Variance proportion (VP)	More than one variable with VPs greater than 0.5 in the same dimension

Source: (Belsley, Kuh, & Welsch, 1980; Bowerman & O'Connell, 1990; Field, 2013; Menard, 1995; Myers, 1990).

Table 3-16 provides the collinearity statistics with VIF<10 and >1 and T >0.2 which suggest there is no collinearity problem. Table 6-5 in Appendix B showed a condition index <30 except the last row which was 34.53. There were five variance proportions greater than 0.5, but no row had more than one variance proportion >0.5. Though the last row had a CI of 34.53 and a variance proportion of 0.6, it is still below the threshold.

There is only one variable that has a variance proportion of more than 0.5 in the same dimension, and a combination of the two is required to suggest multicollinearity symptoms (Belsley et al., 1980). Therefore, all the results were consistent and confirmed that there was no multicollinearity because all the results were below the cut-off points (Bowerman & O'Connell, 1990; Field, 2013; Menard, 1995; Myers, 1990). Therefore, the data were deemed suitable for multivariate analysis and concluded there were no issues of multicollinearity.

Table 3.16: Collinearity Coefficients

Model		Collinearity Statistics	
		Tolerance	VIF
1	**RP**	.83	1.21
	BP	.84	1.18
	FC	.75	1.33
	HC	.78	1.27
	ESE_M	.69	1.45
	ESE_F	.71	1.42
	ESE_G	.74	1.35
	CS_I	.86	1.16
	CS_P	.85	1.17

a. Dependent Variable: BS_F

BS_F=Business Success Financial Performance, RP=Risk Perception, BP=Business Planning, FC=Financial Capital, HC=Human Capital, ESE=Entrepreneurial Self Efficacy, M-Management, F-Finance, G-Growth, CS=Cognitive Style, I-Intuition, P-Planning, BS_G=Business Success-Growth

3.7 Validity and Reliability

Since this study used a questionnaire with multi-item scales to measure the different constructs, it was, therefore, critical to test for construct, scale and instrument validity and reliability. These tests helped the researcher to assess whether the study is correctly and consistently measuring what it purports to measure. The objective of testing for reliability and validity was also to minimise measurement error (Field, 2009).

3.7.1 Reliability Testing

Reliability refers to the instrument's ability to measure the repetition of the research findings and produce results (D. R. Cooper et al., 2006; J. Nunnally, 1978). According to Weiner (2007), reliability means the degree to which a measurement technique can be depended upon to secure consistent results upon repeated application, and this is in line with Cooper's definition, it is the consistency of measurement (Bollen, 1989; Field, 2009).

3.7.1.1 Threats to Reliability

There are various sources of threat to reliability, some had to be managed, but some had little or no effect on this study. This section discussed how the different threats were addressed in this study.

Subject reliability: It is a threat that arises as a result of factors caused by research subjects or respondents, in this case, entrepreneurs (Drost, 2011). Subject reliability was minimised by allowing the respondents to complete the questionnaire at a time convenient to them. The respondents were informed up-front how long it would take to complete the survey so they could be ready and set aside reasonable time to take the questionnaire. The reason to communicate this information up-front was to ensure that there was a minimal effect from fatigue, rushing and being disturbed while completing the survey (Weiner, 2007).

Observer reliability: This is as a result of factors due to the interviewer, i.e. abilities and interpretations of the interviewer (Drost, 2011). In this study, this was not a threat because the questionnaire was a self-administered questionnaire completed on-line. Observer reliability can be evaluated by using test-retest method (where measurements from the same observer are compared at two points in time) or inter-rater agreement (where two or more observers are compared at a point in time), Kappa statistics can be calculated to this effect (Weiner, 2007).

Situational reliability: This could be due to the conditions under which the measurements are made, in this case under which the questionnaire is completed (Drost, 2011; Weiner, 2007). The researcher's view was that this was not a major threat in this study because of the flexibility that comes with online surveys which could be accessed any time anywhere.

Data processing reliability: This refers to the way data are handled. It includes things like capturing data correctly and even coding of the data (Drost, 2011). The data were captured on-line as the respondents were completing the survey, it was then exported from Qualtrics to SPSS and Excel (Weiner, 2007).

This processing method minimised the data handling error, especially human error because there is no direct handling and recapturing of data since all was done electronically.

Instrument reliability: This refers to the research instrument or measurement approach itself. Instrument reliability was key in this study since the study chose a questionnaire as the research instrument. For example, poor wording of questions, vague statements, long double barrel questions and much more can compromise the reliability of the measurement instrument (Creswell, 2013; Weiner, 2007). Every effort was taken during the development of the instrument and data collection to minimise errors and unreliability. Some of the interventions taken to improve reliability include the use of scales that have been tested in previous studies and multi-item scales with more than three questions each. One of the key items that had to be thoroughly checked in this study was the coding or scoring of items to ensure that negatively phrased items are reversed (Field, 2009, 2013).

Reverse items: These were the items where strongly agree and strongly disagree responses meant a negative and positive response respectively while the rest of the questions were coded in the opposite direction. The items on Table 3-17 were negatively framed, and it was re-coded before the data could be analysed so that all the answers could flow in the same direction.

Table 3.17: Questions with reversed statements

Question #	Total items	No of reversed items	Variable measured
Question 4.4	5	2	Experience
Question 7.2	7	4	Financial Capital
Question 8.1	8	2	Risk perception

3.7.1.2 Types of Reliability

In this section, the study described four different kinds of reliability but focused more on internal consistency reliability

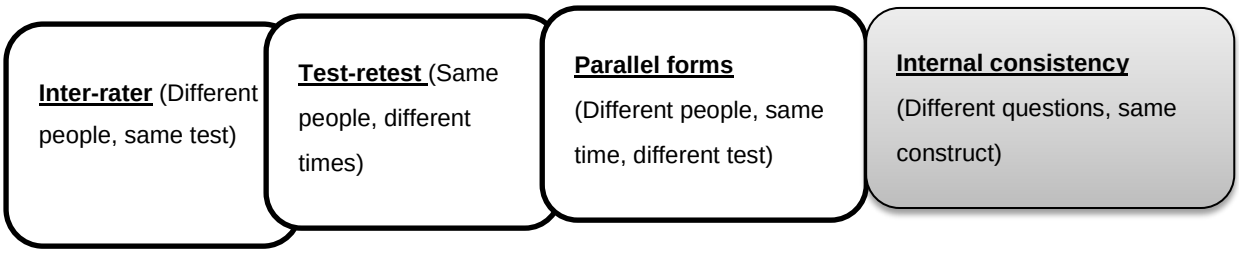


Figure 3.5: Different types of reliability

Source:(Field, 2013)

These types of reliability testing can be used, depending on the kind of measurement instrument used. Internal consistency is common in the entrepreneurship literature when conducting quantitative research to assess the consistency of research instruments used to collect data on constructs (Drost, 2011, p. 106; Field, 2009).

3.7.1.3 Internal Consistency

It focuses on the reliability measure of multi-item scales. It is used to evaluate the consistency of results across items within a test (Field, 2009). There are different tools and methods to assess internal consistency, and in this study, Cronbach Alpha was used through the SPSS platform;

Cronbach's Alpha: Alpha is a function of the extent to which items in a test have high commonalities and thus low uniqueness (Cortina, 1993). It calculates an equivalent to the average of all possible split-half correlations. Split-half correlation divides items that measure the same construct into two tests, which are applied to the same group of people, then calculates the correlation between the two total scores (Churchill Jr, 1979). Instead of using split-half correlation, this study used

Cronbach alpha which is equivalent to splitting data into two in every possible way; this is the most common measure of scale reliability (Cronbach, 1951; Field, 2009).

It is a measure of multi-item scale which is measured using a form of grouped correlation coefficient which ranges from zero to one, a coefficient close to one means high internal reliability but not unidimensional (Cronbach & Meehl, 1955; Field, 2013). The SPSS platform was used to perform the reliability test, and all the scales that had a Cronbach alpha greater than 0.7 were kept as this is an acceptable value in the entrepreneurship literature (Hof, 2012; J. Nunnally, 1978).

A Cronbach alpha of 0.7 suggests that the variability is approximately 70% true ability and 30% error. According to Field (2009), a Cronbach of more than 0.80 means excellent internal reliability and consistency of the multi-item set, but in this study, Nunnally's (1978) cut-off point of 0.7 was adopted since this is a basic study and lower cutoffs are acceptable (Field, 2009; J. Nunnally, 1978).

When running the reliability analysis on SPSS, the output provides or allows the user to select the following analysis tabs; inter-item correlation matrix, item statistics, item-total statistics and scale statistics over and above the overall Cronbach Alpha and Alpha based on standardised items. This study did not interpret all the statistics provided by the SPSS output but focused on only a few discussed below.

Inter-item correlation matrix: It compares correlations between all pairs of questions that test the same construct by calculating the mean of all paired correlations. It is the average of all the correlations. This result indicates to us whether the items are related and measuring the same construct. If the correlation coefficient is ($r>0.2$) and all positive, it suggests that the scale is reliable and convergent (Field, 2013).

Item total statistics**:** It provides scale mean if item deleted, scale variance if item deleted, corrected item-total correlation, squared multiple correlations and Cronbach's alpha if item deleted.

Item total statistic is the average inter-item correlations and calculates a total score for each item, then averages it (Churchill Jr, 1979). All the variables that had a corrected item-total correlation less than 0.2 were dropped from the study because they did not correlate well with the other items.

Items with a Cronbach's alpha if item deleted greater than the overall alpha were deleted until all were smaller than the overall alpha. The item statistics provides descriptive statistics which are the mean, standard deviation, and sample size. It is not enough to only test reliability because the fact that there is consistency does not necessary mean it is accurate, thus the need to test validity (Field, 2013).

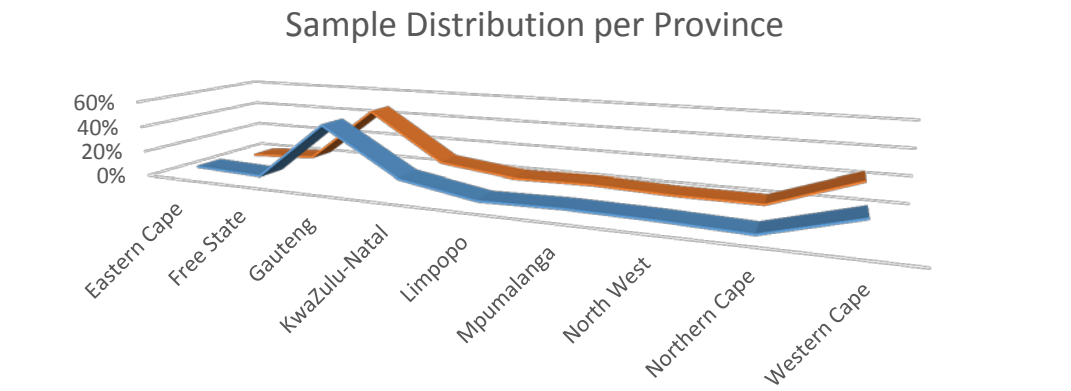
3.7.2 Validity Testing

Validity refers to the degree to which a measurement instrument measures the concept it purports to measure and not some other concept that it is not meant to be measuring (Field, 2009). Validity is mainly about the meaningfulness and accuracy of the research components (Drost, 2011). There are different types of validity; external, internal, face, content, criterion and construct validity and they are all measured differently because they assess a variety of aspects of the measurement instrument. This study did not use all the types of validity available to perform the test but only a few: external, internal and construct validity which are important for the type of instrument used in this study.

3.7.2.1 External Validity

External validity relates to the generalisability of the research findings to the population (D. R. Cooper et al., 2006). It is about ensuring that the findings from the sample will apply in real life and other contexts (Weiner, 2007). The sample data was collected across different settings: provinces with varying levels of economic development, different age groups and with owners exposed to various types of support. The diversity allowed the study to obtain valid results to generalise across SA's SME population. It was critical to examine if the validated instruments used in other countries would apply to the South African context.

Figure 3.6 shows the provincial distribution of SMMEs from the primary data collected in 2015 for this study, compared with the secondary data from the StatsSA 2007 integrated register. It is evident that the data collected can be used as a representative sample for South Africa because it takes all the provinces into consideration and has similar characteristics as the secondary data. Therefore, this study can generalise its findings and conclusions to SA SMMEs because the distribution of the two data sets seems similar.



	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	North West	Northern Cape	Western Cape
StatsSA	5%	3%	48%	13%	3%	4%	3%	1%	19%
This Study	1%	4%	48%	10%	3%	4%	2%	2%	25%

Figure 3.6: Geographic distribution of SMEs

Source: Stats SA Integrated Business Register, March 2007 and primary data collected in SA in 2015

Figure 3.6 illustrates the geographic distribution of the sampled data from the nine provinces of South Africa. Gauteng and Western Cape have the most SMEs, and this is not surprising because they are the two provinces that contribute the most to the country's GDP; followed by Kwazulu Natal which is the 3rd province with the most SMEs, but most of these SMEs are micro businesses (Ramukumba, 2014).

According to the data from StatsSA, it is evident that the environment (economic activity) of a particular province has an effect on the growth of the SMEs. The provinces with a more vibrant economy produce more SMMEs, their SMMEs show better growth and have better access to both financial and non-financial support when compared with provinces that are not economically vibrant. However, the SMMEs from provinces that are not as vibrant economically do not get the same benefit and thus show less or no growth.

3.7.2.2 Internal Validity

Internal validity relates to the accuracy of the research instrument used. This type of measurement focuses on whether the instrument consistently measures what it was meant to measure when repeated (D. R. Cooper et al., 2006). It is basically about how well the research is done, the lower the confounding, the better the internal validity (Weiner, 2007). This study ensured that internal validity was attained by using the same questionnaire in all provinces within the same period (Field, 2013).

The random selection of participants in all provinces should improve the results. The large sample size is expected to improve internal validity as well, and since this is not a newly developed instrument altogether, it should also contribute positively towards internal validity. The respondents were also asked to be as honest as possible when answering the questionnaire and this was emphasised. Therefore, all these steps taken during the research process assisted the researcher to realise high internal validity (Creswell, 2013).

3.7.2.3 Construct Validity

Construct validity is the extent to which the measurement is consistent with the theoretical constructs that are being measured (Cronbach & Meehl, 1955). Construct validity can be assessed in three ways; convergent, divergent and factor evidence (Weiner, 2007). In this section, both convergent and divergent/discriminant validity were examined through exploratory and confirmatory factor analysis.

3.7.2.4 Convergent Validity

It refers to the extent to which two measures of construct that theoretically should be related are in fact related (Weiner, 2007). All items should converge well to the construct they are measuring; high correlation is expected when items converge. Convergent validity alternatively is referred to as the degree to which a construct is represented by its measurement items (Sarstedt, Ringle, Smith, Reams, & Hair, 2014). Factor analysis was performed to test for convergent validity, and the following indices were interpreted; factor loadings ($\lambda \geq 0.3$), inter-item correlations ($r \geq 0.2$) and item-total correlations greater than 0.2 (Field, 2013).

3.7.2.5 Divergent Validity

It relates to the extent to which two measures of construct that are theoretically not related to each other are in fact observed not to be linked. Sarstedt et al. (2014) describes discriminant validity as the degree to which a construct is empirically different from other constructs in the model, both regarding how it links with other constructs and regarding how specifically the items represent only this single construct. The objective is not to have the same items measuring two different constructs well. The measure should demonstrate the uniqueness of the different variables and be able to discriminate between the various constructs (Field, 2013; Tabachnick & Fidell, 2003).

The correlation of the items measuring different constructs should be less than 0.3. Discriminant validity can be assessed using inter-construct correlation matrix (low), factor loadings (low) and average variance extracted (AVE>0.5) against shared variance. The correlation of discriminant factors should be lower than the correlation of convergent factors. According to Nusair et al. (2010), a low cross correlation signifies discriminant validity while the strong loading of items on their familiar construct is an indication of convergent validity and this was tested further with exploratory factor analysis. There is no validity without reliability, but there can be reliability without validity thus the need to test both (Field, 2009).

3.8 Statistical Techniques and Procedures

The objective of this study was to examine relationships between several predictor variables, quantify their effects on the dependent variable and use the significant statistical model to develop a framework for an integrated risk assessment tool. Using approximately three decision trees as a guideline, statistical techniques appropriate to answer the study's research questions and set objectives were selected. Each of these selected statistical procedures was used to address different statistical purposes (J. F. Hair et al., 2010; Howell, 2004; Tabachnick & Fidell, 2003).

Table 3.18: Decision Tree- Choosing Among Statistical Techniques

Research Question	No and Kind of DV	No and Kind of IV	Statistical procedure	Goal of Analysis
• **Degree of relationship** • **Form of relationship**	One continuous	Multiple Continuous	• Pearson Correlation • Multiple Regression	Create a linear combination of IVs to predict DV optimally.
• **Structure** • **Interdependence** • **Framework**	Multiple (continuous observed and/or latent)	Multiple (continuous observed and/or latent)	• EFA • CFA	Create linear combinations of observed and latent IVs to predict linear combinations of observed and latent DVs.

Source: Adapted from Tabachnick and Fidell (2003, pp. 29-30)

Table 3-18 provides this study with a guide on which statistical procedures were used to analyse the study variables and the details on each of these statistical techniques are discussed in the next subsections. There are four statistical techniques used as listed in the table above. The research started by discussing the Pearson correlation analysis, followed by factor analysis and concluded by discussing the main technique - hierarchical multiple regression.

3.8.1 Pearson Product Moment Correlation

Pearson correlation was used to determine the form and degree of relationship that exists between the IVs and DV and between the IVs themselves (Creswell, 2013). SPSS was used to conduct this analysis and understand the direction, strength, and significance of the different relationships. This analysis also helped to figure out if there are any linear relationships since this is a requirement for the multivariate analysis conducted in this study (Field, 2009).

3.8.2 Factor Analysis (EFA and CFA)

Factor analysis is a technique used to identify groups of variables measuring the same construct. In this study, factor analysis was used to determine the structure of latent variables, combine variables that are collinear and reduce the data set to a manageable size while retaining the key information (Field, 2009). Both exploratory and confirmatory factor analysis have been used intensively in previous studies to further test the construct validity and reliability of the questionnaire (Bornstedt, 1977) and confirm the measurement model validity and reliability. The first step in factor analysis is to ensure that the sample size is suitable for factor analysis (Costello & Osborne, 2005).

Sample size: The sample size is a prerequisite before performing EFA. This topic has been entertained intensively in section 3.3.4. The sample size required to ensure that the results are not sample-specific but can be generalised to the South African SMME population is a 5:1 to 20:1 ratio (observations/variable), (Field, 2009, 2013). The total sample size was 286 for all the variables including the outlier that was subsequently removed from further analysis.

It is evident that the minimum requirement was satisfied. The ratio of 5:1 is the minimum required, 10:1 recommended as an ideal sample/variable ratio and 20:1 is the best (Field, 2009, 2013; J. F. Hair et al., 2010). The study managed to attain a ratio higher than the 10:1 as recommended. Therefore, the sample size is big enough to conduct factor analysis without affecting the stability of the parameter estimates. This study, therefore, explored both EFA and CFA to develop a reliable and valid measurement model (Mundfrom et al., 2005).

3.8.2.1 Exploratory Factor Analysis (EFA)

In this study, EFA was used as a tool to determine the number of factors and to allocate each of the multiple items to a particular factor or construct (Suhr, 2006). The possible underlying structure of a set of interrelated variables was determined without imposing any preconceived structure on the data. During this process, the dimensionality of different measures was identified (Child, 1990; Holtzman & Vezzu, 2011).

The data was therefore reduced to a small set of summarised variables with 11 factors (including two dimensions of the dependent variable). The EFA process included producing a correlation matrix, identifying a suitable factor extraction method, followed by a selection of a suitable rotation and retention method which aimed at simplifying the interpretability of the dataset (Field, 2013; Tabachnick & Fidell, 2003).

Correlations: The importance of a correlation matrix in this specific context was to show the relationships between the items measuring the same factor and those measuring different factors. It gives an idea which items are measuring the same underlying variable so they can be grouped together. The correlation coefficients should be greater than 0.3, especially if the sample size is big and is starting to detect even small correlations as significant. The expectation is to have variables in the same group correlate higher compared to those in different groups thus attaining convergence and divergence validity (Habing, 2003; Tabachnick & Fidell, 2003).

Factor extraction: There are several factor analysis extraction methods, the most popular one being principal component analysis (PCA) which is a default selection in most statistical software thus its popularity (Field, 2009). Most researchers argue that PCA is just a data reduction technique which is not ideal for proper factor analysis while others argue that there is not much difference between PCA and principal axis factoring (PAF) (Costello & Osborne, 2005; Field, 2009; Hof, 2012).

Therefore, this study chose PAF as the extraction method and a statistical technique for factor analysis instead of PCA. There are a few benefits in using PAF. First, it does not assume that all the variance within a dataset is shared. Secondly, it allows factors to correlate. Thirdly it can be used even if multivariate normality is severely violated (Hof, 2012). Lastly, it is more reliable and robust than PCA when it comes to questionnaire evaluation (Costello & Osborne, 2005).

After factor extraction, it might be difficult to interpret the results based on their factor loadings thus the need for factor rotation to alter the pattern which will subsequently improve the interpretation (Field, 2000). Most researchers agree that direct extraction is not sufficient thus the need for factor rotation (Field, 2013; Hof, 2012; Suhr, 2006).

Factor rotation: Rotation is the process of manipulating the reference axis (Suhr, 2006). Promax, an oblique method of rotation was selected. According to Field (2009), the benefits of using this approach are that it allows factors to correlate. In social science studies, factors are correlated because social science deals with human behaviour and behaviour is never in compartments, but rather is dependent on others in one way or another (Field, 2009).

It is crucial to use this method to ensure that valuable information is not lost concerning possible relationships between factors. The advantage of using oblique method is that even if the factors turn out not to be correlated the results produced from orthogonal and oblique will be similar (Costello & Osborne, 2005). Once the results have been rotated then the critical decision is how many factors to retain.

Retention of factors: Three methods that were used to determine the number of factors to retain are; Kaiser's Criterion, the scree plot and percentage variance explained (Field, 2000).

[1] Kaiser's criterion*:* Kaiser criteria recommends that all factors with eigenvalues greater than one be retained (Field, 2009). However, because of the tendency of this method to over extract and retain too many factors which was the case in this study as well, scree plot was used in conjunction with the eigenvalues to determine a much cleaner result and address the over extraction problem. There are some guidelines as to how best to use eigenvalues and Table 3-19 provides the guidelines.

Table 3.19: Guide for Retention of reliable factors

Variables		
Hair, et.al. (1998)	**Stevens (2002)**	**Factors retained**
10 to 30 (communalities 0.7)	20 to 50	Good
	<20	Too few
>40 (communalities 0.4)	>50	Too many

Source: (Habing, 2003)

Table 3-19 illustrate that it is better to consider the commonalities and the number of variables when using Kaiser's rule of retaining as many factors as they have an eigenvalue greater than one due to the threat of under or over retention. The two recommendations are inconsistent, suggesting variables greater than ten and the other greater than twenty. This study considered both commonality greater or equals to 0.7 and variables greater than ten to make the decision (Habing, 2003).

[2] Scree Plot: The scree plot rule dictates that the number of factors corresponding to the last point before the curve flattens should be selected. According to Stevens (2002), the scree plot and Kaiser Criteria tend to be accurate when the number of observations is more than 250 with commonalities of 0.6 or more. The scree plot was manually tested with several predefined factor theoretical numbers, and the factor with a cleaner factor structure was selected (Stevens, 2002).

[3] Percentage Variance explained: The study targeted a minimum of 50% variance explained (recommended is 70 to 80%), with at least three items loading per factor (≥0.5), item loadings above 0.3 and no cross-loadings (Costello & Osborne, 2005). Cross loading refers to an item that loads at 0.3 or higher on more than one factor. If the above criteria are not met, it is best to drop that item (Tabachnick & Fidell, 2001).

The factors that explain the highest proportion of variance the variables share are expected to represent the underlying constructs. In contrast to the commonly used principal component analysis, factor analysis does not have the presumption that all variance within a dataset is shared (Costello & Osborne, 2005; Field, 2009). Once the EFA was completed, and the number of factors established, CFA was performed to confirm the factor structure and measurement model.

After conducting both EFA and CFA it was evident that there are benefits in running both analyses. CFA seemed to be more robust than EFA. Some of the items that loaded high and converged with EFA became divergent when testing the factor structure with CFA and had to be removed from the analysis. It is therefore important to test whether CFA produces significantly different results from EFA before deciding whether to use the results from EFA or from CFA.

3.8.2.2 Confirmatory Factor Analysis (CFA)

CFA is a particular type of structural equation modelling (SEM). The purpose of CFA was to test an hypothesis about a factor structure, to determine if the relationship between the observed variables and their underlying latent variables do exist (Suhr, 2006). The initial model has been established using EFA, and it was important to test the hypothesised measurement model now and see whether it provided a good fit. CFA was applied to confirm the measurement specifications using AMOS V23. The CFA process included; model identification, specification, estimation, modification and analysing the output (Field, 2013; Holtzman & Vezzu, 2011; Tabachnick & Fidell, 2003).

Model specification: CFA is a process of testing a theory, and therefore the hypothesised model must be specified up front. Since the initial model was established using EFA, the EFA output (the pattern matrix) from SPSS was used to specify the model to be verified by CFA. There were eleven latent variables identified by EFA and each with three or more manifest variables (Tabachnick & Fidell, 2003).

Model identification: This is the process of testing whether the model works. First, the program was asked to estimate all the variances and fix each of the paths from each LV to MV to one. The degrees of freedom (df) was used to determine whether the model is overidentified (df>0), just identified (df=0) or under-identified (df<0). A model is said to be identified if there is a unique numerical solution for each of the parameters in the model (Tabachnick & Fidell, 2003, p. 714).

Model estimation and fit: After the model had been specified, population parameters were estimated. The estimation procedure used in this study was a maximum likelihood. After the model had been specified and then estimated, the next step was to check the fit. There are numerous measures of model fit that have been proposed in the literature.

These include a comparative fit index (CFI, NFI, NNFI, IFI, and RMSEA), absolute fit index (MFI), indices of the proportion of variance accounted (AGFI), the degree of parsimony fit (PGFI, CAIC, AIC) and residual based fit indices (RMR, SRMR) (Hooper, Coughlan, & Mullen, 2008). This study used mainly comparative fit indices which range from zero to one, where any value close to one suggests good fit.

There are about five various indices used for comparative fit: Normed Fit Index (NFI≥0.95), Non-normed Fit Index (NNFI≥0.95), Comparative fit index (CFI≥0.95), Incremental fit index (IFI≥0.95) and Root mean square error approximation (RMSEA≤0.06). Anything less than 0.8 for NFI, CFI, NNFI, IFI and greater than 0.1 for RMSEA suggests bad fit. In this study, not all the indices were reported (Hooper et al., 2008; Hu & Bentler, 1999).

Chi-square is another way of assessing model fit. The theoretical model was compared with the reality model to see how well the data fits. First, the factor loadings were tested if they meet the criteria, the expectation is that $\lambda \geq 0.7$. Second, the chi-square test was performed to see if there is no significant difference between the theoretical model and the reality model. For the model to work, there should be no significant difference between the two models.

Chi-square should be close to zero and p-value should be greater than 0.05. Table 3-20 provides some of the critical cut-off values that were used as a guideline (Tabachnick & Fidell, 2003).

Table 3.20: Conventional Fit Statistics critical cutoff values

Fit Statistics	Good Fit	Ok Fit
Chi-square	Non-significant (p>0.05)	Significant with large sample
SRMSR & RMSEA	Less than 0.05	Less than 0.08
CFI & NNFI/ TLI	Greater than 0.95	Greater than 0.90

Source: (Habing, 2003; J. F. Hair, Black, Babin, Anderson, & Tatham, 1998; Hooper et al., 2008; Hu & Bentler, 1999)

Model modification: There are three basic methods of model modification; chi-square difference tests, Lagrange multiplier tests (LM), and Wald tests. All the methods are asymptotically equivalent under the null hypothesis, but approach model modification differently. In this study, the chi-square difference test approach was applied. It is an iterative process to help improve the model fit by reducing the chi-square value. The model modification is the process of adjusting different parameters if the model does not fit well. The process included examining the errors and the standardised regression weights wherever necessary. Errors that correlated from the same latent variable were allowed to covary (Tabachnick & Fidell, 2003). After the factor structure was established, multiple regression was used to test the hypotheses.

3.8.3 Hierarchical Multiple Regression

Hierarchical multiple regression is one of the major types of multiple regression also known as sequential multiple regression. Multiple regression is similar to multiple correlations except that it focuses on the prediction of DV from the scores of several IVs rather than just the relationships (Tabachnick & Fidell, 2003).

Sequential is self-explanatory; it means that there is a certain order followed to enter the independent variables when building the regression model. One of the reasons to use hierarchical is because the study wanted to focus in more detail on the unique contribution a set of predictor variables make in explaining the dependent variable within the bigger set of predictor variables. The linear regression command in SPSS was used to perform the two-step analysis process. This command enabled the researcher to add variables in blocks to the regression model (Field, 2013).

The study was theoretically categorised into three risk factors, which are the entrepreneur, the firm, and the environment. The objective of this study was to determine the effect of these risk factors on SME success. Consequently, the strength, direction, size and unique contribution of each factor and its dimensions were quantified. Since hierarchical regression analysis allowed this study to add variables in blocks, the first stage included only non-focal variables which the study needed to control for and the second step included the focal variables which are the variables of interest. The non-focal variables were measured as categorical data, and they were converted to dummy variables to allow adding the variables to the regression model (Tabachnick & Fidell, 2003).

Before adding the focal variables in the regression model, statistical regression and correlation analysis were employed to determine which focal variables should enter the regression model first based on their significance. There are critics in the literature regarding the use of statistical regression, but since this study does not only seek to test the theory but also to build a model which is an exploratory procedure, it was deemed appropriate to use this approach (Tabachnick & Fidell, 2003).

There are three versions of statistical regression: stepwise regression, backward deletion, and forward selection. Backward elimination method which is also known as step-down regression, bivariate correlations in conjunction with theoretical procedures were used to decide which predictor variables to enter into the model next after the control variables (Field, 2013).

Backward elimination started with a model with all the predictors and removed the variables with the largest p-value one at a time at each stage until the final significant model was completed. The Backward model tends to have more variables included in the model which provides more explanation whereas forward selection has fewer (Tabachnick & Fidell, 2003). For the purposes of this research, backward elimination was appropriate to achieve the study's objective.

The forward selection approach starts the model with no predictor variables and adds the variables with the highest correlation or theoretical importance first until there are no variables to add any more. This method tends to have fewer variables compared to the backward elimination procedure and provides parsimony more than explanation. The forward selection approach was not used since this study seeks to identify as much IVs as possible. Though a parsimonious model would be ideal, it was more important to produce a full model. The significance of the correlation between the different independent variables with the dependent was compared with the results from backward elimination method to ascertain variables of importance because these three methods sometimes produce different results (Tabachnick & Fidell, 2003).

Due to the challenges that come with using statistical regression, the variables that were finally included in the regression model were selected based not only on statistical procedures, but based on theoretical importance as well. The final predictive model was chosen based on the size of the standardised regression weights or slopes, the R-square, R-square change, R-square adjusted, the small residual sum of squares and the overall significance of the model of each variable (Tabachnick & Fidell, 2003).

These standardised regression weights helped to identify the uniqueness of each variable in the model. The R-square helped the study to be able to determine the amount of variability the IVs explain about the dependent variable variance. R-square adjusted penalised the study for adding more variables in the model; it is a process that is based on sample size and a number of variables (Tabachnick & Fidell, 2003).

The regression model showing only direct effects and relationship was not adequate to answer all the research questions and satisfy the study's objective. Therefore, mediation analysis was conducted to test indirect relationships between the variables.

3.8.3.1 Mediation Analysis

Mediation means that the independent variable affects the dependent variable through an intermediate variable called the mediator. In conducting the mediation analysis, the study followed the Baron and Kenny (1986) method. This method is widely used in literature. This method suggests a four-step approach when testing for mediation and this includes a series of regression analyses. See pictorial view of the four-step mediation process in Figure 3.7 in which the first three models are expected to be significant to suggest that mediation exist (R. M. Baron & Kenny, 1986; Tabachnick & Fidell, 2003).

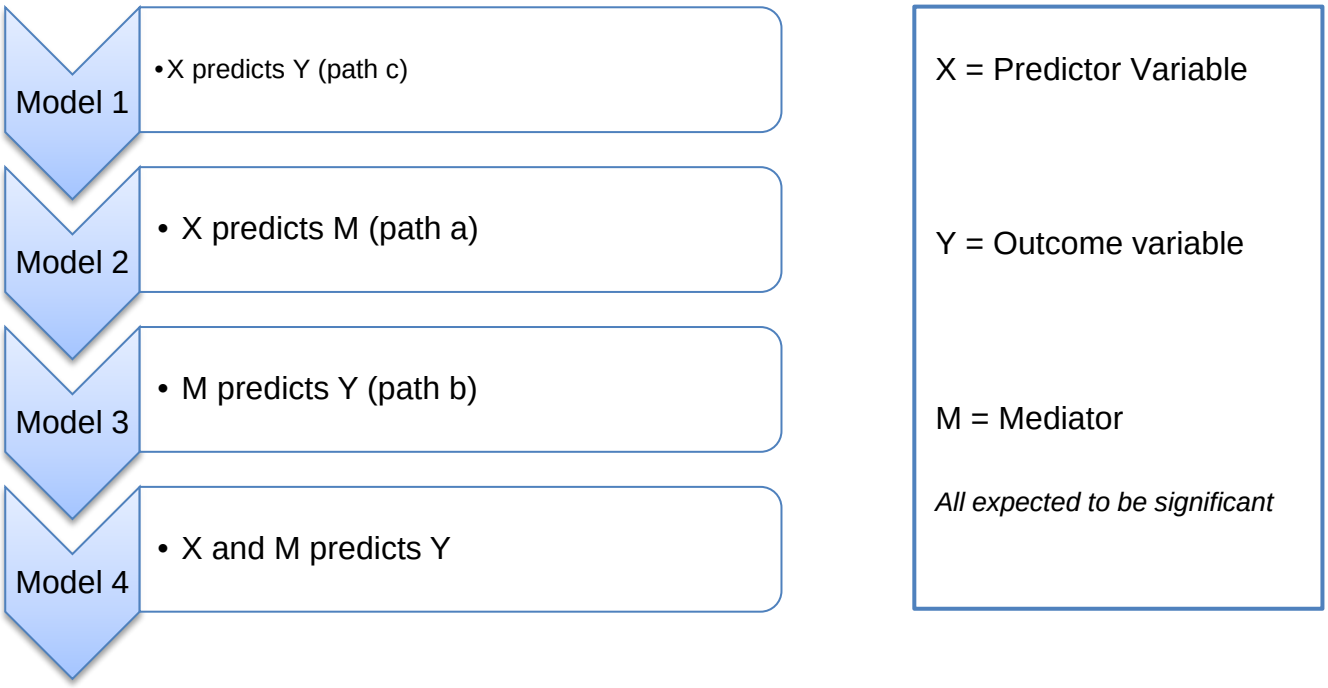


Figure 3.7: Mediation Process in Regresssion

Source: R. M. Baron and Kenny (1986)

The criterion to test for mediation is that the pairwise correlations and regression predictions should all be significant. According to Baron and Kenny (1986), if model one to three does not meet the criteria, usually it is assumed that mediation is unlikely or does not exist. However, MacKinnon, Fairchild, and Fritz (2007) argues that this is not always true. Therefore, this study tested for mediation based on theory even if the study's sample suggests that one of the three models are not significant (MacKinnon et al., 2007). Mediation occurs when a certain variable loses its strength regarding size or significance when a third variable is added (Field, 2013).

There are three expected possible outcomes when testing for mediation. First, when a path stays significant, and the strength does not decrease after adding a new variable, it means there was no mediation. Second, when a significant path stays significant, but the strength decreases after adding a new variable, it means there is partial mediation. Third, when significant path changes and become non-significant after adding a new variable, it means there is full mediation.

The method used does not come without challenges, one of the challenges is that it does not test the significance of the effect of the indirect paths where X predicts Y through M. However, there are two ways to address this challenge; first compute the difference between the two coefficients (B) of model 1 and model 2 or compute the product of path a and b. The two methods were proposed by Judd and Kenny (1981) and Sobel (1982) respectively and this study followed Sobel's approach. The significance of the indirect effect was tested using bootstrap method (R. M. Baron & Kenny, 1986; Sobel, 1982; Tabachnick & Fidell, 2003).

After running the four models, the ANOVA and coefficients output were observed for any changes and the results were then interpreted and reported acoordingly (Field, 2013).

3.9 Chapter Summary

This chapter focused on the research methodology covering the research philosophy and paradigms. This study was a quantitative study and adopted post-positivists philosophy. SPSS V23/24 was used for descriptive and exploratory analysis while AMOS V23 was used for confirmatory factor analysis. Data were collected using self-administered on-line questionnaires, and the respondents were entrepreneurs. Five business organisations were identified for sampling purposes and approached to participate in the study. The population of interest was SMEs in South Africa, and a sample size of 504 was achieved with 286 usable observations.

The data was first screened and cleaned to ensure the integrity and quaity of the data is not compromised. Moreover, it was tested for violation of any assumptions, and it was found that no assumptions were violated. The reliability and validity of the measurement scales were tested and found that they are reliable and valid. Those that did not meet the requirements were excluded from any further analysis.

The study continued and performed factor analysis, bivariate correlation, hierarchical multiple regression and mediation to establish the factor structure, determine the degree and form of the relationship between IVs and DVs, test the study's hypotheses, predict the DV using multiple IVs and establish indirect relationships respectively. Bivariate correlation emphasises the degree of relationship between the DV and the IVs, whereas multiple regression underscores the prediction of the DV from the IVs, thus the need to apply both.

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4 CHAPTER 4: RESULTS PRESENTATION AND INTERPRETATION

The objective of this chapter is to present and interpret the results from the study's analysis. The chapter begins with the presentation of the sample characteristics of the respondents (entrepreneurs), the firm, and the environment, followed by the reliability of the measurement of scales, then the exploratory and confirmatory factor analysis, the validity of the measurement of scales and lastly, the hierarchical multiple regression with mediation analysis.

4.1 Sample Characteristics

This subsection is divided into three parts. The first part focuses on the respondents' characteristics, and in this case, the respondents are the entrepreneurs. The second part describes the firm's characteristics referred to as the SMEs in this study. The last part presents the environmental characteristics.

4.1.1 Respondents Characteristics

There were 504 responses received, 26 were excluded because they did not meet the SMME criteria and only 478 were within the inclusion criteria. Out of the 478 that were categorised as SMMEs, not all the data was usable. A total of 192 responses had missing data which was mainly incomplete responses. After all the screening and cleaning of the data set, the researcher was left with a sample size of 286 for further analysis.

4.1.1.1 Gender and Race

Sample characteristics results reveal that more males (58%) than females (42%) were sampled overall. Most of the respondents were white (47%) followed by Blacks (42%), Coloureds (7%) and the other race groups tally to only 4% combined. Table 4-1 illustrates how the sample is distributed according to gender and race.

Table 4.1: Gender and Race Cross Tabulation

			Race					
			Black	Colored	Indian	Other	White	Total
Gender	Female	Count	55	8	3	3	51	120
		% within Race	45.8%	40.0%	30.0%	100.0%	38.3%	42.0%
	Male	Count	65	12	7	0	82	166
		% within Race	54.2%	60.0%	70.0%	0.0%	61.7%	58.0%
Total		**Count**	**120**	**20**	**10**	**3**	**133**	**286**
		% within Race	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

4.1.1.2 Age Group

Table 4-2 shows that most respondents (29%) were in the 36-45 age group, followed by the 26-35 age group (26%), 46-55 age group (23%) and (20%) in the 55+ years age group. The 36-45 age group is deemed as the most economically active group by GEM report (Mike & Penny, 2016). Only 2% was in the 18-25 age group which is only six young entrepreneurs. This result suggests a need to develop and promote youth entrepreneurs, especially in a country where youth unemployment is very high.

Table 4.2: Age Group

		Frequency	Percent	Cumulative Percent
Valid	18 – 25	6	2.1	2.1
	26 – 35	73	25.5	27.6
	36 – 45	84	29.4	57.0
	46 – 55	66	23.1	80.1
	Above 55	57	19.9	100.0
	Total	**286**	**100.0**	

Source: Primary Data

4.1.1.3 Education

Regarding education, 96 of respondents had post-graduate as highest qualification, followed by 87 Diplomas, 62 hold a Bachelor's degree as their highest qualification, 34 had matriculation, 5 had no matriculation, while 2 had no schooling or had not completed primary education. This sample was a highly-educated sample which can be attributed to the fact that most of the data were collected online, specifically from LinkedIn, which is a platform for professionals and is likely to attract educated individuals who have professional profiles. Figure 4-1 illustrates the education percentage distribution of respondents.

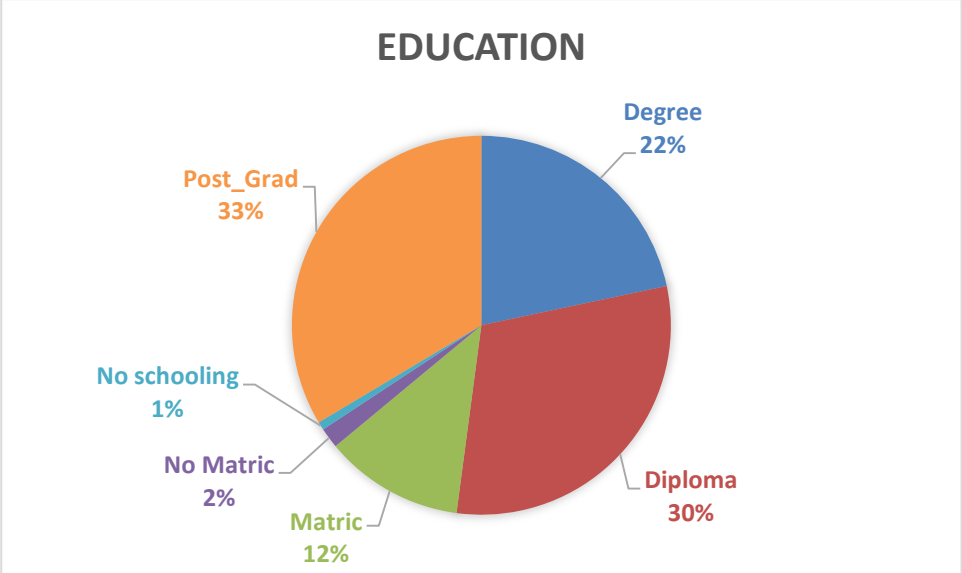


Figure 4.1: Level of Education

Source: Primary Data

4.1.1.4 Time Spend in Business

Regarding the time the entrepreneurs devote to their businesses, the sample reveals that 80% of the respondents run their businesses on a full-time basis while only 20% are part-time. Approximately 40% of the entrepreneurs have been in business for more than six years, 25% have been in business for five to six years, 12% between three to four years and 12% between one to two years while only 1% has been in business for less than a year. The results reveal a very

experienced sample where 75% of the entrepreneurs have been in business for five years and more. However, this is not reflected in the SMME sizes, revenue, employees, and growth in general, thus suggesting growth challenges.

4.1.2 Firm Characteristics

Initially, the study was meant to focus on SMEs, but after collecting the data, it was evident that there are a lot of micro businesses which are formalised but still at a micro level and thus their inclusion in the study. Subsequently, the sample was restricted to only SMMEs as described by the South African government. Most of the firms are micro (33%), very small (25%) and small (28%) which makes up 86% of the enterprises sampled, while only 14% are medium size.

Most (43%) of these businesses remain SMMEs even after five years of operation, evidence of slow or no growth. 25% of the enterprises have been operating for less than two years, 19% up to three years and 13% for up to five years. It is evident that most of these enterprises have been operating as small businesses for more than six years without transiting to established medium to large businesses.

Table 4-3 illustrates the relationship between the number of years the business has been in operation and the business size. The study expected a positive correlation between business age and size, but there is no clear evidence of such from the table. The researcher expected the results to show that businesses that have been operating for a long-time transit from micro to medium over a period of time but the results do not reflect this.

Table 4.3: SMME size versus Business Age

Count		Business Age				Total
		0.5- 1.9yr	2 - 3yrs	4 - 5yrs	More than 6yrs	
Size04_SMME	Medium	3	3	2	34	42
	Micro	42	17	13	21	93
	Small	12	12	9	46	79
	Very Small	13	23	13	23	72
Total		**70**	**55**	**37**	**124**	**286**

4.1.3 Environment Characteristics

The study focused on the South African environment which is an emerging market. The environment in South Africa is dynamic, consisting of both developed and not developed areas. The sample characteristic results reveal that most of the small businesses (87%) sampled operate in developed areas, 7% operate in a "mixed development" while 6% operate in areas that are not developed. These areas are found in nine provinces. This characteristic can also be attributed to the sampling frame, a professional on-line platform, LinkedIn, was one of the platforms used to collect data and entrepreneurs in an undeveloped area normally do not have access to such. The sample further revealed that most of the respondents were from developed areas like Cape Town and Johannesburg.

Table 4.4: Area level of Development

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Developed	249	87.1	87.1	87.1
	Mix development	21	7.3	7.3	94.4
	Not developed	16	5.6	5.6	100.0
	Total	**286**	**100.0**	**100.0**	

4.1.3.1 Location

Some of the enterprises have offices across various provinces while others have an office in only one province. Most businesses sampled are located in the Gauteng province (50%) followed by Western Cape (25%), KwaZulu-Natal (10%) and a total of 15% is shared by the other provinces with each of them having 4% or less representation. The distribution of the sample is consistent with the status core in the country because Gauteng is the economic hub of South Africa thus expected to have more representation. Overall, all provinces are represented in the sample. Only the representation regarding location has been reported in this study, but it is important to note that some of the businesses operate in more than one province though they have indicated that they are located in one province. Figure 4.2 illustrates the number of SMMEs sampled in each province.

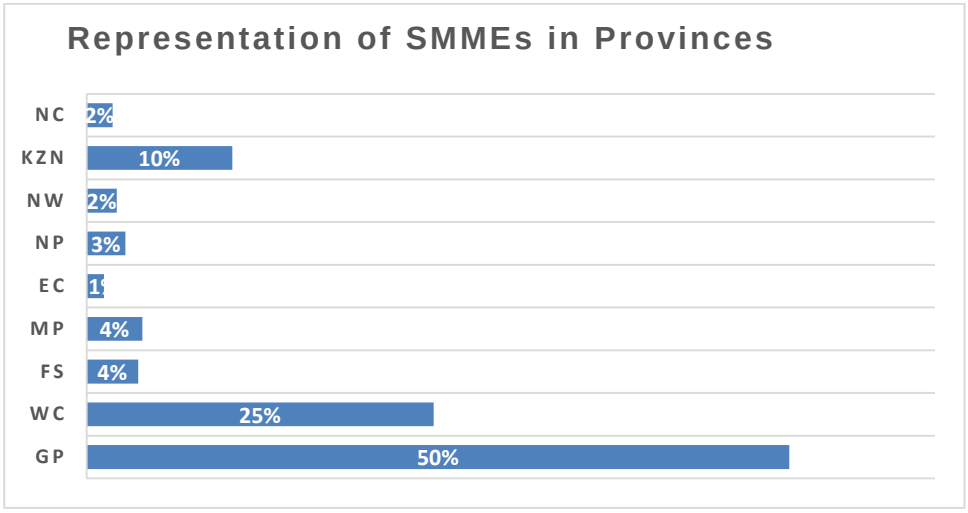


Figure 4.2: Distribution of SMMEs in Provinces

NP-Northern Province, KZN-KwaZulu Natal, NW-North West, EC-Eastern Cape, MP-Mpumalanga, FS-Free State, WC-Western Cape and GP-Gauteng

4.1.3.2 Sector

The sample is representative of all sectors or industries in the South African small business environment. Most of the enterprises are in the professional and business services sector, 36% and 28% respectively, but 23% of them did not specify their industry. Manufacturing is 13%, Retail is 11%, Technology is 13%, Construction is 10%, and Tourism, NPO, Agriculture, Communication were all below 8.5% with mining being the least represented at 2%.

4.1.3.3 External Support

This study looked at two different kinds of support, one in the form of membership and the other regarding outsourcing support as and when needed. Approximately half of the respondents belonged to a business organisation which is attributed to the sampling frame. The study sampling frame included random sampling within business organisations and small business organisations. 44% (126) of the respondents belonged to a support structure while 56% (160) did not belong to any business support structure. Some (20%) of the entrepreneurs, though they were not members of any business organisation, still used external SMME support structures for support, most (70%) do not use any external support structures while 10% chose to remain neutral.

Table 6-1 in Appendix B provides the descriptive statistics of the sample after it has been screened for data quality. The final sample size after addressing the issue of missing data and outliers was (N=285) with mean values between 1.95 to 4.31, the median between 1.83 and 4.33 and SD between 0.58 to 1.21. This is the sample size that was used for further analysis.

4.2 Reliability of Measurement Scale Results

Table 4-6 summarises the overall result from the scale reliability test of all the constructs, providing the number of items measuring each construct, the Cronbach alpha per construct, the number of items deleted to improve the scale reliability and the first alpha before deleting the problematic items.

Seven constructs were measured using Cronbach alpha, and the results show that the reliability of the scale was excellent ranging from 0.757 (RP) to 0.939 (BS_F).

Proceeding from the discussion of internal reliability in section 3.8, literature asserts that a higher level of Cronbach's coefficient alpha indicates a higher reliability of the measurement scale (Cronbach, 1951). From Table 4-6 it is clear that all the alphas are above 0.7 and were accepted as recommended by J. C. Nunnally and Bernstein (1994). As part of testing the details of the Cronbach alpha, the corrected item-total correlation, and Cronbach's alpha if the item is deleted were also assessed.

Table 4.5: Summary of construct reliability results

High-Level Factors	Constructs	Code	Latent Factors	No. of Items	α before adjustment	Items deleted	α after adjustment
Independent Variable	SME Success	BS_G	Business Growth	6	0.883	None	0.883
		BS_F	Business Financial Performance	6	0.939	None	0.939
Environment	Risk Perception	RP	Risk Perception	7	0.757	3	0.757
Entrepreneur	Human Capital	HC	Business Training	5	0.792	2	0.874
	Cognitive Styles	CS_K	Knowing	3	0.795	None	0.795
		CS_P	Planning	7	0.842	None	0.842
		CS_I	Intuitive	6	0.813	2	0.834
	Entrepreneurial Self Efficacy	ESE_M	Management	6	0.799	None	0.799
		ESE_F	Finances	3	0.826	None	0.826
		ESE_G	Growth	5	0.829	None	0.829
Firm	Business Planning	BP	Business Planning	3	0.708	3	0.824
	Financial Capital	FC	Financial Capital	5	0.838	None	0.838

Source: Primary Data

Corrected item-total correlation refers to the correlation between each item and the total score. It should not be less than 0.3. Otherwise, that item should be dropped to improve reliability. Items which produced a substantial or sudden drop in the item to total correlation were eliminated. Cronbach's alpha if item is deleted are the values of overall alpha if that item is deleted.

All values should be close to the overall alpha to be retained, any value that is substantially greater than the overall alpha when deleted was then dropped (Field, 2009). The reliability results of each construct are discussed next, starting with SME success, followed by risk perception, then business planning, financial capital, cognitive styles, ESE and finally, human capital.

4.2.1 SME Success

SME success had two measurement scales; business growth (BS_G) and business financial performance (BS_F). Table 4-7 and Table 4-8 provide the detailed results which show that business growth and financial performance scales are good (six items, α=0.883) and (six items, α=0.939) respectively. Table 4-7 (BS_G) shows an improvement of the Cronbach's alpha if item (BS06; α=0.889) is deleted. Item BS06 was retained despite the said improvement because it is close enough to the overall alpha and this is a slight improvement, and the corrected item-total correlation is greater than 0.3.

Table 4-8 (BS_F) shows that the scale is highly reliable, there is no substantial change when any of the items are deleted, and the corrected item-total correlation is greater than 0.3 for all six items. Therefore, the scales were accepted as reliable and consistent.

Table 4.6: Item Total Statistics(Business Growth)

BS_G	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Alpha
BS01	9.46	14.306	.778	.685	.848	**0.883 (6 items)**
BS02	9.74	15.424	.722	.535	.858	
BS03	9.65	15.278	.717	.588	.858	
BS04	10.07	16.368	.656	.492	.869	
BS05	9.40	14.783	.773	.646	.849	
BS06	10.13	16.679	.522	.330	.889	

Table 4.7: Item Total Statistics(Business Financial Performance)

BS_F	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Alpha
BS07	14.24	23.128	.869	.817	.921	**0.939 (6 items)**
BS08	14.24	23.642	.849	.808	.923	
BS09	14.32	23.752	.821	.741	.927	
BS10	14.31	24.326	.849	.769	.924	
BS11	14.21	23.979	.782	.718	.932	
BS12	14.36	24.810	.735	.672	.937	

The inter-item correlations were assessed, and Table 4-9 provides the results for both business growth and financial performance. All inter-item correlations are >0.3, indicating that all items correlate with their respective scales. All scales, therefore, demonstrate convergent validity.

Table 4.8: Inter-Item Correlation Matrix (SME Success)

Inter-Item Correlation Matrix- BS_G

BS_G	BS01	BS02	BS03	BS04	BS05	BS06
BS01	1.000					
BS02	.664	1.000				
BS03	.734	.637	1.000			
BS04	.514	.515	.460	1.000		
BS05	.741	.609	.635	.631	1.000	
BS06	.403	.448	.376	.536	.431	1.000

Inter-Item Correlation Matrix- BS_F

BS_F	BS07	BS08	BS09	BS10	BS11	BS12
BS07	1.000					
BS08	.876	1.000				
BS09	.784	.768	1.000			
BS10	.785	.805	.830	1.000		
BS11	.703	.641	.654	.664	1.000	
BS12	.643	.627	.581	.630	.804	1.000

4.2.2 Risk Perception

Table 4-10 shows that the risk perception scale was good at greater than 0.7 (seven items, α=0.757). None of the items could improve the overall reliability when deleted including the items that had inter-item correlations lower than 0.2, and the corrected item-total correlations were all greater than 0.3. Therefore all items were retained.

Table 4.9: Item-Total statistics (Risk Perception)

RP	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Alpha
RP06	19.57	19.415	.536	.372	.713	
RP07	18.38	21.383	.444	.251	.734	
RP08	18.94	20.743	.443	.302	.735	**0.757**
RP09	18.08	23.518	.327	.248	.754	**(7 items)**
RP10	18.70	20.675	.560	.360	.711	
RP11	19.80	19.832	.510	.467	.719	
RP12	19.58	20.336	.500	.402	.721	

Table 4-11 shows good intercorrelation coefficients except for RP11 and RP12 which shows values lower than 0.2, but all seven items were retained irrespective of the low inter-item correlation otherwise when deleted, it decreased the reliability of the scale and a decision was taken to retain them.

Table 4.10: Inter-Item Correlation Matrix

RP	RP06	RP07	RP08	RP09	RP10	RP11	RP12
RP06	1.000						
RP07	.335	1.000					
RP08	.474	.286	1.000				
RP09	.108	.374	.229	1.000			
RP10	.335	.307	.382	.392	1.000		
RP11	.421	.205	.187	.090	.412	1.000	
RP12	.332	.271	.181	.171	.334	.610	1.000

4.2.3 Business Planning

Business Planning (BP) had a good reliability scale (6 items; α=0.708) which is >0.7. However deleting items– BP03, BP04, and BP06 which had low inter-item correlations improved the scale even further (3 items; α =0.824). The results are presented in Table 4-12 with all corrected item-total statistics >0.3; BP02 show improvement of scale if it is deleted, but it could not be deleted because the rule of retaining a minimum of three items would be violated. Therefore, it was retained, and the scale was deemed reliable and consistent.

Table 4.11: Item-Total Statistics (Business Planning)

BP	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Alpha
BP01	6.33	4.857	.716	.550	.720	**0.824 (3 items)**
BP02	7.10	5.821	.589	.349	.843	
BP05	6.39	4.674	.743	.575	.690	

All inter-item correlations are >0.3, indicating that all items correlate with their respective scales. All scales, therefore, demonstrate convergent validity.

Table 4.12: Inter-Item Correlation Matrix (Business Planning)

BP	BP01	BP02	BP05
BP01	1.000		
BP02	.529	1.000	
BP05	.728	.565	1.000

4.2.4 Financial Capital

The reliability scale of financial planning was not good (10 items; α=0.557). Though according to Nunnally in Coldwell and Fried (2012, p. 107), an alpha of 0.5 is considered acceptable in basic research.

However, it was not acceptable in this study due to the negative inter-item correlations. An iterative process was followed guided by the improvement shown on the Item-Total Statistics if the item is deleted to fix the unreliability of the scale.

Some items were removed which improved alpha from 10 items; α=0.557 to 5 items; α=0.838. These alphas were an excellent, reliable scale and once we could not improve the scale any further, then it was accepted as reliable, leaving us with five items. Table 4-14 provides the final results.

Table 4.13: Item-Total Statistics (Financial Capital)

FC	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Alpha
FC04	10.29	16.728	.560	.410	.831	
FC06	10.77	16.585	.584	.408	.823	
FC08	10.98	17.038	.624	.537	.810	**0.838 (5 items)**
FC09	11.00	16.113	.784	.723	.768	
FC10	11.23	17.240	.688	.603	.795	

All items with negative and low inter-item correlation were eliminated during the iterative process of improving the overall alpha. All inter-item correlations (Table 4 15) are >0.3, indicating that all items correlate with their respective scales. All scales, therefore, demonstrate convergent validity and are reliable.

Table 4.14: Inter-Item Correlation Matrix (Financial Capital)

FC	FC04	FC06	FC08	FC09	FC10
FC04	1.000				
FC06	.590	1.000			
FC08	.341	.372	1.000		
FC09	.491	.470	.727	1.000	
FC10	.388	.444	.611	.767	1.000

4.2.5 Cognitive style

Cognitive style was measured with three sub scales; knowing, planning and intuitive. Three separate reliability tests were conducted to test each scale independently

4.2.5.1 Cognitive Style- Knowing

Table 4-16 shows a good reliable scale (3 items; α=0.795) which is >0.7 with all corrected item-total correlations greater than 0.3. The results suggest that if item CS03 is deleted, the reliability of the scale would improve to 0.834. However, only two items remain after deletion, which would violate the minimum required number of items, thus the retention of CS03.

Table 4.15: Item-Total Statistics (CS-Knowing)

CS_K	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Alpha
CS01	8.28	1.991	.679	.527	.677	
CS02	8.11	1.978	.713	.551	.641	**0.795 (3 items)**
CS03	8.17	2.178	.531	.285	.834	

Table 4.16: Inter-Item Correlation Matrix(CS_Knowing)

CS_K	CS01	CS02	CS03
CS01	1.000		
CS02	.716	1.000	
CS03	.472	.512	1.000

All inter-item correlations are >0.3, indicating that all items correlate with their respective scales. All scales, therefore, demonstrate convergent validity and reliability.

4.2.5.2 Cognitive Style- Planning

Table 4-18 provides corrected item-total correlations>0.3, Cronbach's alpha if item deleted < 0.842 overall alpha and CS09=0.843 if deleted. The scale is good (7 items; α=0.842) and all items were retained, including CS09, since it makes no substantial improvement to the overall alpha.

Table 4.17: Item-Total Statistics (CS-Planning)

CS_P	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Alpha
CS04	24.31	14.758	.611	.446	.819	
CS05	24.30	14.640	.669	.517	.811	
CS06	24.53	13.158	.685	.531	.806	
CS07	24.64	13.817	.609	.443	.820	**0.842 (7 items)**
CS08	24.41	14.270	.595	.412	.821	
CS09	24.44	15.831	.434	.257	.843	
CS10	24.27	15.203	.603	.399	.821	

Table 4-19 provides inter-item correlation of the seven items measuring cognitive style-planning. The result shows that all the inter-item correlations are >0.3 except for only two items <0.3 but still acceptable, indicating that all items correlate with their respective scales. All scales, therefore, demonstrate convergent validity and reliability.

Table 4.18: Inter-Item Correlation Matrix(CS_Planning)

CS_P	CS04	CS05	CS06	CS07	CS08	CS09	CS10
CS04	1.000						
CS05	.606	1.000					
CS06	.555	.602	1.000				
CS07	.381	.500	.583	1.000			
CS08	.385	.361	.464	.515	1.000		
CS09	.341	.377	.264	.243	.346	1.000	
CS10	.403	.427	.458	.394	.520	.435	1.000

4.2.5.3 Cognitive Style- Intuitive (CS_I)

The scale reliability was (8 items; α= 0.813) before adjustment which was still within the required range, but there was evidence that the scale could improve further if item CS18 and CS16 could be removed. Table 4-20 provides the final Cronbach's Alpha if Item Deleted and becomes less than overall alpha, corrected item-total correlation >0.3 and scale reliability (6 items;α=0.834) which was good and the scale was deemed reliable.

Table 4.19: Item-Total Statistics (CS-Intuitive)

CS_I	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Alpha
CS11	21.33	9.074	.650	.550	.802	
CS12	21.44	8.945	.651	.534	.801	
CS13	21.42	8.548	.727	.652	.785	**0.834**
CS14	21.60	8.501	.587	.373	.812	**(6 items)**
CS15	21.82	8.464	.537	.337	.825	
CS17	21.69	8.487	.558	.319	.819	

The Inter-Item Correlation Matrix showed low values for CS16 and CS18, thus removing them addressed this issue. All the remaining inter-item correlations are >0.3, indicating that all items correlate with their respective scales. All scales, therefore, demonstrate convergent validity and reliability.

Table 4.20: Inter-Item Correlation Matrix (CS_Intuitive)

CS_I	CS11	CS12	CS13	CS14	CS15	CS17
CS11	1.000					
CS12	.625	1.000				
CS13	.716	.702	1.000			
CS14	.411	.408	.503	1.000		
CS15	.337	.377	.383	.503	1.000	
CS17	.426	.405	.464	.401	.445	1.000

4.2.6 Entrepreneurial Self-Efficacy (ESE)

Entrepreneurial self-efficacy was measured with three sub-scales; management, finance, and growth. Three separate reliability tests were conducted to test each scale independently.

4.2.6.1 Entrepreneurial Self-Efficacy- Management (ESE_M)

The scale reliability was (6 items; α= 0.799) before adjustment which was still within the required range, but there was evidence that the inter-item correlation could improve if item ESE02 could be removed without substantially reducing the scale reliability. After the item was removed, Table 4-22 provides the final Cronbach's Alpha if Item Deleted which is less than overall alpha, corrected item-total correlation, >0.3 and scale reliability (5 items;α=0.797) which was good and the scale was deemed reliable.

Table 4.21: Item-Total Statistics (ESE_M)

ESE_M	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Alpha
ESE01	13.96	10.639	.519	.288	.780	**0.797 (5 items)**
ESE03	13.28	11.401	.586	.352	.759	
ESE04	13.60	10.860	.485	.278	.791	
ESE05	13.34	10.148	.719	.549	.715	
ESE06	14.00	10.349	.617	.464	.746	

Table 4-23-The Inter-Item Correlation Matrix showed low values for ESE02 thus removing it addressed this issue. All the remaining inter-item correlations are >0.3, indicating that all items correlate with their respective scales. All scales, therefore, demonstrate convergent validity and reliability.

Table 4.22: Inter-Item Correlation Matrix (ESE_M)

ESE_M	ESE01	ESE03	ESE04	ESE05	ESE06
ESE01	1.000				
ESE03	.385	1.000			
ESE04	.298	.455	1.000		
ESE05	.493	.513	.460	1.000	
ESE06	.448	.443	.334	.658	1.000

4.2.6.2 Entrepreneurial Self-Efficacy- Finances (ESE_F)

Table 4-24 present a Corrected Item-Total Correlation greater than 0.3 for all three items, Cronbach's Alpha if Item Deleted of (ESE07=0.847, ESE08=0.703, and ESE09=0.723) close to the overall alpha and overall reliability scale (3 items; α=0.826). The overall scale is good >0.7, and all the items were retained though removing ESE07 could increase the scale to 0.847. However, it was not removed to maintain the minimum required number of items per construct of three.

Table 4.23: Total-Item Statistics(ESE_F)

ESE_F	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Alpha
ESE07	7.10	3.958	.595	.356	.847	**0.826 (3 items)**
ESE08	6.60	3.733	.742	.582	.703	
ESE09	6.69	3.603	.718	.564	.723	

Table 4-25 shows that all the inter-item correlations are >0.3, indicating that all items correlate with their respective scales. All scales, therefore, demonstrate convergent validity and reliability.

Table 4.24: Inter-Item Correlation Matrix (ESE_F)

ESE_F	ESE07	ESE08	ESE09
ESE07	1.000		
ESE08	.567	1.000	
ESE09	.542	.736	1.000

4.2.6.3 Entrepreneurial Self-Efficacy- Growth (ESE_G)

The scale reliability was (6 items; α= 0.808) before adjustment which was still within the required range, but there was evidence that the scale could improve if item ESE15 could be removed. After the item was removed, Table 4-26 shows the final Cronbach's Alpha if Item Deleted which is less than overall alpha, corrected item-total correlation >0.3 and scale reliability (5 items;α=0.829) which was good and the scale was deemed reliable.

Table 4.25: Item-Total Statistics (ESE_G)

ESE_G	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Alpha
ESE10	14.16	9.861	.593	.384	.804	
ESE11	14.00	10.461	.541	.321	.818	
ESE12	14.63	9.425	.682	.469	.780	**0.829**
ESE13	14.71	8.734	.672	.492	.782	**(5 items)**
ESE14	14.49	9.033	.653	.472	.787	

Table 4-27 shows that all the inter-item correlations are >0.3 after removing ESE15 which had a lower value, indicating that all items correlate with their respective scales. All scales, therefore, demonstrate convergent validity and reliability.

Table 4.26: Inter-Item Correlation Matrix (ESE_G)

ESE_G	ESE10	ESE11	ESE12	ESE13	ESE14
ESE10	1.000				
ESE11	.419	1.000			
ESE12	.515	.486	1.000		
ESE13	.418	.479	.584	1.000	
ESE14	.534	.359	.528	.601	1.000

4.2.7 Human Capital

Human Capital was measured with four different constructs; Level of education (HC01), Business experience (HC_BE), work experience (HC_WE) and business training (HC_BT). The level of education and HC_BE were measured with categorical and continuous variables respectively, and there was no need to do the reliability tests on the two.

4.2.7.1 Human Capital (Work Experience)

The scale reliability was (5 items; α= 0.529) before adjustment which is not a good scale, items HC07 and HC11 were removed to improve the scale, but it was still below 0.7. Table 4-28 shows the final Cronbach's Alpha if Item Deleted with HC10 suggesting that the scale can be improved to (α=0.689), but this would reduce the number of items to two which is not acceptable. The corrected item-total correlation was >0.3 except for HC10 and scale reliability (3 items;α=0.585) which suggest this is not a good reliable scale.

Table 4.27: Item-Total Statistics (HC_WE)

HC_WE	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Alpha
HC08	7.47	4.194	.589	.350	.139	**0.585 (3 items)**
HC09	7.13	4.709	.419	.284	.454	
HC10	6.31	7.833	**.222**	.107	.689	

Table 4-29 shows that two inter-item correlations are >0.3 and one (HC10/HC09<0.3) and this is not a good inter-item correlation and the scale does not look stable and reliable. Therefore it was eliminated from any further analysis.

Table 4.28: Inter-Item Correlation Matrix (HE_WE)

HC_WE	HC08	HC09	HC10
HC08	1.000		
HC09	.526	1.000	
HC10	.312	**.081**	1.000

4.2.7.2 Human capital (Business training)

The scale reliability was (7 items; α= 0.792) before adjustment which is a good scale, items HC17 and HC18 were removed to improve the scale. Table 4-30 shows the final Cronbach's Alpha if Item Deleted is lower than the overall alpha except for HC12 which indicates that the scale can be improved to (α=0.888), but this would not improve the scale substantially and thus was retained. All the corrected item-total correlation was >0.3 and scale reliability (5 items;α=0.874) which suggest this is a good reliable scale

Table 4.29: Item-Total Statistics

HC_BT	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	Alpha
HC12	12.57	25.014	.549	.320	.888	**0.874 (5 items)**
HC13	12.16	22.504	.832	.787	.815	
HC14	12.33	23.477	.785	.734	.828	
HC15	12.26	23.087	.806	.736	.822	
HC16	13.21	26.204	.571	.343	.877	

Table 4-31 provides inter-item correlation of the five items measuring human capital (business training). The result shows that all the inter-item correlations are >0.3 except for the two items that were deleted, indicating that all items correlate with their respective scales. All scales, therefore, demonstrate convergent validity and reliability.

Table 4.30: Inter-Item Correlation Matrix (HC_Business Training)

HC_BT	HC12	HC13	HC14	HC15	HC16
HC12	1.000				
HC13	.518	1.000			
HC14	.464	.839	1.000		
HC15	.462	.830	.793	1.000	
HC16	.453	.500	.468	.538	1.000

4.3 Exploratory Factor Analysis (EFA)

Exploratory factor analysis was performed using SPSS for all the item scales to determine the number and structure of factors. It was also used to test the convergence and divergence of the different items and factors, basically testing the relationship between factors and their observed variables. The extraction method used was principal axis factoring (PAF) with Kaiser's criterion and scree plot. The rotation method used to optimise the factor structure was Promax which is an Oblique method. Oblique rotation was chosen because the factors are posited to be interrelated. The pattern matrix was preferred over structure matrix for interpretative purposes because it contains information about the unique contribution of a variable to a factor and is easy to interpret (Field, 2013).

The chapter begins by reporting and interpreting the EFA results of each of the analysed constructs or risk factors. The section has six subsections; starting with SME success, followed by risk perception, business planning, cognitive styles, entrepreneurial self-efficacy and ending with the human capital risk factor.

4.3.1 SME Success (Dependent Variable)

A principal axis factoring was conducted on 12 items of SME success with oblique rotation (Promax). Table 4-32 shows that two factors were extracted with six items each. The two factors relate to business growth (BS_G) and business financial performance (BS_F), each with factor loadings well above the acceptable limit of .5 from (.606 to .815) and (.662 to .958) respectively. There was a convergence between scree plot and Kaiser Criterion of eigenvalue greater than one. Based on the sample size (n=285) and factor loadings greater than .4 and each variable explaining more than 16% of the variance, it was concluded that the factor loadings are significant at p=0.01 and the variables are substantially important (Field, 2013).

Table 4.31: Pattern Matrix (SME Success)

	Factor	
BS	**1**	**2**
BS01		.790
BS02		.796
BS03		.679
BS04		.762
BS05		.815
BS06		.606
BS07	.962	
BS08	.958	
BS09	.893	
BS10	.881	
BS11	.654	
BS12	.662	

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

The results from Table 4-33 show that the two factors extracted explained a total of 65.32% of the variance with (BS_G = 51.89%; BS_F=13.43%) after extraction. The commonalities after extraction show that the amount of variance in each variable that can be explained by the retained factors was greater than 30% for all the variables. EFA gives a good result that is within acceptable levels.

Table 4.32: Total Variance Explained (SME Success)

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	6.541	54.510	54.510	6.227	51.890	51.890	5.519
2	1.956	16.298	70.808	1.611	13.426	65.316	4.910
3	.822	6.852	77.660				
4	.602	5.015	82.675				
5	.461	3.840	86.516				
6	.374	3.119	89.635				
7	.342	2.848	92.483				
8	.259	2.155	94.638				
9	.229	1.906	96.544				
10	.170	1.421	97.964				
11	.137	1.143	99.107				
12	.107	.893	100.000				

Extraction Method: Principal Axis Factoring.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

Kaiser-Meyer-Olkin measure of sampling adequacy (KMO=0.890, overall) and the anti-image correlation matrix (KMO>0.7, individual variables) indicates that the sample size and the set of variables were adequate for factor analysis since they are all greater than the 0.5 cut-offs. The Bartlett's test of sphericity was conducted to test that the original correlation matrix is an identity matrix and adequate for factor analysis (J. F. Hair et al., 2010).

Based on Bartlett's test results of Approx. Chi-Square =2736.71, DF=66, $p<0.05$, the correlation between the items is sufficient and significant for factor analysis.

Furthermore, the determinant of 5.53E-005<0.00001 suggests that there might be multicollinearity problems that need to be addressed. The factor correlation matrix suggests that the constructs measured could be interrelated and therefore independence of factors could not be assumed.

4.3.2 Risk Perception

Risk Perception was initially measured with a total of seven items, and after EFA, only three items were retained. EFA was first performed using the scree plot, and the greater than one eigenvalue rule and two factors were extracted. After removing the variables that were cross loading, it was evident from the scree plot that one factor will represent the construct better. EFA was performed again with a specified restricted number of factors and Table 4-34 provides the results on the relationship of each variable to the factor (r≥0.5). The one factor extracted relates to risk perception on the effect of the exogenous or environmental factors on SME growth, and it was abbreviated (RP). There was no rotation required since only one factor was extracted.

Table 4.33: Factor Matrix (Risk Perception)

	Factor
RP	1
RP06	.479
RP11	.875
RP12	.696

Extraction Method: Principal Axis Factoring.
a. 1 factors extracted. 22 iterations are required.

The results from Table 4-35 show that the one factor extracted explained a total of 63.98% of the variance before extraction and 49.36% after extraction This is not the best result, but it was still accepted because of its proximity to 50%.

Table 4.34: Total Variance Explained (Risk Perception)

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.919	63.977	63.977	1.481	49.362	49.362
2	.701	23.356	87.332			
3	.380	12.668	100.000			

Extraction Method: Principal Axis Factoring.

Kaiser-Meyer-Olkin measure of sampling adequacy is greater than 0.6, (KMO=0.624; $p<0.05$) which means that sample size and the set of variables were adequate for factor analysis. The Bartlett's test of sphericity was conducted to test that the original correlation matrix is an identity matrix and appropriate for factor analysis (J. F. Hair et al., 2010). Based on Bartlett's test results of Approx. Chi-Square =189.41, DF=3, $p<0.05$, the correlation between the items is large enough and significant for factor analysis. Furthermore, the determinant of 0.511>0.00001 suggests that there are no multicollinearity problems that needed to be addressed.

4.3.3 Business Planning and Financial Capital

The endogenous factors (the firm) were measured using two scales each with three items retained after the reliability test. Table 4-36 shows that EFA extracted two factors through PAF with three items each. The two factors relate to financial capital (FC) and business planning (BP). Each has three items with a factor loading >0.6 from (0.767 to 0.947) and (0.650 to 0.883) respectively.

The scree plot extracted the same number of factors based on an eigenvalue greater than one, based on the sample size (n=285) and factor loadings greater than 0.6. Each variable explained more than 16% of the variance; it was concluded that the factor loadings were significant at p=0.01 and the variables are substantially important.

Table 4.35: Pattern Matrix (The Firm)

	Factor	
	1	2
FC09	.947	
FC10	.807	
FC08	.767	
BP05		.883
BP01		.820
BP02		.650

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

The results from Table 4-37 shows that the two factors extracted explained a total of 67.39% of the variance with (FC = 36.08%; BP=31.32%). This is a good result because it is greater than 60% and the first factor explained most of the variance.

Table 4.36: Total Variance Explained (The Firm)

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	2.444	40.734	40.734	2.165	36.076	36.076	2.158
2	2.213	36.888	77.622	1.879	31.317	67.394	1.886
3	.494	8.232	85.854				
4	.379	6.320	92.175				
5	.272	4.528	96.702				
6	.198	3.298	100.000				

Extraction Method: Principal Axis Factoring.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

Kaiser-Meyer-Olkin measure of sampling adequacy close to 0.7, (KMO=0.697; $p<0.05$) which means that sample size and the set of variables were adequate for factor analysis. The Bartlett's test of sphericity was conducted to test that the original correlation matrix is an identity matrix and appropriate for factor analysis (J. F. Hair et al., 2010). Based on Bartlett's test results of Approx. Chi-Square =818.261, DF=15, $p<0.05$, the correlation between the items is large enough and significant for factor analysis. Furthermore, the determinant of $0.054>0.00001$ suggests that there were no multicollinearity problems that need to be addressed.

4.3.4 Cognitive Style

Cognitive style was measured with a total of 16 items and had three subscales. Table 4-38 shows that EFA extracted three factors through PAF. The three factors relate to cognitive style-knowing (CS_K) with 3 items, cognitive style-planning (CS_P) with 6 items and cognitive style-intuitive (CS_I) with 6 items, after removing CS09 which was lower than 0.4. The factor loadings vary from 0.430 to 0.903, all the factor loadings are greater than 0.5 except for CS03 but this was retained to maintain the minimum of three items per factor. The scree plot extracted the same number of factors as the eigenvalue greater than one rule. Based on the sample size (n=285) and factor loadings greater than 0.3 and each variable explaining more than 16% of the variance, it was concluded that the factor loading is significant at p=0.01 and the variables are substantially important.

Table 4.37: Pattern Matrix (Cognitive Style)

	Factor		
	1	2	3
CS01			.821
CS02			.903
CS03			.430
CS04	.609		
CS05	.643		
CS06	.794		
CS07	.751		
CS08	.687		
CS10	.641		
CS12		.745	
CS13		.821	
CS14		.635	
CS15		.576	
CS17		.604	
CS11		.761	

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

The results from Table 4-39 show that the three factors extracted explained a total of 51.77% of the variance with (CS_K = 31.79%; CS_P=14.05%, CS_I=5.93). This is an acceptable result because it is greater than 50% and the first factor explained most of the variance.

Table 4.38: Total Variance Explained (Cognitive style)

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.224	34.828	34.828	4.768	31.790	31.790	3.903
2	2.589	17.260	52.087	2.107	14.045	45.835	3.525
3	1.274	8.491	60.578	.890	5.933	51.767	3.134
4	.907	6.046	66.624				
5	.764	5.096	71.720				
6	.657	4.382	76.102				
7	.628	4.185	80.287				
8	.527	3.511	83.798				
9	.472	3.147	86.946				
10	.433	2.889	89.835				
11	.369	2.457	92.292				
12	.358	2.384	94.676				
13	.324	2.163	96.838				
14	.249	1.659	98.497				
15	.225	1.503	100.000				

Extraction Method: Principal Axis Factoring.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

Kaiser-Meyer-Olkin measure of sampling adequacy is greater than 0.7, (KMO=0.854; $p<0.05$) which means that sample size and the set of variables were adequate for factor analysis. The Bartlett's test of sphericity was conducted to test that the original correlation matrix is an identity matrix and adequate for factor analysis (J. F. Hair et al., 2010). Based on Bartlett's test results of Approx. Chi-Square =1854.30, DF=105, $p<0.05$, the correlation between the items is large enough and significant for factor analysis. Furthermore, the determinant of $0.001>0.00001$ suggests that there were no multicollinearity problems that needed to be addressed.

4.3.5 Entrepreneurial Self-Efficacy

Entrepreneurial self-efficacy was measured with a total of 13 items with three subscales. Items ESE01 and ESE10 cross loaded, and those that were lower than 0.5 were deleted from any further analysis. Table 4-40 shows that EFA extracted three factors through PAF. The three factors relate to entrepreneurial self-efficacy management, entrepreneurial self-efficacy finance, and entrepreneurial self-efficacy growth. After the cross-loading items were removed - ESE_M=3 items, ESE_F=3 items, and ESE_G=3 item loadings. The factor loadings vary from 0.602 to 0.956 so all items that loaded greater than 0.6 were retained. The scree plot extracted the same number of factors as the eigenvalue greater than one rule. Based on the sample size (n=285) and factor loadings greater than 0.6 and each variable explaining more than 16% of the variance, it was concluded that the factor loading is significant at p=0.01 and the variables are substantially important.

Table 4.39: Pattern Matrix (Entrepreneurial Self Efficacy)

	Factor		
ESE	1	2	3
ESE03			.761
ESE04			.653
ESE05			.635
ESE07	.602		
ESE08	.956		
ESE09	.810		
ESE12		.646	
ESE13		.842	
ESE14		.743	

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization.[a]

a. Rotation converged in 4 iterations.

The results from Table 4-41 show that the three factors extracted explained a total of 58.12% of the variance (ESE_M =37.41%, ESE_F=12.51%, ESE_G=8.20%) with eigenvalues of 3.722; 1.475 and 1.204 respectively. The results are

acceptable because the variance explained is greater than 50% and the first factor explained most of the variance.

Table 4.40: Total Variance Explained (Entrepreneurial Self-Efficacy)

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	3.772	41.915	41.915	3.367	37.406	37.406	2.611
2	1.475	16.385	58.301	1.126	12.506	49.913	2.519
3	1.204	13.373	71.673	.739	8.211	58.124	2.320
4	.626	6.952	78.626				
5	.488	5.420	84.046				
6	.446	4.956	89.001				
7	.399	4.437	93.439				
8	.347	3.853	97.292				
9	.244	2.708	100.000				

Extraction Method: Principal Axis Factoring.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

Kaiser-Meyer-Olkin measure of sampling adequacy is greater than 0.7, (KMO=0.796; $p<0.05$) which means that sample size and the set of variables were adequate for factor analysis. The Bartlett's test of sphericity was conducted to test that the original correlation matrix is an identity matrix and appropriate for factor analysis (J. F. Hair et al., 2010). Based on Bartlett's test results of Approx. Chi-Square =975.36, DF=36, $p<0.05$, the correlation between the items is large enough and significant for factor analysis. Furthermore, the determinant of $0.031>0.00001$ suggests that there were no multicollinearity problems that needed to be addressed.

4.3.6 Human Capital

Human Capital was initially measured with a total of eight items with two subscales. After conducting EFA, only five items loaded on one factor. EFA was first performed using the scree plot greater than one. There was no clean pattern and factors extracted. HC08, HC09, and HC10 did not load properly, and their loadings were less than 0.3 and were therefore removed from any further analysis. The researcher reran EFA with a specified restricted number of factors and Table 4-42 provides the results on the relationship of each variable to the factor which were all greater than 0.5. The one factor extracted related to human capital business training, and the items that were removed were all related to human capital work experience. There was no rotation required since only one factor was extracted.

Table 4.41: Factor Matrix (Human Capital)

	Factor
HC	**1**
HC12	.567
HC13	.927
HC14	.871
HC15	.892
HC16	.588

Extraction Method: Principal Axis Factoring.
a. 1 factors extracted. Six iterations required.

The results from Table 4-43 show that the one factor extracted explained a total of 61.60% of the variance, with a total eigenvalue of 3.39 and was deemed good because it is greater than 60%.

Table 4.42: Total Variance Explained (Human Capital-Business Training)

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.390	67.807	67.807	3.080	61.599	61.599
2	.707	14.142	81.949			
3	.553	11.060	93.008			
4	.202	4.034	97.043			
5	.148	2.957	100.000			

Extraction Method: Principal Axis Factoring.

Kaiser-Meyer-Olkin measure of sampling adequacy is greater than 0.7, (KMO=0.837; $p<0.05$) which means that sample size and the set of variables were adequate for factor analysis. The Bartlett's test of sphericity was conducted to test that the original correlation matrix is an identity matrix and appropriate for factor analysis (J. F. Hair et al., 2010). Based on Bartlett's test results of Approx. Chi-Square = 909.373, DF=10, $p<0.05$, the correlation between the items is sufficient and significant for factor analysis. Furthermore, the determinant of 0.040>0.00001 suggests that there were no multicollinearity problems that needed to be addressed.

After the initial model had been established using EFA, the factor structure and the relationship between observed and latent variables were confirmed using the confirmatory factor analysis to ensure that the hypothesised model fits (Holtzman & Vezzu, 2011).

4.3.7 Summary of the Reliability and EFA Results

The analysis started with a total of fourteen constructs or factors, after conducting the Cronbach Alpha test, only twelve factors remained and after running the exploratory factor analysis, there were eleven factors that remained. The factors that were eliminated during the reliability analysis were because they could not meet the set criteria for a reliable and consistent construct. The factors that were deemed reliable and consistent were tested for convergence and divergence validity using EFA. After the validity test was completed, only eleven factors remained and their factor structure was confirmed using CFA.

Table 4-6 shows the summary of the reliability results (Cronbach Alpha) test while Table 4-44 shows the summary of the exploratory factor analysis.

Table 4.43: Summary of the EFA integrated results

	Factor									
	1	2	3	4	5	6	7	8	9	10
RP06									.520	
RP11									.818	
RP12									.722	
BP01					.821					
BP02					.652					
BP05					.893					
FC08							.818			
FC09							.889			
FC10							.700			
HC12		.605								
HC13		.934								
HC14		.829								
HC15		.867								
HC16		.570								
CS05				.640						
CS06				.785						
CS07				.768						
CS08				.662						
CS10				.600						
CS11			.698							
CS12			.722							
CS13			.838							
CS14			.636							
CS15			.624							
CS17			.628							
ESE03										.770
ESE04										.588
ESE05										.488
ESE07						.519				
ESE08						.927				
ESE09						.855				
ESE12								.662		
ESE13								.851		
ESE14								.692		
BS07	.924									
BS08	.913									
BS09	.821									
BS10	.856									
BS11	.792									
BS12	.741									

Extraction Method: Principal Axis Factoring.
a. Rotation converged in 7 iterations.
Rotation Method: Promax with Kaiser Normalization.

The pattern matrix is the SPSS output for exploratory factor analysis, it provides information of the items loading to the factor. The factors are labelled 1 to 10 and each number represents a specific construct. Factors 1 to 10 relates to 1=business financial performance, 2=human capital, 3=cognitive style-intuitive, 4=cognitive style-planning, 5=business planning, 6=ESE-finances, 7= financial capital, 8=ESE-growth, 9=risk perception and 10=Entrepreneurial self-efficacy (ESE)-management. A minimum of three items were loaded on to each factor.

4.4 Confirmatory Factor Analysis (CFA)

The objective of this section was to test the hypothesis that a relationship between observed variables and their underlying latent constructs exists. Moreover, it was to help the researcher to test for convergence and discriminant validity, ensuring that all the manifest variables load highly on the correct variable and load low on other latent variables. CFA was then conducted using AMOS V23 for two separate measurement models. The exploratory factor analysis results were used for model specification. The factor structure of a set of observed variables for BS_F and BS-G models was verified (Suhr, 2006). The financial performance and growth indicators were used as manifest variables for the BS_F and BS_G model respectively.

After the model was identified and specified, then CFA was conducted, and the global fit statistics were assessed. Modification indices were used to re-specify the model. This process included covarying the error terms of the manifest variables within the same latent factors.

All covariances that gave a significant chi-square change were retained, and all variables with low standardised regression weights were also excluded (Fan et al., 1999; Field, 2013).

Table 4-44 shows the summary of the model fit statistics of the two SME success measurement models. Both models fit the data well, confirming a measurement model of ten factors each with its components. The chi-Square though, suggests that there is poor model fit with significant p-values of less than 0.05.

The chi-squared generated these results: X^2 =976.90, df=685, p=0.00 for model BS_F and X^2 =1005.92, df=684, p=0.00 for Model BS_G.

It was evident that the chi-square in this sample was inflated because of the sample size and the complexity of the model. The complex nature of the model includes the big sample size and many parameters with 685 degrees of freedom. It was concluded that the observed variables fit their models very well based on the global fit statistics (GFI>0.8; TLI>0.9; CFI>0.95; PCLOSE>0.05; CMIN/DF<3 and RMSEA<0.05) as presented in Table 4-44 (Hooper et al., 2008).

The global fit statistics in Table 4-44 show that Model BS_F has a better fit than model BS_G. Further analysis, therefore, focused mainly on model BS_F and the results from Model BS_G are reported in Table 6-6 and Figure 6-3 (both in Appendix B) under the appendix section. It was then concluded that the final measurement models displayed good fit.

Table 4.44: Model fit summary- CFA

Model	CMIN	GFI	TLI/NNFI	CFI	RMSEA	PCLOSE	CMIN/DF
Model BS_F	976.895	0.855	0.946	0.953	0.039	1.000	1.426
Model BS_G	1005.924	0.854	0.933	0.941	0.041	0.998	1.471

The model estimates in Table 4-46 show that all the critical ratios (C.R.>1.96), the square factor loadings ($\lambda^{\wedge 2}$ >0.2) except only CS_I /CS15 = 0.2 but still within an acceptable range.

The single pointed arrows indicate the relationship between the factor and its item and the results on the specific row are describing the strenght of these relationships. Moreover, the standardised regression weights (β>0.4, P<0.001), are all significant except for the paths that were constrained for scaling and model identification purposes (Hooper et al., 2008).

Table 4.45: BS_F Model estimates summary - CFA

BS_F Model			B	S.E.	C.R.	β	$(\lambda)^2$	P<0.001
BS08	<---	BS_F	0.95	0.03	28.08	0.89	0.79	***
BS09	<---	BS_F	0.93	0.05	19.39	0.86	0.74	***
BS10	<---	BS_F	0.89	0.04	19.94	0.90	0.80	***
BS11	<---	BS_F	0.83	0.05	16.12	0.76	0.58	***
HC13	<---	HC	1.61	0.16	9.97	0.93	0.87	***
HC14	<---	HC	1.49	0.15	9.81	0.90	0.80	***
HC15	<---	HC	1.50	0.15	9.79	0.89	0.79	***
CS12	<---	CS_I	1.01	0.07	13.98	0.78	0.61	***
CS13	<---	CS_I	1.21	0.08	16.02	0.90	0.80	***
CS14	<---	CS_I	0.89	0.10	9.37	0.55	0.31	***
CS15	<---	CS_I	0.75	0.10	7.34	0.45	0.20	***
CS06	<---	CS_P	1.35	0.12	11.71	0.78	0.61	***
CS07	<---	CS_P	1.19	0.11	10.90	0.71	0.51	***
CS08	<---	CS_P	0.99	0.11	8.84	0.64	0.40	***
BP02	<---	BP	0.72	0.07	11.03	0.65	0.42	***
ESE08	<---	ESE_F	1.18	0.10	11.76	0.85	0.72	***
FC09	<---	FC	1.16	0.07	15.69	0.93	0.86	***
FC10	<---	FC	0.99	0.07	14.62	0.83	0.69	***
ESE13	<---	ESE_G	1.18	0.10	11.29	0.77	0.59	***
RP11	<---	RP	1.85	0.28	6.59	0.89	0.79	***
ESE04	<---	ESE_M	1.13	0.14	7.86	0.57	0.33	***
CS05	<---	CS_P	1.00			0.76	0.57	
BP01	<---	BP	1.00			0.83	0.69	
BP05	<---	BP	1.07	0.08	13.50	0.87	0.76	***
FC08	<---	FC	1.00			0.76	0.58	
ESE03	<---	ESE_M	1.00			0.64	0.41	
RP12	<---	RP	1.35	0.19	7.04	0.69	0.47	***
RP06	<---	RP	1.00			0.47	0.22	
ESE14	<---	ESE_G	1.09	0.10	11.04	0.74	0.55	***
ESE12	<---	ESE_G	1.00			0.76	0.57	
ESE07	<---	ESE_F	1.00			0.67	0.45	
ESE09	<---	ESE_F	1.26	0.11	11.79	0.85	0.73	***
ESE05	<---	ESE_M	1.44	0.15	9.53	0.83	0.69	***
CS10	<---	CS_P	0.72	0.08	8.81	0.58	0.33	***
CS17	<---	CS_I	0.89	0.10	9.00	0.54	0.29	***
CS11	<---	CS_I	1.00			0.80	0.64	
HC16	<---	HC	0.90	0.11	8.46	0.55	0.30	***
HC12	<---	HC	1.00			0.54	0.29	
BS07	<---	BS_F	1.00			0.91	0.83	
BS12	<---	BS_F	0.74	0.05	14.21	0.70	0.49	***

B=Unstandardised regression weights, β=Standardised regression weights, SE=Standard Error,

λ=Factor Loading and p= significant value

Figure 4.3 shows a pictorial view of the full CFA, confirming a measurement model of a ten-factor structure. In this diagram, the double headed arrows represent covariance between the two variables or error terms and the single headed arrow represent the relationship between a factor and its components. The model displayed the following results: The Square Multiple Correlations (SCM) ranges from 20 to 87% which shows the variance of the item accounted for by each factor is substantial. Approximately sixteen of the covariances between latent factors are significant, but none is greater than 0.8 to cause for any concern of multicollinearity and singularity. Some of the error terms that were allowed to covary during the modification or respecification process are also significant and improved the initial model.

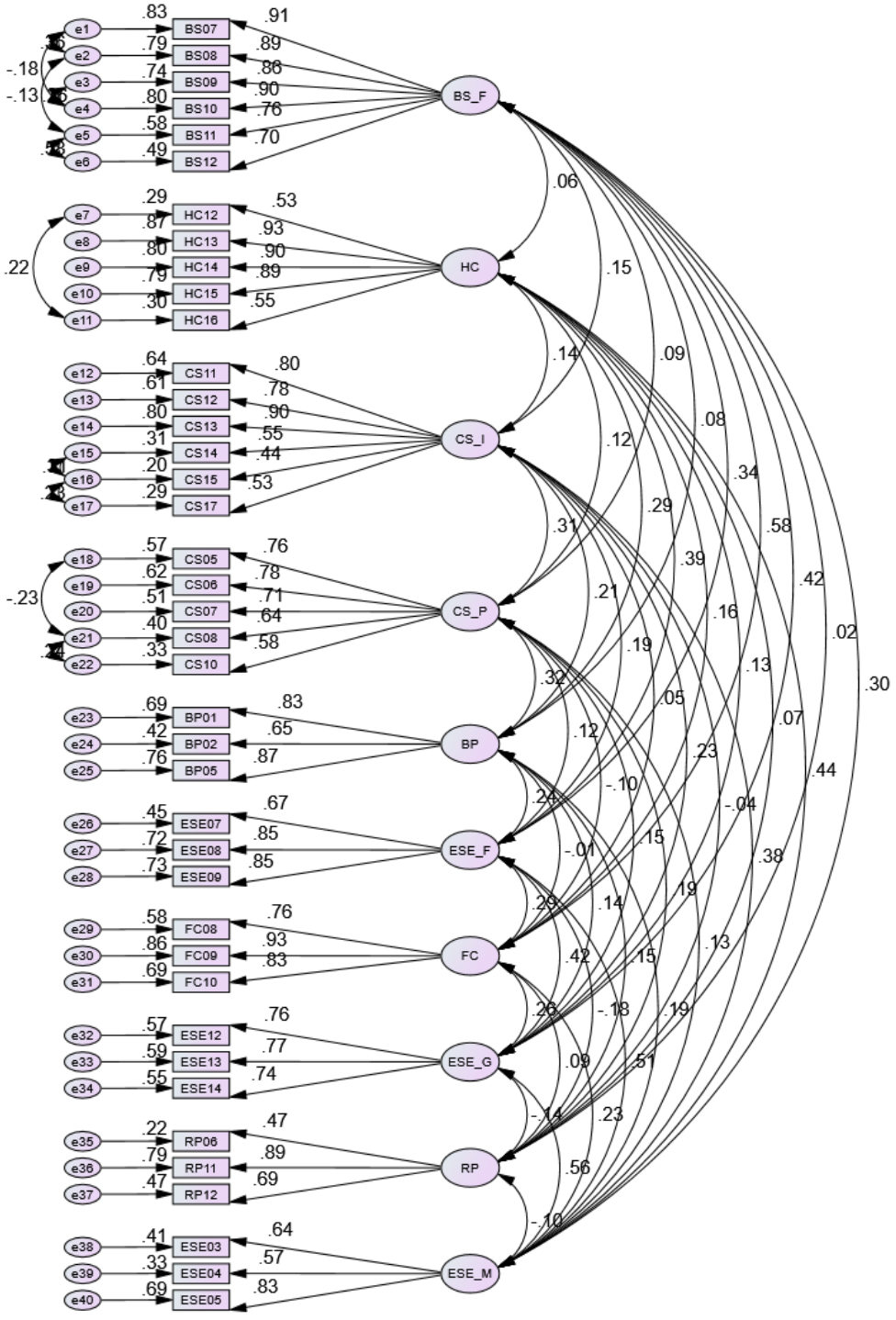


Figure 4.3: BS_F measurement model - CFA

Table 4-47 provides a summary of the model fit of individual constructs. All the factors met most of the required criteria with one or two criteria violated. The main focus on the individual factors was the factor loadings more than the model fit because the objective was to integrate all the factors into one measurement model that fits well. This study emphasized the importance of an integrated approach. It was then concluded that it is important to retain all the factors as long as they load well on the factor and meet some minimum requirement on the model fit. The factors that did not satisfy some of the model fit statistics were monitored closely on the full integrated model.

Table 4.46: CFA Model fit summary of individual constructs

Model	CMIN	GFI	TLI/NNFI	CFI	RMSEA	PCLOSE	CMIN/DF
SME Success (DV)	41.09	0.79	0.99	0.99	0.05	0.47	1.71
The environmental factor	0.00	1.00	1.00	1.00	0.47	0.00	0.00
The firm factors	20.46	0.98	0.97	0.99	0.07	0.14	2.56
The entrepreneur's factors							
Cognitive Style	143.52	0.94	0.96	0.97	0.04	0.74	1.56
Self-Efficacy	69.48	0.95	0.92	0.95	0.08	0.01	3.02
Human Capital	1.41	1.00	1.00	1.00	0.00	0.69	0.71

After the exploratory and confirmatory factor analysis, had been conducted, further analysis was carried out to re-assess the reliability and validity of the constructs that make up up the final measurement model.

Table 4.47: Summarised results of retained factors

High-Level Factors	Constructs	Latent Factors	Initial	Alpha	EFA	CFA
Dependent Variables	SME Success	Business Growth (BS_G)	X	6	6	6
		Business Financial Performance (BS_F)	X	6	6	6
Environment	Risk Perception	Risk Perception (RP)	X	7	3	3
Entrepreneur	Human Capital	Business Training (HC_BT)	X	5	5	5
		Work Experience (HC_WE)	X	-	-	-
		Business Experience (HC_BE)	X	-	-	-
	Cognitive Styles	Knowing (CS_K)	X	3	3	-
		Planning (CS_P)	X	7	6	5
		Intuitive (CS_I)	X	6	6	6
	Entrepreneurial Self Efficacy	Management (ESE_M)	X	6	3	3
		Finances (ESE_F)	X	3	3	3
		Growth (ESE_G)	X	5	3	3
Firm	Business Planning	Business Planning (BP)	X	3	3	3
	Financial Capital	Financial Capital (FC)	X	5	3	3
Total number of factors			**14**	**12**	**12**	**11**
Total number of items				**62**	**50**	**46**

Table 4-48 shows the factors that were retained after running the reliability and validity tests. The number of factors and the number of items were reduced from one stage of analysis to the next (from Cronbach alpha to EFA to CFA) as the study ensures that convergence and discriminant criteria are satisfied. Further analysis for the SME Success (Dependent variables) regression model was conducted with nine factors (predictor variables). The composite scale was computed from a total of 46 items.

4.5 Validity of Measurement Scales

Reliability assessment, exploratory and confirmatory factor analysis which were conducted in the previous section, are used in this section to show whether there is discriminant and convergent validity. Proceeding from Section 4.3 and 4.4 which provide some of the results on validity and reliability, this section summarised the preceding section results as evidence of construct validity.

4.5.1 Convergent Validity

The inter-item correlations of all the factors were greater than 0.3, the average factor loadings per construct were all 0.7 and more with individual factor loadings ranging from 0.5 to 0.9, and finally, none of the factor loading squares were lower than 0.2 to suggest weak items. Based on the EFA and CFA results it was concluded that the items converged into their factors suggesting convergence validity. Apart from assessing the convergent validity of items through checking correlations in the item-total index (Field, 2009) factor loadings and AVE was also examined further to identify the convergent validity of measurement items. Average variance extracted (AVE) was calculated using this formula

$$\textbf{AVE} = \frac{\sum \lambda^2}{n}$$

Composite reliability was calculated using this formula

$$\textbf{CR} = \frac{(\sum \lambda)^2}{(\sum \lambda)^2 + (\sum \varepsilon)}$$

Table 4.48: Convergent and Discriminant Validity Results

FACTOR	AVE	CR	Alpha
BP	0.6	0.8	0.8
BS_F	0.7	0.9	0.9
CS_I	0.5	0.8	0.8
CS_P	0.5	0.8	0.8
ESE_F	0.6	0.8	0.8
ESE_G	0.6	0.8	0.8
ESE_M	0.5	0.7	0.7
FC	0.7	0.9	0.9
HC	0.6	0.9	0.9
RP	0.5	0.8	0.7

AVE: Average Variance Extracted; CR: Composite Reliability; Alpha: Cronbach Alpha

The reliability test results showed that the scales are consistent and reliable, but since some of the items were deleted during the re-specification process when performing CFA, the final factor structure was retested for reliability.

The results are reproduced in Table 4-47 which show that $\alpha \geq 0.7$, AVE≥0.5, and CR≥0.7. These results, therefore, further indicate good convergent validity where items are explaining 50% and more of their respective constructs. Furthermore, since CR values are above the recommended threshold of 0.7, this substantiates the existence of convergent validity.

4.5.2 Discriminant Validity

Proceeding from section 4.3 and 4.4 with the EFA and CFA results obtained which show that items loaded strongly on their individual constructs and weakly on other constructs suggest that the items are divergent as expected.

Table 4.49: Factor Correlation Matrix Results

FACTOR	HC	CS_I	CS_P	BP	FC	ESE_F	ESE_G	RP	ESE_M
HC	1.000								
CS_I	.156	1.000							
CS_P	.093	.273	1.000						
BP	.276	.215	.303	1.000					
FC	.175	.068	-.073	.038	1.000				
ESE_F	.389	.173	.101	.261	.273	1.000			
ESE_G	.170	.207	.119	.163	.258	.334	1.000		
RP	.020	-.075	.163	.064	.091	-.196	-.176	1.000	
ESE_M	.275	.316	.151	.112	.157	.411	.380	-.061	1.000

BS_F=Business Success Financial Performance, RP=Risk Perception, BP=Business Planning, FC=Financial Capital, HC=Human Capital, ESE=Entrepreneurial Self Efficacy-Management, F-Finance, G-Growth, CS=Cognitive Style, I-Intuition, P-Planning, BS_G=Business Success-Growth

Table 4.50 provides results of the factor correlation matrix; these correlations are expected to be low to show that there is discriminant validity, however they can correlate. Based on the displayed results most of the correlations are lower than 0.3, suggesting that the constructs were unique and not measuring the same thing. The few that are highlighted grey on the table are dimensions of the same construct or belongs to the same risk category and are expected to correlate higher. Those coefficients greater than .3 which was a cause for concern for further analysis, were monitored closely.

There are five factor pairs that negatively correlate with each other. Risk perception is negatively associated with entrepreneurial self-efficacy (all three dimensions) and cognitive style-intuition, and financial capital is negatively associated with cognitive style-planning. The negative relationship between cognitive style planning and intuitive is expected since entrepreneurs who are creative and innovative usually use their intuition to make decisions rather than use facts and plan (Kahneman, 2011). The negative relationship between RP and ESE suggest that entrepreneurs who are confident about their entrepreneurial abilities, skills and competence do not believe that there is a conducive environment to grow their businesses. Their perception is informed by the strong belief in themselves to control and regulate events that happens around them and therefore believe growth is a function of their own ability rather than the environment out there (Bandura, 1991, 2012). Furthermore, the negative relationship between FC and CS_I suggest that entrepreneurs who employ an intuitive style and are creative tend not to be satisfied with the financial capital available to them for their business development.

The covariance from Figure 4-2 is all less than 0.6 which further supports that there is discriminant validity.

4.6 Hypothesis Testing

Hierarchical multiple regression was the core statistical technique employed to test the study's hypotheses and build the integrated risk assessment model framework. The process started with correlational analysis where the strength, size, direction and the significance of relationships between variables were analysed. The test was followed by a process of selecting variables that are significant to enter the regression model using backward elimination method. After that the two-step hierarchical regression analysis was performed testing the different hypotheses and uniqueness of each variable. Lastly, the mediation analysis results were presented.

4.6.1 Correlation Results

The correlation matrix was computed first before the regression analysis, and the results of the individual risk factors were analysed. The risk factors included the environment, the firm and the entrepreneur which are harboring the independent variables. SME success, the dependent variable measured by financial performance was also included in the analysis. This subsection ends by reporting the correlation analysis of the integrated risk factors.

Table 4-51 consolidates the correlation coefficients from the three risk factors. Each of the risk factors' variables correlation matrix are provided in their subsections below. The significance, strength and direction of each of the variables are interpreted in detail on the subsections and this is a summary of the results of the detailed analysis.

Table 4.50: Consolidated Correlation Matrix

	BS_F	RP	BP	FC	HC	ESE_M	ESE_F	ESE_G	CS_I	CS_P	BS_G
BS_F	1										
RP	.238**	1									
BP	0.092	0.111	1								
FC	.534**	.346**	0.029	1							
HC	0.073	0.078	.265**	.163**	1						
ESE_M	.263**	0.048	.142*	.183**	.343**	1					
ESE_F	.316**	-0.008	.235**	.275**	.344**	.355**	1				
ESE_G	.363**	0.003	.138*	.212**	.157**	.423**	.377**	1			
CS_I	.130*	-0.011	.124*	0.069	.165**	.295**	.132*	.191**	1		
CS_P	0.064	0.109	.259**	-0.089	0.098	.125*	0.086	0.103	.240**	1	
BS_G	.546**	.148*	0.098	.304**	0.087	.237**	.250**	.288**	.123*	0.004	1

***. Correlation is significant at the 0.01 level (2-tailed).*

**. Correlation is significant at the 0.05 level (2-tailed).*

Below is a summary of significant relationships from Table 4-51

- BS_F is positively associated with RP, FC, ESE_M, ESE_F, ESE_G and CS_I
- RP is positively associated with FC
- BP is positively correlated with HC, ESE_M, ESE_F, ESE_G and CS_P

- FC is positively correlated with HC, ESE_M, ESE_F and ESE_G
- HC is positively correlated with ESE_M, ESE_F, ESE_G and CS_I
- ESE_M is positively related to ESE_F, ESE_G, CS_P and CS_I
- ESE_F is positively related to ESE_G and CS_I
- ESE_G is positively correlated to CS_I
- CS_I is positively correlated with CS_P

4.6.1.1 The Environment

The exogenous risk factor (the environment) focused on the perceptions of entrepreneurs about the environment in which their businesses operate. The measures for the environment included risk perception as a predictor variable and the level of development of the area, support from external structures, sector, and the location as control variables.

RQ 1: *What kind of relationship exist between the risk perception and financial performance?*

In an attempt to answer the research question, the correlation between the independent variable (Risk Perception) and the dependent variable (financial performance) was assessed. Table 4-49 shows that there was a significant positive relationship between risk perception and financial performance, r = .238, 95% BCa CI [.127, .341], p < .01. Though this is a significant relationship, it was not as strong as the researcher expected it to be.

Table 4.51: Correlation between BS_F and RP

Correlations				BS_F	RP
BS_F	Pearson Correlation			1	.238**
	Sig. (2-tailed)				.000
	N			285	285
	Bootstrap[c]	Bias		0	-.001
		Std. Error		0	.054
		BCa 95% Confidence Interval	Lower	.	.127
			Upper	.	.341

**. Correlation is significant at the 0.01 level (2-tailed).

c. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Moreover, Spearman correlation was conducted to determine the kind of relationship that exists between the control variables and financial performance of the business. The results show that both location (r=.119, p<0.05) and sector (r=.131, p<0.05) have a significant positive relationship with financial performance. The level of development of the area and external support had a negative non-significant relationship with financial performance and thus was excluded from further analysis.

H1: *There is a positive relationship between RP and BS_F (Supported and significant)*

The hypothesis that there is a positive relationship between risk perception and financial performance was supported and significant.

4.6.1.2 The Firm

The endogenous risk factor (the firm) focused on financial capital (FC) and business planning (BP) as predictor variables. The number of employees in the enterprise, annual revenue, asset value of the business, size, and age of the firm were used as control variables.

RQ 2: *What kind of relationship exist between the financial capital and financial performance?*

RQ 3: *What kind of relationship exist between the business planning and financial performance?*

To answer the research question, the correlation between the independent variables (FC and BP) and the dependent variable (BS_F) was assessed. Table 4-50 shows that BS_F was significantly related to FC, r = .534, 95% BCa CI [.430, .626], p < .01 however it was not significantly related to business planning (BP), r = .092, 95% BCa CI [-.033, .217], p = .122. The relationship of BS_F with BP is positive and very small, however very strong and positive with FC.

Table 4.52: Correlation between BP, FC, and BS_F

Correlations				BS_F	BP	FC
BS_F	Pearson Correlation			1	.092	.534**
	Sig. (2-tailed)				.122	.000
	N			285	285	285
	Bootstrap[c]	Bias		0	.000	.001
		Std. Error		0	.063	.047
		BCa 95% Confidence Interval	Lower	.	-.033	.430
			Upper	.	.217	.626

**. Correlation is significant at the 0.01 level (2-tailed).

c. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Furthermore, Spearman correlation was conducted to test whether there was a relationship between the control variables and financial performance. The results show that there was a significant relationship between all the control variables and financial performance, all at $p<0.05$.

H2: *There is a positive relationship between FC and BS_F (Supported and Significant)*

H3: *There is a positive relationship between BP and BS_F (Supported but not significant)*

Hypothesis 2 is supported and significant, therefore the study concludes that there is a positive relationship between financial capital and financial performance. The correlation results further supported hypothesis 3 which states that there is a positive relationship between business planning and financial performance, but the result was not significant.

4.6.1.3 The Entrepreneur

The endogenous risk factor (the entrepreneur) was measured with three constructs which are human capital, entrepreneurial self-efficacy with three dimensions (finance, growth, and management) and cognitive style with two dimensions (intuitive and planning).

The race, gender, age and level of education were used as control variables. The correlation of these variables with the dependent variable was assessed.

RQ 4: *What kind of relationship exist between human capital and financial performance?*

RQ 5*: What kind of relationship exist between entrepreneurial self efficacy and financial performance?*

RQ 6*: What kind of relationship exist between cognitive style and financial performance?*

To answer the research questions, Pearson correlation analysis was performed. Table 4-54 provides the correlation matrix of all the entrepreneur factors with financial performance. BS_F was significantly correlated with ESE_M, r = .263 [.166, .354], ESE_F, r =.316 [.200, .422]; ESE_G, r =.363 [.249, .462], p<0.01 and with CS_I, r=.130 [.024, .240]; p<0.05, all the significant relationships were moderate and positive. HC and CS_P were positively correlated to BS_F but weak and non-significant.

Table 4.53: Correlation between BS_F and entrepreneur factors

Correlations				BS_F	HC	ESE_M	ESE_F	ESE_G	CS_I	CS_P
BS_F	Pearson Correlation			1	.073	.263**	.316**	.363**	.130*	.064
	Sig. (2-tailed)				.218	.000	.000	.000	.028	.279
	N			285	285	285	285	285	285	285
	Bootstrap[c]	Bias		0	-.006	-.002	-.002	-.002	.000	-.002
		Std. Error		0	.063	.052	.054	.055	.058	.057
		BCa 95% Confidence Interval	Lower	.	-.048	.166	.200	.249	.024	-.048
			Upper	.	.175	.354	.422	.462	.240	.170

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

c. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Spearman correlation was conducted to test whether there was any relationship between the control variables of the entrepreneur factor and financial performance.

The results show that there was a significant relationship between race and financial performance, r=.233, p<0.01. The relationship was moderate and positive.

Human Capital

H4: *There is a positive relationship between HC and BS-F (Supported but not significant)*

H5: Entrepreneurial Self-Efficacy

H5a: *There is a positive relationship between ESE_Management and BS-F (Supported and significant)*

H5b: *There is a positive relationship between ESE_Finances and BS-F (Supported and significant)*

H5c: *There is a positive relationship between ESE_Growth and BS-F (Supported and significant)*

H6: Cognitive Style

H6a: *There is a positive relationship between CS_I and BS-F (Supported and significant)*

H6b: *There is a positive relationship between CS_P and BS-F (Supported but not significant*

4.6.1.4 The Integrated Results

The integrated approach seeks to establish the relationships between different constructs irrespective of whether the constructs are categorised as exogenous or endogenous risk factors. Pearson correlation was conducted to test the relationships between predictor variables. This test excluded all the control variables which have been tested already from preceding sections that looked at the relationship of individual factors.

This section focused on the relationship between the predictor variables themselves while the previous section concentrated on the relationship between the IVs and DV per risk factor. Table 3-13 provides the correlation coefficients for all the variables. Risk perception has a significant positive relationship with financial capital (r=.346, p< .01).

Business Planning has a significant positive relationship with six independent variables, three at p<.01 (HC: r=.265; ESE_F: r=.235; CS_P: r=.259) and another three at p<.05 (ESE_M: r=.142; ESE-G: r=.138; CS_I: r=.124). Financial Capital has a significant positive relationship with four independent variables, all at p<0.01 (HC: r=.163; ESE_M: r=.183; ESE_F: r=.275; ESE_G: r=.212).

Human Capital has a significant positive relationship with four independent variables, all at p<.01 (ESE_M: r=.343; ESE_F: r=.344; ESE_G: r=.157; CS_I: r=.165.). Cognitive style- Intuitive has a significant positive relationship with CS_P, r=.240, p<.01.

Entrepreneurial Self-Efficacy- Management has a significant positive relationship with four independent variables (ESE_F: r=.355; ESE_G: r=.423; CS_I: r=.295.) at p<.01 and (CS_P: r=.125, p<.05). Entrepreneurial Self-Efficacy- Finance has a significant positive relationship with two independent variables (ESE_G: r=.377, p<.01 and CS_I: r=.132, p<.05.). Entrepreneurial Self-Efficacy- Growth has a significant positive relationship CS_I, r=.191, p<.01.).

After testing all the different relationships, it was concluded that the dependent variable, financial performance has a significant relationship with six of the nine predictor variables tested. The variables that had a significant relationship included FC, ESE-G, ESE-F, ESE_M, RP and CS_I, listed according to the strength of the relationship from the strongest to the weakest. Only BP, CS_P and HC had no significant relationship with the DV, and therefore were excluded from the regression analysis.

SME success had two indicators, growth (BS_G) and financial performance (BS_F). Because BS_G was not normally distributed, the detailed analysis focused on BS_F as the DV.

However, a Spearman correlation was conducted between BS_G and IVs to assess if the association would be different from the BS_F and IVs relationships.

The results suggest that BS_F and BS_G both have the strongest relationship with FC and ESE when compared with other IVs. The difference is that BS_G has CS_I and HC as the third and fourth strongest while BS_F has RP and CS_I in those positions. BP and CS_P are non-significant for both BS_G and BS_F. HC is non-significant with BS_F but significant with BS_G and the same with RP which is significant with BS_F but non-significant with BS_G. The divergence confirms that the two indicators are indeed measuring different dimensions of SME success.

4.6.2 Backward Elimination Method

The correlation analysis provided information on the strength, direction, and significance of the relationships between variables but not on its predictive capacity. The objective of regression analysis was to assess the predictive capacity of various predictor variables from the three risk categories to SME success (financial performance).

Following from correlation results, variables that could predict SME success better still needed to be ascertained. Due to a large number of predictor variables in the study, it was important to use backward elimination method to reduce the number of variables to enter the regression model thus produce a parsimonious model (Field, 2013). The next section presents the backward selection model output for the three risk factors starting with the environment, followed by the firm and ending with the entrepreneur construct.

4.6.2.1 The Environment Backward Elimination Results

Proceeding from section 4.6.1.1 where the predictor variables including the control variables were listed and their correlations assessed, we use the same variables to build a regression model for the environment risk factor. The objective is to test the predictive power of RP to BS_F. Multiple regression was performed with BS_F as a dependent variable, RP as the independent variable.

The level of development of the area, support from external structures, affiliation to business support organisations and location were used as control variables.

Table 4-55 shows the model summary from the regression analysis of the environment risk factor. The final model which is model 8 shows that RP the predictor variable and LO the control variable with (RP: β=0.233 and LO: β=-0.122, p<0.05) were significant. LO refers to businesses that are located in areas that are not developed. The model explained 7% of the variability in BS_F (R square= 0.071. Both the correlation coefficient and the regression results support the hypothesis that risk perception has a positive relationship with financial performance.

Table 4.54: Model Summary and Coefficients - Environment

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.297[a]	.088	.058	.94384
2	.297[b]	.088	.062	.94213
3	.296[c]	.088	.065	.94069
4	.295[d]	.087	.067	.93924
5	.293[e]	.086	.069	.93831
6	.283[f]	.080	.067	.93940
7	.276[g]	.076	.066	.93994
8	**.267[h]**	**.071**	**.065**	**.94057**

a. Predictors: (Constant), LO, MixDev, RP, SupportM, GW, KZ, NotDev, WC, SuppYes

b. Predictors: (Constant), LO, MixDev, RP, SupportM, GW, KZ, NotDev, WC

c. Predictors: (Constant), LO, MixDev, RP, GW, KZ, NotDev, WC

d. Predictors: (Constant), LO, MixDev, RP, GW, KZ, WC

e. Predictors: (Constant), LO, RP, GW, KZ, WC

f. Predictors: (Constant), LO, RP, GW, KZ

g. Predictors: (Constant), LO, RP, KZ

h. Predictors: (Constant), LO, RP

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
8	**(Constant)**	2.216	0.178		12.467	0.000
	RP	0.262	0.065	0.233	4.058	0.000
	LO	-0.403	0.190	-0.122	-2.117	0.035

RP: Risk Perception, LO: Location- provinces with low economic activity

4.6.2.2 The Firm Backward Elimination Results

Proceeding from section 4.6.1.2 where the predictor variables, including the control variables, were identified and their correlations assessed, we used the same variables to conduct the selection of significant variables for the environment risk factor. Multiple regression was performed with BS_F as a dependent variable, BP, and FC as independent variables. The number of employees in the firm, annual revenue, size and age of the company were used as control variables.

Table 4-56 shows the model summary of the firm risk factor from the regression analysis. The final model which is model 11, indicates that only FC is a significant predictor variable (FC: $\beta=0.479$, $p<0.01$). The control variables that were significant were Revenue less than R5mil (RevR5), Small and Medium size with (RevR5: $\beta=0.168$; Small: $\beta=0.101$; Medium: $\beta=0.194$) at $p<0.05$. The firm variables explained 34% of the variability in BS_F (R square= 0.340). Both the correlation coefficient and the regression results support the hypothesis that financial capital has a positive and strong relationship with financial performance.

Table 4.55: Model Summary and Coefficients - The Firm

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.604[a]	.364	.331	.795
2	.604[b]	.364	.334	.793
3	.604[c]	.364	.336	.792
4	.603[d]	.364	.338	.791
5	.602[e]	.362	.339	.790
6	.600[f]	.359	.339	.791
7	.597[g]	.356	.338	.791
8	.593[h]	.352	.336	.792
9	.590[i]	.348	.334	.793
10	.586[j]	.344	.332	.794
11	**.583[k]**	**.340**	**.330**	**.795**

a. Predictors: (Constant), Medium, BP, RevR10, BusAge5yr, FC, Employees20, BusAge3yr, Employees49, VSmall, RevR5, Employees200, Small, BusAge6yr, RevR11

b. Predictors: (Constant), Medium, BP, RevR10, BusAge5yr, FC, Employees20, BusAge3yr, Employees49, VSmall, RevR5, Small, BusAge6yr, RevR11

c. Predictors: (Constant), Medium, BP, RevR10, BusAge5yr, FC, Employees20, BusAge3yr, VSmall, RevR5, Small, BusAge6yr, RevR11

d. Predictors: (Constant), Medium, BP, RevR10, FC, Employees20, BusAge3yr, VSmall, RevR5, Small, BusAge6yr, RevR11

e. Predictors: (Constant), Medium, BP, RevR10, FC, Employees20, BusAge3yr, RevR5, Small, BusAge6yr, RevR11

f. Predictors: (Constant), Medium, BP, FC, Employees20, BusAge3yr, RevR5, Small, BusAge6yr, RevR11

g. Predictors: (Constant), Medium, BP, FC, BusAge3yr, RevR5, Small, BusAge6yr, RevR11

h. Predictors: (Constant), Medium, FC, BusAge3yr, RevR5, Small, BusAge6yr, RevR11

i. Predictors: (Constant), Medium, FC, RevR5, Small, BusAge6yr, RevR11

j. Predictors: (Constant), Medium, FC, RevR5, Small, RevR11

k. Predictors: (Constant), Medium, FC, RevR5, Small

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
11	(Constant)	1.517	0.124		12.210	0.000
	FC	0.432	0.045	0.479	9.539	0.000
	RevR5	0.341	0.100	0.168	3.423	0.001
	Small	0.218	0.111	0.101	1.977	0.049
	Medium	0.530	0.143	0.194	3.713	0.000

FC-Financial Capital, RevR5- Revenue less than R5mil, SME Size- Small and Medium

4.6.2.3 The Entrepreneur Backward Selection Results

Proceeding from section 4.6.1.3 where the predictor variables including the control variables were identified and their correlations assessed, we used the same variables to build a regression model for the entrepreneur risk factor.

Table 4-57 shows the model summary and the coefficients of the entrepreneur risk factor from the regression analysis. The final model which was Model 11 reveals that ESE_F and ESE_G were significant predictors (ESE_F: β=0.194, ESE_G: β=0.268, $p<0.01$) of BS_F. The control variables that were significant were Race-black and Age group- youth, (Black: β=-0.211; Youth: β=0.098) at $p<0.05$. The entrepreneur variables explained 21% of the variability in BS_F (R square= 0.209). Both the correlation coefficient and the regression results support the hypothesis that entrepreneurial self-efficacy has a positive relationship with financial performance.

Table 4.56: Model Summary and Coefficients - The Entrepreneur

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.481[a]	.232	.192	.874
2	.481[b]	.232	.195	.872
3	.481[c]	.231	.197	.871
4	.480[d]	.230	.199	.870
5	.479[e]	.229	.201	.869
6	.477[f]	.227	.202	.868
7	.475[g]	.226	.203	.868
8	.472[h]	.223	.203	.868
9	.469[i]	.220	.204	.867
10	.464[j]	.215	.201	.869
11	.457[k]	.209	.198	.871

a. Predictors: (Constant), DegreeDip, OldAge, ESE_G, Female, Allother, HC, CS_P, NoMatric, CS_I, Matric, ESE_F, Black, ESE_M, Youth

b. Predictors: (Constant), OldAge, ESE_G, Female, All other, HC, CS_P, NoMatric, CS_I, Matric, ESE_F, Black, ESE_M, Youth

c. Predictors: (Constant), OldAge, ESE_G, Female, All other, HC, NoMatric, CS_I, Matric, ESE_F, Black, ESE_M, Youth

d. Predictors: (Constant), OldAge, ESE_G, All other, HC, NoMatric, CS_I, Matric, ESE_F, Black, ESE_M, Youth

e. Predictors: (Constant), OldAge, ESE_G, HC, NoMatric, CS_I, Matric, ESE_F, Black, ESE_M, Youth

f. Predictors: (Constant), ESE_G, HC, NoMatric, CS_I, Matric, ESE_F, Black, ESE_M, Youth

g. Predictors: (Constant), ESE_G, HC, CS_I, Matric, ESE_F, Black, ESE_M, Youth

h. Predictors: (Constant), ESE_G, HC, CS_I, Matric, ESE_F, Black, Youth

i. Predictors: (Constant), ESE_G, CS_I, Matric, ESE_F, Black, Youth

j. Predictors: (Constant), ESE_G, Matric, ESE_F, Black, Youth

k. Predictors: (Constant), ESE_G, ESE_F, Black, Youth

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
11	(Constant)	1.264	0.259		4.876	0.000
	ESE_F	0.203	0.061	0.194	3.349	0.001
	ESE_G	0.300	0.065	0.268	4.650	0.000
	Black	-0.415	0.112	-0.211	-3.704	0.000
	Youth	0.212	0.123	0.098	1.727	0.085

Black- Race, Youth- Age group between the ages of 18 to 35

4.6.2.4 Integrated Backward Elimination Results

Taking an integrated approach in running regression using the backward elimination method where all the variables from the three risk factors are entered in the regression model to assess their predictive capacity, two regression analyses were carried out using the backward elimination method, the first model included all the control and predictor variables and the second model included only the predictor variables without the control variables. After that, the two models were compared regarding their predictive power.

Table 4-58 and Table 4-59 provide the coefficients from the regression model with control variables which revealed that HC and ESE_F become non-significant predictors of BS_F when we control for other variables. The standardised betas of RP, FC, and ESE_G are consistent with the results obtained from the regression models of the individual risk factors.

Table 4-60 provides the comparable results of the regression model when run without controlling for any variables and when the control variables are incorporated. The R-square from the regression model with no control variables shows that the predictor variables explain 37.4% of the variability in BS_F compared to 45.4% from the regression model with control variables. Therefore, it was concluded that the regression model that controls for several variables has more predictive power.

Table 4-58 provides the coefficients from the regression model without control variables which revealed that HC (β=-0.089,p<0.1) is a small but significant predictor of BS_F though it was not when the individual entrepreneur regression model was produced independently. The standardised betas of RP, FC,ESE-F and ESE_G are consistent with the results obtained from the regression models of the individual risk factors.

Table 4.57: Coefficients -No control variables

		B	Std. Error	Beta	t	Sig.
5	**(Constant)**	0.446	0.261		1.709	0.089
	RP	0.110	0.057	0.098	1.927	0.055
	FC	0.384	0.048	0.426	7.977	0.000
	HC	-0.072	0.041	-0.089	-1.762	0.079
	ESE_F	0.149	0.058	0.143	2.587	0.010
	ESE_G	0.261	0.058	0.233	4.514	0.000

Table 4-59 provides the coefficients from the regression model with control variables which revealed that HC and ESE_F become non-significant predictors of BS_F when we control for other variables. The standardised betas of RP, FC, and ESE_G are consistent with the results obtained from the regression models of the individual risk factors

Table 4.58: Coefficients - Control variables

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
26	(Constant)	0.703	0.228		3.080	0.002
	RP	0.153	0.057	0.136	2.675	0.008
	FC	0.345	0.047	0.383	7.345	0.000
	ESE_G	0.308	0.054	0.274	5.748	0.000
	Black	-0.294	0.102	-0.149	-2.869	0.004
	Matric	-0.299	0.136	-0.100	-2.204	0.028
	RevR5	0.179	0.098	0.088	1.835	0.068
	RevR10	-0.487	0.175	-0.139	-2.784	0.006
	BusAge3yr	-0.282	0.124	-0.115	-2.275	0.024
	BusAge6yr	-0.321	0.114	-0.164	-2.827	0.005
	Small	0.272	0.109	0.125	2.494	0.013
	Medium	0.554	0.143	0.202	3.859	0.000
	KZ	0.270	0.154	0.081	1.755	0.080

It was therefore concluded that the integrated model with control variables had better predictive power than the one that does not control for the effects of the other possibly confounding variables. It is important to control for other factors when building an integrated model. This is the model that can be used as the foundation to develop the risk assessment model framework.

4.6.3 Hierarchical Multiple Regression

[1] Proceeding from the correlation and multiple regression (backward elimination) output, the study went further and tested each predictor variable for its unique contribution to the prediction of financial performance. The hierarchical multiple regression technique was used, and the process included four sequential steps starting with control variables followed by each of the three risk factors.

[2] Model 1: Nine control variables were entered first in the model

[3] Model 2: Financial capital was entered as the first predictor variable with the strongest correlation

[4] Model 3: Followed by entrepreneurial self efficacy-growth which is the second strongest variable

[5] Model 4: Finally risk perception was entered as the last predictor variable since it was the weakest of the three, to see if it could add any value after controlling for the other variables

Consequently, the hierarchical regression model summary was produced. Table 4-60 reveals the following results:

- Model 1 indicates that 17% of the variability in the SME success model was accounted for by the control variables. The control variables are introduced to control for the three risk factor factors (the environment, firm and entrepreneur). Race and education controlled for the entrepreneur risk variables while revenue, business age and size controlled for the firm risk variables and location for the exogenous risk factor.
- R-square change shows the increase in predictive capacity when new predictor variables are entered in addition to the control variables. It was also used to assess the unique contribution of three new predictors to explain the variance in the SME success.
- Model 2 shows that adding FC (ΔR^2 = 0.202) to the model increased the model's predictive capacity in a statistically significant way by increasing the 17.4% variance accounted for to 37.6%. FC represent the firm risk factor in the study.
- Model 3 reveals that adding ESE_G to the model further increased its predictive capacity from 38% to 43.9% (ΔR^2 = 0.063). The 6.3% increase in predictive capacity represents the entrepreneur risk factor in the study.
- Model 4: Finally the overall predictive capacity of the model rose to 45.4% from an initial 17.4% after adding the last variable RP (ΔR^2 = 0.014) to the model. This is equivalent to a 1.4% increase in predictive capacity which represents the environment risk factor in the study.

Table 4.59: Hierarchical multiple regression model summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.417[a]	0.174	0.147	0.898	0.174	6.445	9	275	0.000
2	.613[b]	0.376	0.354	0.782	0.202	88.786	1	274	0.000
3	.663[c]	0.439	0.417	0.743	0.063	30.696	1	273	0.000
4	.674[d]	0.454	0.430	0.735	0.014	7.155	1	272	0.008

a. Predictors: (Constant), KZ, BusAge3yr, Matric, Small, RevR5, Black, Medium, RevR10, BusAge6yr

b. Predictors: (Constant), KZ, BusAge3yr, Matric, Small, RevR5, Black, Medium, RevR10, BusAge6yr, FC

c. Predictors: (Constant), KZ, BusAge3yr, Matric, Small, RevR5, Black, Medium, RevR10, BusAge6yr, FC, ESE_G

d. Predictors: (Constant), KZ, BusAge3yr, Matric, Small, RevR5, Black, Medium, RevR10, BusAge6yr, FC, ESE_G, RP

e. Dependent Variable: BS_F

Moreover, the standardised regression coefficients were analysed to quantify the relationship between the independent and dependent variables. Table 4-58 provides the coefficients from the hierarchical regression model. Model 4 is the final model and is interpreted in detail below. Starting with the interpretation of the effects of the three predictor variables from the three risk factors which are all significant at $p<0.05$. It was evident that :

- If FC increases by one unit then SME financial performance increases by 0.345 units
- If ESE_G increases by one unit then SME financial performance increases by 0.308 units
- If RP increases by one unit then SME financial performance increases by 0.153 units

Therefore, the higher the financial resources, the entrepreneur's confidence in growing the company and his perception of risk, the higher the likelihood of the SME to succeed.

Table 4.60: Hierarchical multiple regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	2.780	0.130		21.307	0.000	2.523	3.037
	Black	-0.374	0.118	-0.190	-3.160	0.002	-0.606	-0.141
	Matric	-0.310	0.166	-0.104	-1.868	0.063	-0.637	0.017
	RevR5	0.307	0.118	0.151	2.594	0.010	0.074	0.539
	RevR10	-0.266	0.212	-0.076	-1.254	0.211	-0.684	0.152
	BusAge3yr	-0.082	0.150	-0.033	-0.546	0.585	-0.377	0.213
	BusAge6yr	-0.149	0.137	-0.076	-1.088	0.278	-0.420	0.121
	Small	0.424	0.132	0.196	3.219	0.001	0.165	0.683
	Medium	0.840	0.172	0.307	4.887	0.000	0.501	1.178
	KZ	0.236	0.185	0.071	1.274	0.204	-0.128	0.600
2	(Constant)	1.792	0.155		11.594	0.000	1.488	2.096
	Black	-0.233	0.104	-0.118	-2.238	0.026	-0.438	-0.028
	Matric	-0.271	0.145	-0.091	-1.877	0.062	-0.556	0.013
	RevR5	0.252	0.103	0.125	2.449	0.015	0.050	0.455
	RevR10	-0.370	0.185	-0.106	-1.998	0.047	-0.735	-0.006
	BusAge3yr	-0.175	0.131	-0.071	-1.341	0.181	-0.433	0.082
	BusAge6yr	-0.220	0.120	-0.112	-1.835	0.068	-0.455	0.016
	Small	0.302	0.115	0.139	2.613	0.009	0.074	0.529
	Medium	0.601	0.152	0.219	3.959	0.000	0.302	0.899
	KZ	0.228	0.161	0.069	1.415	0.158	-0.089	0.545
	FC	0.428	0.045	0.475	9.423	0.000	0.339	0.518
3	(Constant)	0.944	0.212		4.453	0.000	0.527	1.362
	Black	-0.213	0.099	-0.108	-2.154	0.032	-0.408	-0.018
	Matric	-0.295	0.137	-0.099	-2.150	0.032	-0.566	-0.025
	RevR5	0.204	0.098	0.101	2.071	0.039	0.010	0.397
	RevR10	-0.453	0.177	-0.130	-2.565	0.011	-0.801	-0.105
	BusAge3yr	-0.257	0.125	-0.104	-2.054	0.041	-0.503	-0.011
	BusAge6yr	-0.294	0.115	-0.150	-2.568	0.011	-0.520	-0.069
	Small	0.251	0.110	0.116	2.281	0.023	0.034	0.468
	Medium	0.527	0.145	0.192	3.642	0.000	0.242	0.812
	KZ	0.326	0.154	0.098	2.116	0.035	0.023	0.629
	FC	0.395	0.044	0.438	9.048	0.000	0.309	0.480
	ESE_G	0.299	0.054	0.267	5.540	0.000	0.193	0.406

4	(Constant)	0.703	0.228		3.080	0.002	0.254	1.152
	Black	-0.294	0.102	-0.149	-2.869	0.004	-0.495	-0.092
	Matric	-0.299	0.136	-0.100	-2.204	0.028	-0.567	-0.032
	RevR5	0.179	0.098	0.088	1.835	0.068	-0.013	0.371
	RevR10	-0.487	0.175	-0.139	-2.784	0.006	-0.832	-0.143
	BusAge3yr	-0.282	0.124	-0.115	-2.275	0.024	-0.526	-0.038
	BusAge6yr	-0.321	0.114	-0.164	-2.827	0.005	-0.545	-0.098
	Small	0.272	0.109	0.125	2.494	0.013	0.057	0.487
	Medium	0.554	0.143	0.202	3.859	0.000	0.271	0.836
	KZ	0.270	0.154	0.081	1.755	0.080	-0.033	0.572
	FC	0.345	0.047	0.383	7.345	0.000	0.252	0.437
	ESE_G	0.308	0.054	0.274	5.748	0.000	0.202	0.413
	RP	0.153	0.057	0.136	2.675	0.008	0.040	0.265

a. Dependent Variable: BS_F

All the regression models were significant at $p<0.01$, See detailed results from the ANOVA tables in Table 6-9 in Appendix B. The ANOVA results include the output for the individual risk factors, the integrated model and the final hierarchical model.

Table 4-61 provides the results from the regression model that focused on only the direct relationships between the predictor variables and the dependent variable. The next sections focus on testing indirect relationships of the the predictor variables to the outcome variable.

4.6.3.1 Mediation Analysis

Proceeding from subsection 3.8.3.1 where the four-step mediation analysis was detailed, the objective of this section is to report the results obtained from this process. This section start by testing the hypothesis that Financial capital mediates the relationship between ESE (Finance and Growth) with SME success (BS_F).

RQ7: *How does entreprenerial self efficacy (Finance and Growth) affect financial performance?*

To answer the research question, mediation analysis was conducted. SME success (financial performance) is the dependent variable, financial capital is the mediator and entrepreneurial self-efficacy in managing finances and growth of the business are the independent variables. The objective of the analysis is to investigate the possibility of financial capital mediating the relationship between ESE (Finance and Growth) and financial Performance. Figure 4-3 shows the different models tested in the mediation analysis that represent the total effects (direct and indirect paths).

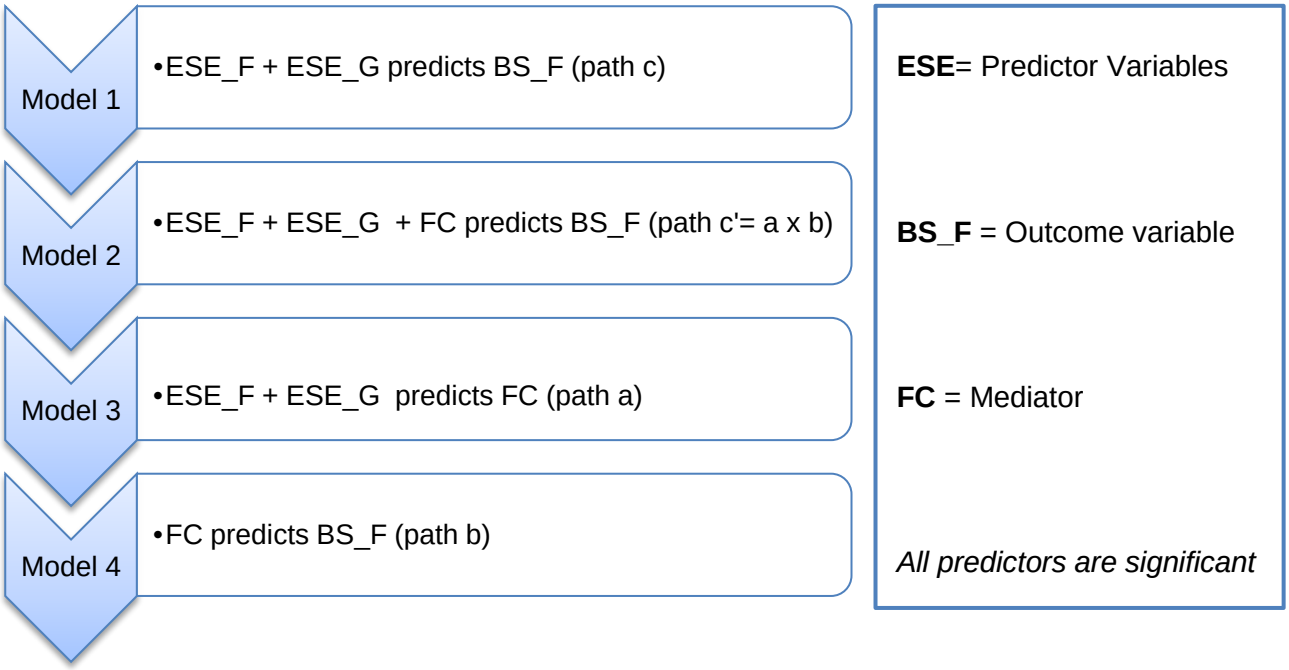


Figure 4.4: Regression models tested

Table 4-62 provides results that suggest that partial mediation is present:

- Model 1: ESE_F and ESE_G significantly predicts BS_F with β=.21 and β=.29 respectively at p<.01. The unstandardized slopes suggest that when ESE_F and ESE_G each increase by 1 unit, BS_F improves by 0.22 and 0.32 units respectively.
- Model 2: ESE_F, ESE_G and FC significantly predicts BS_F with β=.10, p<.05; β=.23, p<.01 and β=.46, p<.01 respectively. When the mediator (FC) is added, the slopes for ESE_F and ESE_G decrease by 17% overall.

Moreover, the hierarchical model reveals that when comparing model 1 to model 2, adding financial capital improved the R-square from 17% to 36% which means financial capital play an important role in explaining the variability in SME success.

- Model 3: ESE_F and ESE_G significantly predicts FC with β=.23, p<.01 and β=.13, p<.05 respectively.
- Model 4:FC significantly predicts BS_F with β=.534, p=.01, B=.481 and R-Square of .285

Table 4.61: Models for mediation analysis

	SME Success (BS_F)						Financial Capital		
	Model 1 No mediator			Model 2 With mediator			Model 3 on FC		
	B	**SE**	**β**	**B**	**SE**	**β**	**B**	**SE**	**β**
Intercept	1.03**	0.25	-	0.59**	0.22	-	1.07**	0.29	-
ESE									
ESE_F	0.22**	0.06	0.21**	0.11*	0.06	0.10*	0.26**	0.07	0.23**
ESE_G	0.32**	0.07	0.29**	0.25**	0.06	0.23**	0.16*	0.08	0.13*
FC	-	-	-	0.41**	0.05	0.46**	-	-	-
F		28.71**			52.50**			13.83**	
R^2		0.17			0.36			0.09	
Adj R^2		0.16			0.35			0.08	
ΔR^2		-			0.19			-	

*B=unstandardized coefficient, SE=Standard errors, β=standardized coefficient, N=285, **=p<0.01, *=p<0.05, ***=p<0.1, R^2=R-Square, ΔR^2=Change in R-Square*

Therefore, the indirect and direct paths were calculated using Sobel method, path a = 0.42, path b = 0.481, path c = 0.54 and path c' (path a x path b) = 0.20. These paths represent slopes for model 3, model 4, model 1, model 2 respectively which constitute the total effect or complete mediation model.

H7: *Finacial capital mediates the relationship between entrepreneurial self efficacy and financial performance*

It was concluded that hypothesis 7 is supported and significant, thus indicating the presence of partial mediation.

4.7 Chapter Summary

The study started with an initial sample size of 286 characterized by 58% males and 42% females. The sample consisted of 47% whites and 42% blacks who were mostly (55%) between the ages of 26 and 45. Correlational and hierarchical multiple regression analysis were conducted. Figure 4.5 provides a step-by-step summary of the statistical processes undertaken and the results for each step thereof.

This sample further revealed that the respondents were well educated with 85% of the entrepreneurs having post matriculation qualifications, of the 85% post matriculation, 33% of them have post-graduate degrees. Most of the entrepreneurs (80%) work in their businesses full time and 40% of them have been in business for more than six years.

The reliability and validity of the constructs and scales used were tested to establish a reliable factor structure and measurement model of the hypothesised integrated risk assessment framework. After conducting exploratory and confirmatory factor analysis, a measurement model with eleven factors, nine predictor and two outcome variables was produced. The EFA and CFA results confirmed that the manifest variables converged to their respective factors and were divergent with unrelated factors.

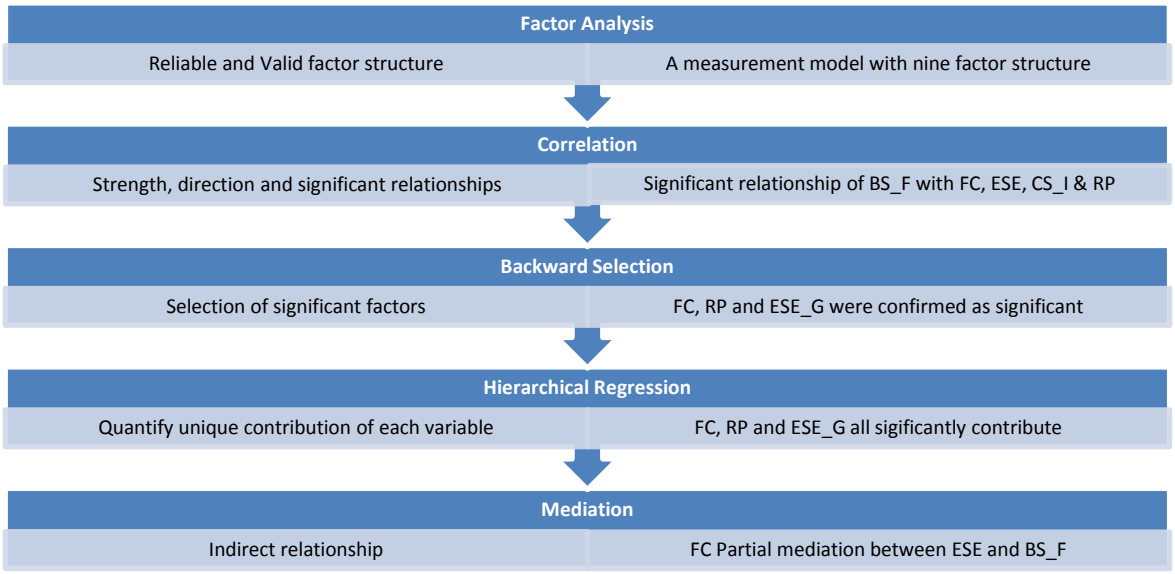


Figure 4.5: Summary of analysis process and results

- A factor structure with 9 factors (IVs) and 2 factors (DV) with its components was established. Three dimensions for entrepreneurial self-efficacy, two dimensions for cognitive styles and two dimensions for SME success were confirmed. Reliability and validity of constructs was also confirmed.
- The direction, size, accuracy, strength and significance of relationships were conducted. Risk Perception, financial capital, entrepreneurial self-efficacy (Management, Finance and Growth) and cognitive style-intuitive were confirmed to having a significant positive relationship with BS_F
- FC, ESE_G and RP were confirmed significant predictors of BS_F.
- After controlling for other variables, when FC, RP and ESE_G were added, each contributed significantly to the SME model. Therefore, each variable is a unique contributor to the SME success model
- Further analysis show that FC has a mediation effect between ESE and SME Success.

The analysis was carried out with the objective of establishing and quantifying the relationships between various variables of the entrepreneur, the firm, and the environmental risk factors. The respondents were entrepreneurs running their own small businesses.

The correlational analysis provided information about the form and degree of the various relationships that exist. This allowed the researcher to quantify the strength, size, direction and significance of the correlations. After quantifying the relationships between the dependent variable and the independent variables, it was evident that comparatively, financial capital by far has the strongest relationship with business financial performance, followed by entrepreneurial self-efficacy (financial and growth), then risk perception and entrepreneurial self-efficacy (management). and lastly, cognitive style-intuitive. Cognitive style-planning, business planning and human capital all had a very small positive relationship with a correlation coefficient of less than 0.1. These results are summarised in Table 4-63.

The hierarchical multiple regression indicated that financial capital has the strongest predictive capacity, followed by entrepreneurial self-efficacy- growth, then risk perception and lastly entrepreneurial self-efficacy – finance, all with significant standardised regression weights. It was also evident that the model's predictive power improves when control variables are included in the regression equation.

Table 4-64 show that the predictive power of the SME model changes depending on whether the risk factors are analysed as individuals or as an integrated model. The integrated model with no control variables explain about 37% of the variability in SME success while the model that control for other variables explains 46%. Therefore, this suggests that the model that controls for other confounding factors has better predictive power.

The effect of the regression weights change depending on whether the model includes or excludes control variables. The integrated model with control versus no control are significant at different levels: RP: β=0.160 vs 0.098; FC: β=0.386 vs 0.426; ESE_G:β=0.278 vs 0.233 and non-significant for HC and ESE_F, β=-0.089 and 0.143 respectively.

However, the regression models that are run as individual factors independently produced different R-square values when compared with the integrated factors, the firm (34% individual versus 29% integrated); the entrepreneur (21% individua versus 17% integrated) and the environment (7% individual versus 6% integrated). This kind of model omits practicality because entrepreneurship in real life takes place in an ecosystem that has all these three risk factors integrated.

Both the individual and integrated models show that they have higher predictive power when control variables are included. On the individual independent models the betas are stronger when the model does not control for other variables. However, for the integrated model there is no clear trend, the betas differs per construct. The researcher adopted the integrated approach with control variables as the appropriate model to use to assess SME success.

This chapter concluded by evaluating the effect of indirect and direct paths on financial performance and the results suggest that there is partial mediation where financial capital mediates the relationship between entrepreneurial self-efficacy (Finance and Growth) and financial performance.

Table 4.62: Summary of correlational analysis results

Correlation between IVs and DV		BS_Financial Performance			BS_Growth		
Factors	**Hypothesis**	**Coefficient**	**Supported**	**Significant**	**Coefficient**	**Supported**	**Significant**
Risk Perception	H1	0.238	Yes	Yes	0.118	Yes	Yes
Financial Capital	H2	0.534	Yes	Yes	0.282	Yes	Yes
Business Planning	H3	0.092	Yes	No	0.116	Yes	No
Human Capital	H4	0.073	Yes	No	0.123	Yes	No
Entrepreneurial Self Efficacy (ESE)	***H5***						
ESE-Management	H5a	0.263	Yes	Yes	0.203	Yes	Yes
ESE- Finances	H5b	0.316	Yes	Yes	0.224	Yes	Yes
ESE-Growth	H5c	0.363	Yes	Yes	0.265	Yes	Yes
Cognitive Style (CS)	***H6***						
CS-Intuition	H6a	0.13	Yes	Yes	0.145	Yes	Yes
CS-Planning	H6b	0.064	Yes	No	0.013	Yes	No

Table 4.63: Summary of the findings from the backward elimination results

Selection of significant factors								
Backward Elimination	**Individual Effects with CV**		**Individual Effects without CV**		**Integrated Effects with CV**		**Integrated Effects without CV**	
Construct	**Beta [β]**	**R-Square**	**Beta [β]**	**R-Square**	**Beta [β]**	**R-Square**	**Beta [β]**	**R-Square**
Risk Perception	0.233	7.10%	0.238	5.70%	0.160		0.098	
Financial Capital	0.487	34.70%	0.534	28.50%	0.386		0.426	
Business Planning	-		-		-		-	
Human Capital	-		-		-		-0.089	
Entrepreneurial Self Efficacy(ESE)								
ESE-Management	-		-		-	45.70%	-	37.40%
ESE-Finances	0.194	20.90%	0.208	16.90%	-		0.143	
ESE-Growth	0.268		0.285		0.274		0.233	
Cognitive Style (CS)								
CS-Intuition	-		-		-		-	
CS-Planning	-		-		-		-	
Total Variability Explained	**4**	**62.70%**	**4**	**51.10%**	**3**	**45.70%**	**5**	**37.40%**

CV-Control Variables, Beta- standardized regression weights

5 CHAPTER 5: DISCUSSION AND CONCLUSIONS

The study examined the relationships that exist between SME success and the three risk factors (the environment, firm and entrepreneur). It further evaluated the magnitude of the effect of each risk variable in the success of South African (SA) small and medium-sized enterprises (SMEs). Subsequently developed an integrated risk assessment model framework that can be used to assess SA SMEs holistically.

Proceeding from the results reported in Chapter Four, this chapter discusses the findings of the study starting with the profile of the entrepreneurs, then the findings from each risk variable and the integrated model. Moreover, the chapter discusses the study's theoretical and practical contribution and implications, limitations, recommendations and ends with suggestions for future research before conclusions of the study.

5.1 Profile of the Entrepreneurs

The sample characteristics were presented in Chapter 4. However, this chapter discusses and emphasises only the key findings. Of the 286 respondents who are the entrepreneurs in this study, 87% of them come from developed areas. It was a very educated sample with 85% having post-matriculation qualifications. Moreover, this can be attributed to the sampling frame. South African studies have shown mixed findings regarding the levels of education of SA entrepreneurs.

For example, SBP (2011) had more than 40% of post-matriculation which is a fairly educated sample. However, Finscope (2010) survey had only 9% post matriculation which is an uneducated sample. GEM report supports this study's findings of educated entrepreneurs; they reported in 2016 that the number of entrepreneurs with degrees has increased over the years. This discrepancy in the educational profile can be attributed to the survey's geographic focus area which is reflected in the samples collected during these studies (Finscope, 2010; Mike & Penny, 2016; SBP, 2011).

Developed provinces tend to have educated and sophisticated entrepreneurs when compared to rural and underdeveloped areas. Based on the study's sampling frame, the educational profile of this study is explained by the concentrated number of respondents from Gauteng and Western Cape provinces.

There were more males and whites compared to females, blacks, and other races in the sample. In South Africa, men are more entrepreneurially active than women (Olawale & Garwe, 2010) thus the findings are consistent with previous findings from other studies. The businesses that are owned by black people seem to perform worse on the success scale when compared with firms that are belonging to white people. This is due to the legacy of apartheid which the government has been trying to address since democracy (South Africa, 2004).

Only 14% of the sampled businesses are medium sized, the rest (86%) are small, very small and micro enterprises. However, most of these companies have been in business for four years, and more but they remain small. This is a reflection of the problem SA faces of slow growth and high failure rates (Mike & Penny, 2016; Rogerson, 2004) This was a very experienced sample because 75% of the entrepreneurs have been running businesses for five years and more. However, it is concerning that most of them have not transited to medium size businesses after being in business for so long. These entrepreneurs, approximately 80% of them run their businesses on a full-time basis, so the lack of growth cannot be attributed to lack of commitment but rather to other macro and micro economic factors (Bruwer & van Den Berg, 2017).

The lack of growth reflected on the educated, experienced, committed sampled entrepreneurs who are mostly based in provinces that are developed and expected to be conducive for SMMEs to grow, confirm that the problem diagnosed from previous studies and this study persist. Therefore, policymakers, practitioners, researchers and all stakeholders involved need to start investigating different appropriate solutions for the SA SMME sector and one of them is proposed in this chapter.

5.2 Discussion of the Findings

The previous chapters were structured according to the two main risk categories with three risk factors and 6 risk variables with their components. The results are therefore discussed according to the same structure per hypothesis. Starting with the discussion of the findings of exogenous risk factors which focused on the environment variable, followed by the endogenous risk factor which constitutes the firm and entrepreneur variables.

5.2.1 Exogenous Risk Factor-The Environment

This risk category focuses on external factors affecting the success of SMEs. The exogenous risk factor section evaluated the perception of entrepreneurs about the environment in which they operate in South Africa rather than the environment itself.

5.2.1.1 Risk Perception and Financial Performance

H1: There is a positive relationship between RP and BS_F

The hypothesis states that perceiving a lower level of risk is associated with the financial performance of the business. The way the association is framed by the author suggests that risk behavior might mediate this relationship between risk perception and financial performance, but it has not been tested (Simon, Houghton, & Aquino, 2000). However, the study tested only the direct relationship.

According to the findings of the study, the relationship is confirmed and is significant. Based on the fact that the business environment has a significant impact on the growth of the business (Delmar & Wiklund, 2008), it was expected that the low-risk perception on the environment would have a positive relationship with SME success.

The results of this study were specifically on the relationship between financial performance which suggests that when the entrepreneur perceives the environment as low risk, the SME performs well financially due to entrepreneurial risk behavior. Risk perception in this study refers to the attitude and the view of entrepreneurs of the environment.

The environmental risk variables assessed were on the risk perception of growth, government policies, social and cultural factors. Experienced entrepreneurs are expected to be very optimistic and confident. Their perception or assessment of the environment is supposed to be highly positive (Burns, Peters, & Slovic, 2012).

The findings confirm that the association between human capital and risk perception exist, but it is not significant. The non-significant finding might be due to the different indices used to measure human capital. In this study, human capital was measured with business training. Human capital is a factor harbouring variables like experience, education, skills, and knowledge and it seems like the previous author used the experience as a unit of analysis thus the inconsistency.

Categorization theory assert that entrepreneurs assess their environment favourably, they see opportunities where non-entrepreneurs see risks (Norton Jr & Moore, 2006). Entrepreneurs are very optimistic individuals, the way they frame situations make them assess the environment more favourably with more opportunities and fewer threats and perceive their firms to have more strengths than weaknesses (Palich & Ray Bagby, 1995; Simon et al., 2000). This is consistent with the study's findings; low perceived risk imply high performance.

5.2.2 Endogenous Risk Factor- The Firm

The endogenous risk factor in this section discusses the findings specific to the internal firm variables which are financial capital and business planning.

5.2.2.1 Financial Capital and Financial Performance

H2: There is a positive relationship between FC and BS_F

Financial capital in this study refers to the level of satisfaction of entrepreneurs regarding capital available for business development and growth. It includes start-up, working and growth capital. The level of satisfaction of capital available for business development emerged as a good measure of the finance capital construct when compared to funding in the business.

The hypothesis stated that when the level of satisfaction of the entrepreneur increases regarding capital available for development, the business financial performance improves too. The research findings show that the relationship is positive and significant which means the hypothesis is supported. This is in line with extant literature which theorises that there is a strong positive relationship between financial capital and SME success which has been confirmed by most research in entrepreneurship (DTI, 2008; Finscope, 2010; Makina et al., 2015; Rosenbusch, Brinckmann, & Müller, 2013).

Literature has shown that lack of external finance in an SMME can cause the business not to grow or if it grows, it will do so at a very slow pace. Several studies have also shown that the lack of access to finance is one of the biggest reasons SMMEs fail (Beck, Demirgüç-Kunt, & Levine, 2007; Makina et al., 2015). Though business financial performance is by far the strongest amongst other variables in this study, it is still not as strong as literature purports it to be. However, if the moderating effects of skills, the level of education, and experience are introduced the strength of the relationship could increase (Psaltopoulos et al., 2005) thus improving financial performance.

Therefore, the findings support current literature, the moderate instead of a strong relationship as expected is explained by potential moderating effects that are not tested in this study.

5.2.2.2 Business Planning and Financial Performance

H3: There is a positive relationship between BP and BS_F.

Business planning refers to a written business plan that is developed by the entrepreneur and used to run the business operations.

The hypothesis states that entrepreneurs who have a written business plan and use it to operate their enterprises improve the business financial performance. This is supported and consistent with literature though the strength of the relationship is not clearly defined, there is agreement that the relationship does exist (Howard & Jawahar, 2002). The more the entrepreneur plans and uses the business plan to run the business, the more the business performs better financially.

The research findings show that the relationship between business planning and financial performance is positive, small and non-significant which means the hypothesis is supported but not significant. Since the hypothesised relationship was not significant, the backward elimination regression process dropped this variable during regression analysis further confirming its insignificance. Therefore, it can be concluded that business planning has no significant relationship and effect on the financial performance of the sample analysed, but this contradicts the authors cited earlier (Perry, 2001).

In response to the contradictory findings, the researcher had to probe as to why the relationship is so small and not significant. Perry (2001) also find it difficult to measure and quantify the relationship between business planning and financial performance. The difficulty in establishing the relationship can be attributed to the fact that very little formal planning goes on in small businesses and possibly other mediating and moderating factors.

5.2.3 Endogenous Risk Factor- The Entrepreneur

Endogenous risk factor at the individual level discusses findings on the three risk variables which are human capital, entrepreneurial self-efficacy and cognitive styles.

5.2.3.1 Human Capital and Financial Performance

H4: There is a positive relationship between HC and BS-F

Human Capital broadly refers to the level of education, skills, knowledge, business training and work experience. The hypothesis states entrepreneurs who have received business training run successful SMEs. The level of education was tested as well and found that it is a significant control variable.

The research findings show that the relationship is positive, small and non-significant which means the hypothesis is supported but not significant. There are a plethora of studies that support this hypothesis though the elements or components of human capital differ from one study to the next, thus the mixed findings. Some of the studies that support this hypothesis state the following:

- Entrepreneurship literature maintains that education and related experiences can influence the individual's level of self-efficacy and in turn, impact on entrepreneurial outcome (Arora, Haynie, & Laurence, 2013). This introduces an element of mediation effect which was not tested in this study but can be tested on SA data in future research. Education was used as a control variable which was found to be significant. Since literature claims that moderating and mediating effects make the relationship between HC and BS_F strong, future research should explore this in the South African context.
- Experience is viewed as an important determinant for entrepreneurial start-up success (Gompers, Kovner, Lerner, & Scharfstein, 2006)
- Several scholars have argued that there is a significant relationship between human capital and success (Bates, 1990; Crook et al., 2011; Unger et al., 2011).

- Applied psychology research on individual job performance argues that there is a strong relationship between human capital and firm performance. This argument is consistent with both human capital theory and resource base theory (Crook et al., 2011).

The findings support the claim that there is a relationship between human capital and financial performance but the relationship has been found to be weak and insignificant for the South African sample. These study's findings suggests that the relationship is not significant which is contrary to the previous author's findings.

The discrepancy can be attributed to potential.moderating, and mediating effects and the mere fact that small businesses do not plan and those who have business plans do not use it which makes it difficult to measure the business plan role and effect in the business .

5.2.3.2 Entrepreneurial Self-Efficacy and Financial Performance

Entrepreneurial self-efficacy has three dimensions which are management, finance, and growth. Management refers to the level of competency of the entrepreneur in running all aspects of the business while finance and growth refer to the degree of ease in which the entrepreneur performs and understand her business finances, and growth strategy and challenges.

H5a: There is a positive relationship between ESE_Management and BS-F

H5b: There is a positive relationship between ESE_Finances and BS-F

H5c: There is a positive relationship between ESE_Growth and BS-F

ESE is a belief of the entrepreneur in his ability to influence and regulate situations and events that affect his/her business (Bandura, 1994). The hypothesis states that the increase of the entrepreneurs' beliefs that they can influence and regulate their business's situations improves the business financial performance. An increase in entrepreneurial self-efficacy suggests an increase in business performance. The hypothesis was based on conceptual foundations of social cognitive and self-efficacy theories (Bandura, 1991, 2011).

The findings of the study show that all three hypothesis is positive and significant, therefore H5a, H5b and H5c are supported. Several scholars support the study's hypothesis. First, it is consistent with Bandura's theories on self-efficacy and social cognition.

- Bandura states that entrepreneurs who perceive themselves as highly efficacious are likely to succeed because they put enough effort to achieve success (Wood & Bandura, 1989)
- Stajkovic and Luthans (1998) found a significant correlation between self-efficacy and work performance

It is generally accepted that there is a positive relationship between self-efficacy and performance (Bandura, 1982, 1989; Stajkovic & Luthans, 1998; Venter, 2014). However, there are still studies that argue that there is a negative relationship between entrepreneurial self-efficacy and performance and this relationship occur when the analysis is done across time rather than across individuals. The negative relationship can be explained by overconfidence which leads to less effort, complacency and little resources committed to a task (Vancouver, Thompson, Tischner, & Putka, 2002). There are also moderating and mediating effect of motivation and persistence which are not tested in this study, which might be of interest for future studies

5.2.3.3 Cognitive Styles and Financial Performance

Cognitive styles refer to entrepreneurs' preferred way of doing business. Cognitive styles could be three or two dimensional depending on whether one follows Kahnemann or Cools' theory (Cools & Van den Broeck, 2007; Kahneman, 2011). The hypothesis is based on Kahneman's two dimensional model which is cognitive styles-intuitive (CS_I) and cognitive style-planning (CS_P).

H6a: There is a positive relationship between CS_I and BS-F

H6b: There is a positive relationship between CS_P and BS-F

The findings show that there is a positive relationship between cognitive style and financial performance however the relationship is significant only for CS_I but non-significant for CS_P. Therefore both hypotheses are supported though H6b is not significant. The findings show that entrepreneurs who use a lot of intuition, who are creative and innovative, who are motivated by on-going innovation and always push boundaries, run successful businesses. However entrepreneurs who are very analytic, like detailed action plan, prefer to work within a defined structure, their association with financial performance is small and insignificant.

One of the interesting questions that the researcher sought to answer from the sample was which of the two cognitive styles entrepreneurs prefer. This was not a research question the study focused on, but an interesting observation from the sample. Entrepreneurs who prefer CS_I are viewed as creative, and those who prefer CS_P are viewed as analytic. The findings suggest that more entrepreneurs prefer intuitive styles. Only 3% and 9% responded that they do not prefer intuitive and analytic style respectively. The results support the researcher's initial views that entrepreneurs need both styles at different stages when making decisions, 97% use intuition when they make decisions, and 91% are analytic and prefer detailed planning.

The hypothesis is supported by Acedo and Florin (2006), he argues that taking a cognitive perspective on internationalization studies add significant value to entrepreneurship research. He diverts from convention and uses cognitive rather than demographic profiles of entrepreneurs to analyze internationalization. This hypothesis was adopted from this theory and adapted to SME risk research. Acedo and Florin (2006) goes on to argue that cognitive style of the entrepreneur plays a critical role in the growth of the business.

Kirton and De Ciantis (1994) argued that cognitive style is becoming an important variable to measure in studies that investigate work performance thus the reason to evaluate its relationship with financial performance in this study. Urban (2012) found a strong positive relationship between the knowing, planning and creating cognitive style with attitudes towards enterprising.

The study argues that this finding is in support of this study's finding when extending attitudes towards enterprising to business success.

After the findings of the individual relationships of various risk variables with SME success (financial performance) has been discussed, the study went further to discuss the findings on the effect of each of the risk variables in an integrated model.

5.2.4 Integrated Model (Environment, Firm and Entrepreneur on Financial Performance)

The core of this study was about the integration of the three risk factors, the environment, the firm and the entrepreneur to build an integrated risk assessment model framework for SMMEs. The findings are discussed below comparing individual independent and integrated models.

First, findings from the independent individual risk factors;

- The models that controlled for other variables have better predictive power compared to the models without control variables
- Business planning, human capital, ESE- management and cognitive style-planning were all non-significant predictors of financial performance. This was confirmed by the backward elimination process and concurs with the findings from correlational results. This is not consistent with most studies as discussed in previous section (Perry, 2001).
- The disadvantage of examining the effect of predictor variables on an outcome variable without controlling for other possible confounding effects is that it overestimates the effect (beta) of each predictor variable. Moreover, these models do not reflect reality because no individual risk factor operates in isolation, they operate in a complex system with interdependent variables (Milana et al., 2016)
- Risk perception, financial capital, ESE-finances, and ESE-growth are all significant predictors of financial performance (T. Cooper & Faseruk, 2011)

- Cumulatively, the four models from the individual risk factors with control variables, explained 63% while the models without control variables explained 51% of the variability in business financial performance. It goes to show that analysis should always control for demographic and other variables.
- The results from the models computed independently from other risk factors that affect them can be misleading since the risk factors practically do not operate in isolation, they are interdependent, that is why the study could allow them to correlate. To try to simulate real entrepreneurship ecosystem, the model has to integrate all risk factors

Second, the findings from the model integrating the environment, the firm and entrepreneur risk variables with financial performance are discussed

- Similar to the individual models, the results show that it is important always to control for other significant variables to minimize confounding and error effects.
- ESE-Finance and CS-Intuitive had a significant relationship with financial performance. However, they are not significant predictors of SME success. Business planning, human capital, ESE- management, and CS-Planning were all non-significant predictors as shown by the forward elimination method. This further confirms the non-significant association found during the correlational analysis.
- Three risk variables emerged from the controlled integrated model as significant predictors of financial performance. However, five risk variables emerged from the model with no control variables. This suggests that if there are no control variables in the model, the results become unreliable and unstable.
- The controlled integrated model shows that the effect of each risk factor is stronger compared to when the model has not controlled for other effects.

Following from the findings discussed above, this study can, therefore, answer the following research questions:

RQ8: To what extent does each of the risk factors affect the success of the SME?

The study investigated two risk categories with three risk factors, endogenous (the firm, the entrepreneur) and exogenous (the environment). The results show that all three risk factors significantly affect the success of the SME. Therefore, the hypothesis is supported, and research question is answered. The firm (FC, β=0.386), the entrepreneur (ESE-Growth, β=0.274) and the environment (RP, β=0.160). Each risk factor has a significant effect on SME success.

The findings show that the firm risk factor by far has the strongest effect, followed by the entrepreneur and lastly, the environment risk factor.

RQ9: How does the integration of the different risk factors affect the likelihood of success of the SME?

The results show that when the three risk factors are integrated, they predict the likelihood of success better because they take into account the effect of the interdependencies that exist across risk categories. Therefore, the integrated risk model is a more accurate predictor than an individual model for the SME success. This finding supports the multitude of studies that argue that integration is the best method of analyzing entrepreneurship constructs because of its multidimensional, interdisciplinary, systematic and complex nature of relationships (Acedo & Florin, 2006; Baum et al., 2001; Wiklund et al., 2009).

RQ10: To what extent does the entrepreneur contribute towards the success of the SME and why?

The R-square change results provide information about the unique contribution of each variable, CV=17.4%, FC =20.2%, ESE-G=6.3%, RP=1.4%.

Therefore, the hypothesis is not supported because only one variable was selected from the entrepreneur risk factor which contributes only 6.3% in the financial performance scale. ESE_G in this model is not the major contributor to the SME success model. The entrepreneur variables were expected to contribute or explain more than 50% of the variability in SME success since it is a key determinant of success.

The finding is that FC is by far the biggest contributor and not the entrepreneur as hypothesised earlier. The hypothesis was based on the theory that the entrepreneurship process does not exist without the entrepreneur. Entrepreneurship is an action-oriented process and can only happen when the entrepreneur takes action. This is also supported by the human action theory.

RQ11: What is the ideal conceptual framework to use to develop a model to assess the risks and likelihood of success of SMEs in South Africa?

The result shows that the integrated model with control variables explains 46% of the variability on the SME success scale and has integrated all three risk factor levels and found them significant. The hypothesis states that the best conceptual framework should integrate all three risk factors in the model with the entrepreneur at the center of the process. This is consistent with complex theory. This hypothesis is supported, and the equation of the conceptual framework can be presented as follows:

Standardised Equation specific to this study's sample

F(SME Success) = The Entrepreneur + The Firm + The Environment + Constant…..(5.1)

F(BS_F) = ESE-Growth + FC + RP + Constant……..(5.2)

F(BS_F) = 0.27(ESE-Growth) + 0.39(FC) + 0.16(RP) + Constant…….(5.3)

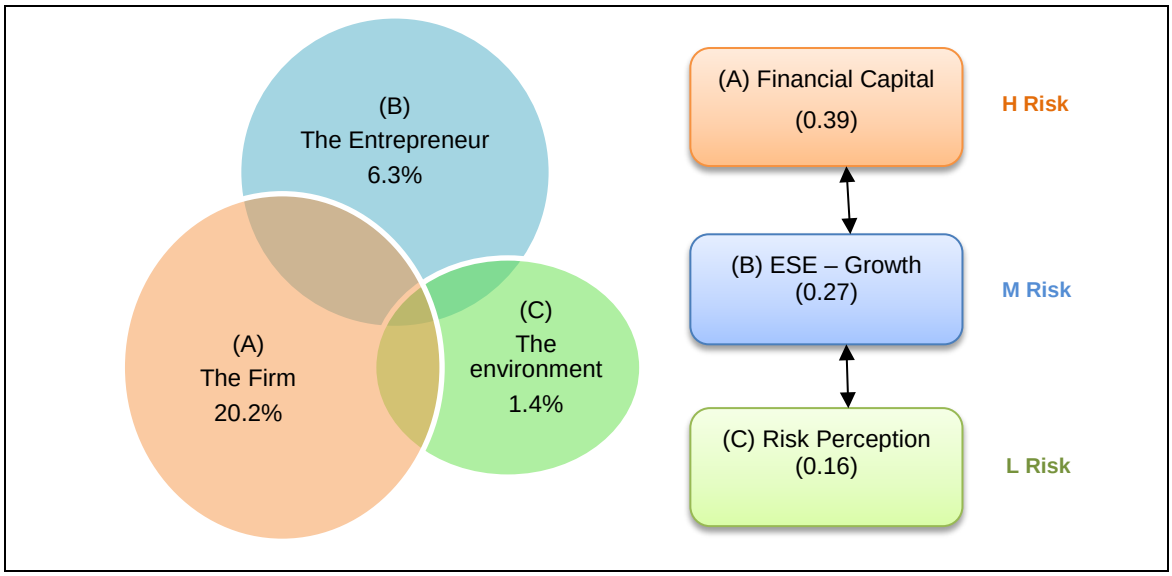
In regression analysis, unlike in SEM, the constant is used to ensure that the residuals have a mean of zero. In SEM the error is included in the model while in regression it is not taken care of thus the inclusion of the constant term.

Standardised General Equation for SMEs in South Africa

$F(X) = ax_1 + bx_2 + cx_3 + \text{Constant}$……..(5.4)

Where X_1 - all the significant entrepreneur variables, X_2 - all the significant firm variables, X_3 - all the significant environment variables, and F(X)= Y

Where a, b, c = are regression weights for entrepreneur, firm, and environment significant variables respectively



ESE- Entrepreneurial self- efficacy, H-High, M-Medium, L-Low

Figure 5-1: Schematic presentation of the integrated risk assessment model

Figure 5.1 is a graphic view of the integrated model findings with (H Risk, M Risk & L Risk) depicting high, medium and low risk. The Alphabets A to C are meant to make it easier for the reader in case of a black and white copy which won't reflect the colour coding. The figure shows that an SMME likelihood of success improves significantly if it has the financial capital, the self-efficacy to grow and a perception of low risk. An entrepreneur who has a perception of high risk still has a better chance of succeeding compared to an entrepreneur who lacks the financial capital to develop the business. Lack of financial capital is by far the highest risk variable that causes most of the SMMEs in South Africa to fail. The pictorial view explains the following:

- The percentages inside the circle refers to the unique contribution of each risk factor
- The size of the circle represents the size of the contribution to the model
- The numbers in the squares refers to the effect of each risk variable
- The double headed arrows show interdependencies within the system
- The overlapping circles represent integration, interrelationships and interdependencies
- H represents high risk, M- medium risk and L-low risk and impact thereof. The lack of any of each of the risk variables exposes the SME to risk and possibly failure depending on the level of risk exposed to.

RQ7: How does entrepreneurial self-efficacy (Finance and Growth) affect business financial performance?

The results show that entrepreneurs with a high level of entrepreneurial self-efficacy can get capital to grow their businesses, thus resulting in an improvement in financial performance. The hypothesis which states that financial capital mediates the relationship between entrepreneurial self-efficacy and financial performance is supported. There is partial mediation between ESE and SME success. This is in support of existing theory that states that motivation and self-confidence inform the quality of decisions taken, which improves the chance of getting finance that leads to a successful SME. These two variables usually play a mediating effect on SME success (Tyszka et al., 2011)

5.3 Theoretical Contribution and Recommendation

Many scholars in the entrepreneurship literature are calling for new models to be developed that are unique to small business, these models should take an integrated, multi-dimensional approach (Baum et al., 2001; Botha et al., 2015; Miller, 1992; Nadkarni & Barr, 2008; Smit & Watkins, 2012). Such models are expected to address some of the many challenges faced by the SMME sector. This study is responding to such calls by developing a risk assessment model framework that takes a holistic, integrated, multidimensional view that includes endogenous and exogenous risk factors.

The main theoretical contribution of this study is towards complex theory, systematic and holistic perspective, small business risk literature and integrated approach (Isenberg, 2011; Milana et al., 2016; Wiklund et al., 2009). The details of the study's theoretical contribution are discussed below

- A theoretical framework of risk assessment for South Africa SMEs has been established which helps quantify the level of risk associated with the entrepreneur, the firm and the environment in one (Smit & Watkins, 2012)
- A model that captures the dynamics of both micro (psychological) and macro (contextual) influences
- A quantitative tool for South Africa to measure the likelihood of success of SMEs from a holistic view has been established
- The methodological contribution includes the process to establish a factor structure and measurement model and to develop a parsimonious model from multiple risks
- A quantitative method of categorizing and measuring risk factors has been developed
- The initial identification and classification of risk variables were very qualitative and subjective. It was based on how predominant that variable is in the literature reviewed. Therefore, the variables that the study selected and focused on were based on the number of times it was found by different scholars to be a common problem that causes SMEs to fail. Table 5-2 shows the risk factor, its variables, the frequency and the classification of whether it is critical, important or insignificant risks. The statistical selection method eventually used in this study could be used as a basis to develop a theory of entrepreneurial risk selection and categorisation
- One of the theoretical contributions of this study is the framework and methodology drawn up to select, quantify and classify risk variables. The implication of this finding is that future research can use it as a framework and a theoretical foundation to develop a model from a quantitative perspective.
- A new valid and reliable measurement scale of ESE-Growth was developed.

- A new risk categorisation framework which expands the two risk categories of endogenous and exogenous risk factors to entrepreneur, firm, and environment. The new main risk categories are endogenous, entrepreneur and exogenous risk factors
- A quantitative method of identifying and classifying risks and the basis for labeling variables as high, important or insignificant risk has been established and provides more accurate results compared to Table 5-2.

Table 5-1: Theoretical qualitative risk classification

Risk Category/Factor	Focus	Frequency	Frequency >10 critical
Entrepreneur (49)	Entrepreneur characteristics (cognition, self-efficacy)	30	Critical
	Human capital (owner manager)	19	Critical
Endogenous (27)	Access to finance	17	Critical
	Planning and strategy	10	Critical
Exogenous (6)	Government policies and support	6	Important

5.4 Practical Contribution and Recommendations

In addition to theoretical contributions this study has made, there are practical considerations that could benefit various stakeholders in the entrepreneurship ecosystem which are policy makers, practitioners and researchers.

5.4.1 Practical Implications for Policy Makers

As discussed in chapter 1, after 20 years government interventions have not yielded the expected results when it comes to the development of small businesses (Finscope, 2010) thus the need for a new framework. SMMEs are unique and complicated entities and require special attention to ensure their success. The government is an important stakeholder in the entrepreneurship ecosystem. It is very critical in creating a policy framework that creates a conducive environment for SMMEs. The government needs to start looking at creating policies that encourage a holistic approach when supporting SMMEs (Rampersad, 2016).

Currently, the government has small business support organisations or agencies that work in silos. Each of these agencies focuses on addressing one of two factors that affect SMMEs, but these agencies are not linked to each other and are not working to complement each other so they can be able to support SMMEs holistically. This study recommends that government should start developing policies that will encourage integrating financial and non-financial support in support of entrepreneurs. Developmental and support programs should be a three-dimensional model integrating the environment, firm and entrepreneur.

When a small business is supported, the focus should be in addressing the three levels in the business. The mandate for government agencies who support SMMEs should be to impact all elements of entrepreneurship ecosystem

5.4.2 Practical Implications for Practitioners

New funding models specific to SMMEs are required (Smit & Watkins, 2012). Lack of funding is cited as one of the main reasons SMMEs fail. It is therefore recommended that funders, mentors and other support agencies start using this study's framework to develop new models that will be holistic and sensitive to SMMEs.

Currently, funders put much emphasis on business plans, financial projections and prior experience in the specific industry. Though these variables are important and needed in business, they are not the most powerful predictors of SME success and cannot be assessed in isolation. Therefore, funders should consider assessing variables that are significant predictors of success. The study confirmed availability of capital to grow, entrepreneurial self-efficacy on growth and risk perception as the most important variables to improve financial performance. Unfortunately, there was no statistical evidence to support business plans as key factors for success for this study sample as conventional wisdom suggests.

This study found that having confidence in your ability to understand and manage financials on a day-to-day basis influenced financial performance which suggests that funders should focus on that rather than nice written financial projections on a business plan.

Practitioners include incubators and other non-financial supporters of SMMEs. There are many organisations that support SMMEs, but, most of them have generic training programs irrespective of the level at which the SMME is operating. The integrated risk assessment framework could be used as a tool to assess the kind of training entrepreneurs need by identifying critical high impact risks.

Business and management skills are important. However, SMME support organisations need to start helping entrepreneurs to have confidence in themselves in performing entrepreneurial tasks and to be able to see problems but categorise them as opportunities. The self-efficacy and risk perception of the entrepreneur is very important because it informs the actions of the entrepreneur regarding growing the business. The relevant stakeholders might want to consider developing South African entrepreneurial training programmes that are unique to the SA environment.

Practitioners and or funders are recommended:

- To adopt a holistic approach when assessing SMMEs
- To integrate the individual, firm and environment level when providing support to SMMEs
- To understand that all elements in the ecosystem are interdependent and it will therefore not be beneficial to address one element in isolation at the expense of another element in the ecosystem
- That they put emphasis on financial capital available in the business followed by the individual's self-efficacy and risk perception when supporting SMMEs

5.4.3 Practical Implications for Researchers

The findings from this study are summarised in Table 5-3, and show the risk levels of each factor or variable. The correlation coefficients or the size of the correlation are used as a guide to classify risk levels. The factors that correlate with BS_F or BS_G strongly are classified as a critical risk. In practice, this means that if an entrepreneur or business does not have the variables classified as critical risks, then that business is at high risk.

Table 5-2: The strength of association of risk variables with SME Success

Strength	Type of risk	Correlations – BS_F	Correlations – BS_G
Strong	Critical risk	• Financial Capital • Entrepreneurial Self-Efficacy -Growth • Entrepreneurial Self-Efficacy -Finance	• Financial Capital • Entrepreneurial Self-Efficacy - Growth • Entrepreneurial Self-Efficacy - Finance • Entrepreneurial Self-Efficacy - Management
Moderate	Important risk	• Risk Perception • Entrepreneurial Self-Efficacy -Management • Cognitive style- Intuition	• Risk Perception • Human Capital • Cognitive style- Intuition
Weak	Insignificant risk	• Business Planning • Human Capital • Cognitive style- Planning	• Business Planning • Cognitive style- Planning

- A lack or absence of ESE_F, ESE_G, and FC in a business or the owner exposes the business to very high risk that could cause the company to close (Critical risk)
- A lack or absence of RP, ESE_M, and CS_I expose the business to risk of failure but not as critical as the above which falls under critical risks (Important risk)
- A lack or absence of BP, HC, CS_I expose the business to risk of failure but not as critical as the above which falls under critical risks (Insignificant risk)

- Funders should assess all the risk variables as per the above table to determine whether to fund or not to fund a business. Assessing these will help funders have a view on the business's likelihood of success
- Incubators and other agencies that provide training for entrepreneurs and help them develop their small businesses should use the above table to decide on the type of training to offer the entrepreneur. The above table should start influencing the training agenda and the focus area for development so that it does not only focus on business skills
- The size of the relationships tells you how important that variable is for that specific business to succeed. This could be used as stage one and those companies that pass-through stage one can then move to stage 2 for thorough investigation
- The results are slightly different when measuring financial performance versus growth, but the focus in this study has been on BS_F

Table 5-3: The effect of risk variables on BS_F

Impact/ Effect	Type of risk	Effect – BS_F
High impact	Critical risk	• Financial Capital • Entrepreneurial Self-Efficacy -Growth
Medium impact	Important risk	• Risk Perception
Low impact	Insignificant risk	• Business Planning • Human Capital • Cognitive style- Planning

- If the business does not have financial resources to operate and grow the business, that business will fail. The financial resources needed for an SME to succeed are enough start-up capital, working capital and growth capital
- If the entrepreneur does not have the confidence in his ability to influence and regulate situations and events that affect the business, then that business will fail. The entrepreneur is responsible for managing all other variables that put the business at risk.

- If the business does not have BP, HC, and, CS_P that business might still survive, but it will be working under very trying circumstances.

Besides the direct contributions of the study discussed above, there are other benefits that the SMME sector will gain if the findings are implemented, and if more research was done to expand the knowledge in this field. To mention but a few of the general indirect contributions from this study, is a decrease in the unemployment rate, economic growth, poverty alleviation, decrease in the failure rate, improved TEA, reduction in bad debt, improved funding approval rate and overall growth in the SMME sector. All these could be realised with the assistance of an accurate integrated risk assessment model that is context specific.

5.5 Limitations of the Study

Though this study makes significant theoretical and practical contributions to the South African small business literature, it has some limitations as mentioned in previous chapters.

- The sample was dominated by developed economies or provinces, namely, Gauteng and Western Cape which might pose a challenge when generalizing to underdeveloped provinces like Eastern Cape and Limpopo.
- This study omits many risk variables that have the potential to contribute significantly to the predictive capacity of the SME success model. Therefore, this limits the study to present this as a full predictive or risk assessment model. It has to be used as a basic framework to develop a full model further.
- The sample frame produced a sample that was dominated educated entrepreneurs (post graduates) and white people. This could bias the findings, and thus generalization beyond this sample has to be done with caution

- This was a cross-sectional study and interpretation of the findings (effects and relationships) cannot infer causality with an acceptable level of confidence.
- The data was collected using the same instrument and same respondents for both independent and dependent variables. Though tests were done to confirm that there is no issue of common method and response bias, results still need to be interpreted carefully

5.6 Suggestions for Future Research

Since this research was a basic study and a pioneering one in the South African context, taking an integrated, multidimensional, interdisciplinary approach, the findings can be used as a basis to broaden the scope and develop a more holistic framework that captures the full complexity and dynamics of the entrepreneurship ecosystem. It will be interesting and beneficial if future research could consider the following:

- The sample of 286 respondents is acceptable according to entrepreneurship literature, a ratio of 20:1 but still relatively smaller than the 300 recommended by some scholars for excellent results. It would be beneficial to repeat the study with a larger sample size of 500 or more
- The sample was dominated by developed economies or provinces, namely, Gauteng and Western Cape. Repeating the research with a sample from underdeveloped provinces like Eastern Cape and Limpopo will provide some insights on whether the factors' levels of risk will change or follow the same sequence in terms of strength
- The study findings showed that businesses that are owned by black entrepreneurs perform worse than businesses owned by white entrepreneurs on the financial performance scale. It would be interesting to do a comparative study and see if the difference is significant and supported in all provinces across time.

- Due to the time frames and scope of a Ph.D. thesis, a few risk variables had to be selected from each risk category and this excluded some of the variables that have a significant relationship with financial performance. If the investigation can be broadened and employ more predictors, a fuller model can be produced which will be more beneficial than what the researcher could achieve in this study
- Looking at the South African demographics, it will be beneficial for future research to repeat the study focusing on entrepreneurs with no access to the internet, low levels of computer literacy and their businesses operate in very rural areas which are expected to be mainly black business owners
- This was a cross-sectional study and researchers can consider doing a longitudinal study over three years or more to capture the performance construct accurately
- The study population included only entrepreneurs, it will be interesting to have policy makers and other stakeholders complete a similar questionnaire based on their perceptions and compare the findings with findings from entrepreneurs
- The exogenous risk factor only assessed the risk perception of entrepreneurs regarding their environment (government policy, social and cultural issues and conducive growth environment). It will be beneficial to policy makers if the environmental factors could be added to the model in addition to the risk perception variable.
- Future research can consider repeating the study and examining other dimensions of human capital rather than focusing on business training and education only. This could further investigate if there is any difference that exists between human capital output versus human capital input in their effect on financial performance.
- The study measured financial performance as a success indicator, but there are other performance or success indicators. Researchers can consider evaluating the same risk variables on a growth scale rather than financial performance scale.
- Qualitative research should be conducted to get deeper insights of the current risk assessment models, currently used in South Africa

- Regression was used as the main statistical technique with its limitations. However repeating the study using structural equation model with a bigger sample size could enable the researcher to capture the complexity of the model and examine multiple direct and indirect relationships at the same time. SEM is excellent in handling complex models with multiple IVs and DVs, analysis of mediation and moderation effects in one model
- Future research should test the mediation effect of risk perception and self-efficacy with other predictor variables on SME success

5.7 Conclusions

This study provides empirical evidence that supports existing theories in current literature about the importance of taking a holistic approach by integrating the environment, entrepreneur and firm risk variables in entrepreneurship theory. The study developed a framework that was interdisciplinary, multidimensional and included macro and micro elements thus capturing the dual and complex nature of entrepreneurship.

The objective of this study was to investigate the relationship and effect of the three risk factors (environment, firm and entrepreneur) in the success of SA SMEs and develop an integrated risk assessment model framework that can be used to assess the likelihood of success and the risk levels of SMEs.

The problem was multifaceted, the high failure rate of SMMEs, an SMME sector that is stagnant and a failure of risk assessment models to accurately predict the likelihood of success of an SME. In addressing the problem of lack of models specifically designed for SA SMEs, the study started by determining the type of relationships that exist between the risk variables and SME success, then followed by quantifying the effect of each risk variable on SME success and subsequently developing a framework that can quantitatively and holistically assess the risk of SMEs.

Drawing from complex theory, entrepreneurial ecosystem, system perspectives, GEM framework model and many other studies that advocate for an interdisciplinary, multidimensional, holistic perspective, an integrated model framework was developed. The integration of entrepreneur, firm and environment risk variables enables the study to capture the dynamics of entrepreneurship which captured both macro and micro economic levels. The research contributes to the South African SMMEs literature, especially the growing body of knowledge that advocates for the holistic ecosystem approach.

Data were collected using self-administered online surveys, and 286 usable responses were received. Correlational analysis was used to analyse the relationships that exist between the various risk variables and business financial performance. This captured the size, strength, direction and significance of the association. Forward selection method was used to identify significant predictors of SME financial performance.

Moreover, hierarchical multiple regression was used to determine the unique contribution of each factor on SME success. Lastly, mediation analysis was conducted to determine indirect relationships between the predictor variables and the outcome variable. The analysis took a holistic, integrated approach instead of analysis of each risk factor in isolation. It was all integrated to reflect the systemic nature of entrepreneurship.

The results showed that financial capital followed by entrepreneurial self-efficacy and lastly risk perception are the significant predictors of SME success (financial performance), explaining 46% of the variability is SME success. The results further showed that RP, FC, ESE and CS_I are all significantly associated with financial performance. However, CS_I, ESE_M, ESE_F were not significant predictors of financial performance even though they are positively related to it in a significant way. FC emerged as a significant mediator of the relationship between ESE_F and ESE_G with financial performance. Though most of the results were consistent with extant literature, they were, however, few that gave mixed results, for example, the insignificant correlation and effect of HC, BP and CS_P to BS_F. The key findings from the results are summarized below:

5.7.1 Summary of the Key Findings

From the results, this section summarizes the key findings

- To increase the likelihood of success of an SME, it must first have financial resources to develop and grow the business, and secondly, the entrepreneur must have entrepreneurial self-efficacy which means he should be confident in his skills to run and grow the business and lastly the entrepreneur's perception of risk should be low
- An integrated model predicts SME success and assess risk better than isolated individual factor models. This is consistent with Baum (2001)'s findings, and, it means that SME success cannot be accurately explained from a single perspective
- The findings show that SME success (financial performance) improves or increases when:
  [1] Entrepreneurs perceive government policies, the environment in general, social and cultural conditions conducive enough for business growth
  [2] Entrepreneurs are satisfied with the capital available for business development, and, they use the capital to grow
  [3] Entrepreneurs have high levels of entrepreneurial self-efficacy regarding their ability and skills in the management of all aspects of the business; in understanding and managing financials and growing and managing risks that hinder the growth of the business.
  [4] Entrepreneurs with high preference for an intuitive cognitive style also improve the business performance significantly by being creative, being motivated by on-going innovation, always look for creative solutions and always push boundaries
  [5] The overarching finding is that the effect of the above-stated conditions or findings improves the financial performance of the SME more when integrated into one model. Success happens because of a combination of capacity (individual), context (firm) and conducive environment.

- Conventionally business success is described based on financial performance indicators (Wiklund, 2006). SME success was measured with two performance indicators, financial performance and growth. The findings show that financial performance was a better success measure than growth for this sample. The growth indicator violated the normality assumption and was used only to test the relationship with the other risk factors.
- The results show that BP, HC and CS_ P are all non-significant when measured on the financial performance scale. However, only BP and CS_P are also non-significant on the growth scale.
- There was not enough evidence to support the hypothesis that human capital, business planning and cognitive style-planning significantly improve the financial performance of the SME.

5.8 Chapter Summary

The purpose of this study was to develop an integrated risk assessment model framework for SA SMEs, which is based on endogenous (firm and entrepreneur) and exogenous (environment) risk factors that are assumed to cause their failure.

The contribution of the study is theoretical, methodological and practical. The integrated framework that has been developed, the measurement model that has been established, the factor structure that has been proposed, and the relationship and effect of various risk variables to SME success that has been quantified, all contribute substantially to the entrepreneurship studies that advocate for the integrated, interdisciplinary, holistic and multidimensional approach. The study's findings will add value to the understanding of the South African entrepreneurial ecosystem and framework conditions as to how all the elements in the ecosystem affect each other.

This was a basic study, pioneering research in the South African context taking the holistic, systematic view. This is but just a small piece of what makes the entrepreneurship ecosystem work, and, as suggestions for future research has been made, the researcher hopes that researchers in the field can advance this approach in a drive to find the ideal risk assessment model for SMMEs in South Africa that can be broad and all encompassing.

In conclusion, the study has responded to this assertion, "Banks also realize that SMEs are a distinct kind of client with specific needs and peculiarities that require risk-assessment tools and methodologies specifically developed for them" (Altman et al., 2010, p. 2). Moreover, the researcher hopes that more scholars will attend to this call taking a holistic ecosystem approach.

Since no single model can be able to capture all the diversity and complexity of entrepreneurship, but like any other model is a simplistic abstraction from a very complicated reality which requires further research to capture as much as possible the complex nature of entrepreneurship.

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APPENDIX A: RESEARCH INSTRUMENT

A1: Questionnaire Cover Letter

To Small Business Owners

Dear Sir/Madam

I am a student at Wits Business School enrolled for a PhD degree in **Entrepreneurship**. I would like to request you to share your experiences as a small business owner in South Africa. This will form part of my PhD research project titled: **Endogenous and Exogenous Risk Factors in the success of Small and Medium Enterprises in South Africa.** The objective of this study is to develop an integrated risk assessment model that can be used to assess the likelihood of success of small businesses in South Africa. This kind of a risk model will go a long way in contributing towards reducing SME failure rate, high bad debt and low funding approval rate. If you are willing to participate you can click on the link below which will take you to the questionnaire.

https://wits.eu.qualtrics.com/SE/?SID=SV_b4agL6TmFY0z4HP

It should take approximately 10 - 15 minutes to complete. All the data gathered from this survey will be treated as anonymous, no specific personal or company data will be disclosed but all information will be disclosed as aggregate figures. If you are willing and comfortable to participate and contribute, it will be appreciated if you could complete the questionnaire no later than **09 October 2015**

Please feel free to contact myself or my supervisor if you have any concerns or questions

Jabulile Galawe (Student)	076 477-2788	jgalawe@gmail.com
Prof Boris Urban (Supervisor)	011 717-3762	Boris.Urban@wits.ac.za

Thanking you in anticipation for your assistance

Yours sincerely

Jabulile Galawe (PhD Student)

Wits Business School

University of Witwatersrand

A2: Research Instrument

RISK FACTOR	CONSTRUCT	CODE	MEASURE	VARIABLE	AUTHOR SOURCES
SME SUCCESS	Growth	BS01	Annual Turnover/ Revenue	Continuous (DV)	(Wiklund et al., 2009)
		BS02	Total Gross Asset Value		
		BS03	Gross Profit		
		BS04	Number of Employees		
		BS05	Number of Clients		
		BS06	Office space		
	Financial Performance	BS07	Return on investment	Ordinal (DV)	(Brockman et al., 2012)
		BS08	Return on equity		
		BS09	Net profit margin		
		BS10	Return on assets		
		BS11	Sales growth		
		BS12	Market share growth		
HUMAN CAPITAL	Business Experience	HC03	Number of years in business	Continuous (IV)	(Ruzzier, AntonciC, Hisrich, & Konecnik, 2007)
		HC04	Number of years running this business		
		HC05	Current number of operating businesses		
		HC06	Businesses that have closed down prior to the current one		
	Work Experience	HC07	I was in management position	Ordinal (IV)	
		HC08	I was doing similar work as my current business		
		HC09	My former work is not related to my current business at all **(Reversed)**		
		HC10	I apply some of my previous knowledge in my business		
		HC11	I was unemployed **(Reversed)**		

	Business Training	HC12	Technical/ Operational	Ordinal (IV)	
		HC13	Business management		
		HC14	Financial management		
		HC15	Business planning and strategy		
		HC16	New venture creation		
		HC17	I had close relatives who owned businesses		
		HC18	I use to help in their businesses before starting mine		
E-SELF EFFICACY	E-Self Efficacy	ESE01	Finances	Ordinal (IV)	(Chen et al., 1998)
		ESE02	People		
		ESE03	Operations		
		ESE04	Technical		
		ESE05	Business skills and knowledge		
		ESE06	Business growth		
		ESE07	Estimate the amount of growth and working capital necessary to grow my business	Ordinal (IV)	
		ESE08	Read and understand financial statements		
		ESE09	Organize and maintain financial records		
		ESE10	Plan and strategize for my business		
		ESE11	Deal effectively with day to day problems		
		ESE12	Manage business growth		
		ESE13	Manage challenges imposed by external forces		
		ESE14	Read and understand industry factors that might hinder business growth		
		ESE15	I am confident I have the skills and knowledge to grow beyond my current status		
COGNITIVE STYLE	Cognitive Style-Knowing	CS01	I study each problem until I understand the underlying logic	Ordinal (IV)	
		CS02	I like to analyze problems		
		CS03	I want to have a full understanding of all problems		
	Cognitive Style-Planning	CS04	Developing a clear plan is very important to me	Ordinal (IV)	

		CS05	I always want to know what should be done and when		(Cools & Van den Broeck, 2007) (Acedo & Florin, 2006)
		CS06	I like detailed action plans		
		CS07	I prefer clear structures to do my job		
		CS08	I prefer well-prepared meetings with a clear agenda and strict time management		
		CS09	I make definite engagements and I follow thoroughly		
		CS10	A good task is a well-prepared task		
	Cognitive Style-Creative	CS11	I like to contribute to innovative ideas	Ordinal (IV)	(Urban, 2012)
		CS12	I prefer to look for creative solutions		
		CS13	I am motivated by ongoing innovation		
		CS14	I like much variety in my life		
		CS15	New ideas attract me more than existing solutions		
		CS16	I try to avoid routine		
		CS17	I like to push boundaries		
		CS18	Most of my decisions are based on intuition		
BUSINESS PLANNING	Financial and strategic Planning	BP05	I have a written business plan	Ordinal (IV)	Adapted from (Perry, 2001) (Brinckmann et al., 2010)
		BP01	I developed the business plan myself		
		BP02	I use my business plan for day to day running of the business		
		BP03	I have accounting system/software		
		BP04	I record all my business income & expense on my accounting system?		
		BP06	I am running and managing my business full-time		
FINANCIAL CAPITAL	Funding	FC01	I applied for funding but never received from any of the institutions **(Reverse)**	Ordinal (IV)	
		FC02	I have received funding from family and friends		
		FC03	I have invested my own cash in the business		
		FC04	I do not have enough cash for day to day operations and orders **(Reverse)**		
		FC05	I have never applied for funding **(Reverse)**		

		FC06	I do not have enough cash to grow my business **(Reverse)**		
		FC07	My business has received funding before		
	Capital	FC08	Start-Up Capital	Ordinal (IV)	
		FC09	Working Capital		
		FC10	Growth Capital		
ENVIRONMENT	Risk Perception	RP06	SA is a risky environment to grow an SME **(Reversed)**	Ordinal (IV)	(Acedo & Florin, 2006) (Podoynitsyna et al., 2012) (Ruzzier et al., 2007)
		RP07	SA has a lot of opportunities for SMEs to flourish		
		RP08	As a small business owner, you are more likely to fail in SA than in any other country in the world **(Reversed)**		
		RP09	Growth is a positive thing for my business in SA		
		RP10	My firm has a higher probability of success in South Africa		
		RP11	Current government policies create a conducive environment for SMEs to grow		
		RP12	SA social and cultural condition promote SME growth		

A3: Ethics Clearance Certificate

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R11/49 Galawe

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER H14/04/03**
PROJECT TITLE	Endogenous and exogenous risk factors in the success of South African small med ium enterprises
INVESTIGATOR(S)	Ms J Galawe
SCHOOL/DEPARTMENT	Wits Business School
DATE CONSIDERED	25 April 2014
DECISION OF THE COMMITTEE	Approved Unconditionally
EXPIRY DATE	27/05/2015

DATE 28/05/2014 **CHAIRPERSON** _____ (Professor P Mtani)

cc. Supervisor: Prof B Urban

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10000, 10th Floor, Senate House, University.

I/We fully understand the conditions under which I am/we are authorized to carry out the above mentioned 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

APPENDIX B: ADDITIONAL RESULTS

Table 6.1: Descriptive Statistics

	Counts		Centrality		Spread			
	N	Missing	Mean	Median	SD	Range	Min	Max
BS_F	285	0	2.86	3.00	0.97	4.00	1.00	5.00
RP	285	0	2.59	2.67	0.87	4.00	1.00	5.00
BP	285	0	3.30	3.67	1.08	4.00	1.00	5.00
FC	285	0	2.50	2.67	1.08	4.00	1.00	5.00
HC	285	0	3.13	3.40	1.21	4.00	1.00	5.00
ESE_M	285	0	3.64	3.67	0.83	4.00	1.00	5.00
ESE_F	285	0	3.40	3.33	0.93	4.00	1.00	5.00
ESE_G	285	0	3.39	3.33	0.87	3.67	1.33	5.00
CS_I	285	0	4.31	4.33	0.58	3.00	2.00	5.00
CS_P	285	0	4.05	4.00	0.69	3.40	1.60	5.00
BS_G	285	0	1.95	1.83	0.78	4.00	1.00	5.00

N=number of observations, SD=Standard Deviation, IQR= Interquartile Range, Min=Minimum, Max=Maximum

BS_F=Business Success Financial Performance, RP=Risk Perception, BP=Business Planning, FC=Financial Capital, HC=Human Capital, ESE=Entrepreneurial Self Efficacy-Management, F-Finance, G-Growth, CS=Cognitive Style, I-Intuition, P-Planning, BS_G=Business Success-Growth

Table 6.1: Missing Values Analysis

Univariate Statistics

			Std.	Missing		No. of Extremes[a]	
FACTOR	N	Mean	Deviation	Count	Percent	Low	High
BS_F	285	2.86	0.97	0	.0	0	0
RP	285	2.59	0.87	0	.0	0	6
BP	285	3.30	1.08	0	.0	27	0
FC	285	2.50	1.08	0	.0	0	10
HC	285	3.13	1.21	0	.0	0	0
ESE_M	285	3.64	0.83	0	.0	1	0
ESE_F	285	3.40	0.93	0	.0	0	0
ESE_G	285	3.39	0.87	0	.0	0	0
CS_I	285	4.31	0.58	0	.0	3	0
CS_P	285	4.05	0.69	0	.0	2	0
BS_G	285	1.95	0.78	0	.0	0	7

*a. Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).*

Figure 6.1: Tests for Outliers (Box and Whiskers Plots)

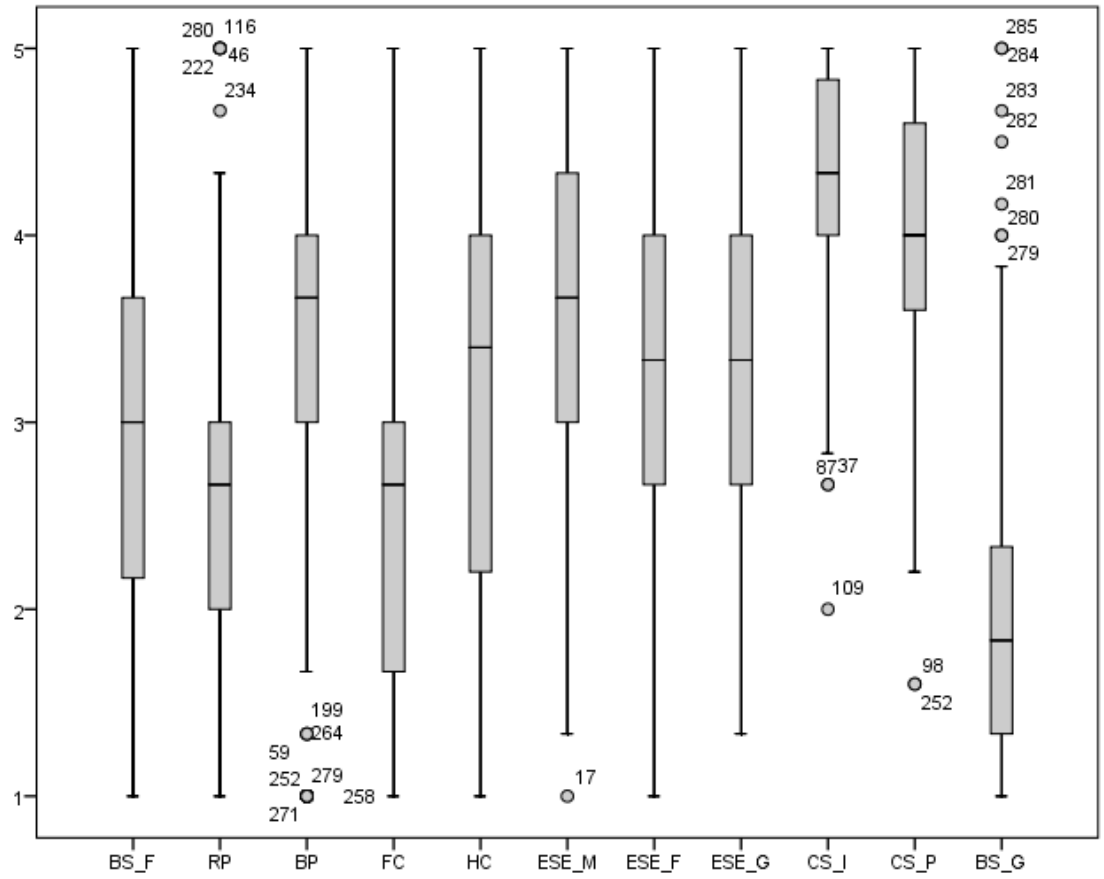


Table 6.2: Tukey's Hinges and Percentiles

FACTORS		Percentiles						
		5	10	25	50	75	90	95
Weighted Average	**BS_F**	1.00	1.43	2.08	3.00	3.67	4.00	4.50
	RP	1.10	1.33	2.00	2.67	3.00	3.67	4.00
	BP	1.00	1.67	2.83	3.67	4.00	4.67	5.00
	FC	1.00	1.00	1.67	2.67	3.00	4.00	4.23
	HC	1.00	1.00	2.20	3.40	4.00	4.68	5.00
	ESE_M	2.00	2.67	3.00	3.67	4.33	4.67	5.00
	ESE_F	1.77	2.00	2.67	3.33	4.00	4.67	5.00
	ESE_G	2.00	2.00	2.67	3.33	4.00	4.47	5.00
	CS_I	3.17	3.50	4.00	4.33	4.83	5.00	5.00
	CS_P	2.80	3.20	3.60	4.00	4.60	5.00	5.00
	BS_G	1.00	1.00	1.33	1.83	2.33	3.00	3.50
Tukey's Hinges	**BS_F**			2.17	3.00	3.67		
	RP			2.00	2.67	3.00		
	BP			3.00	3.67	4.00		

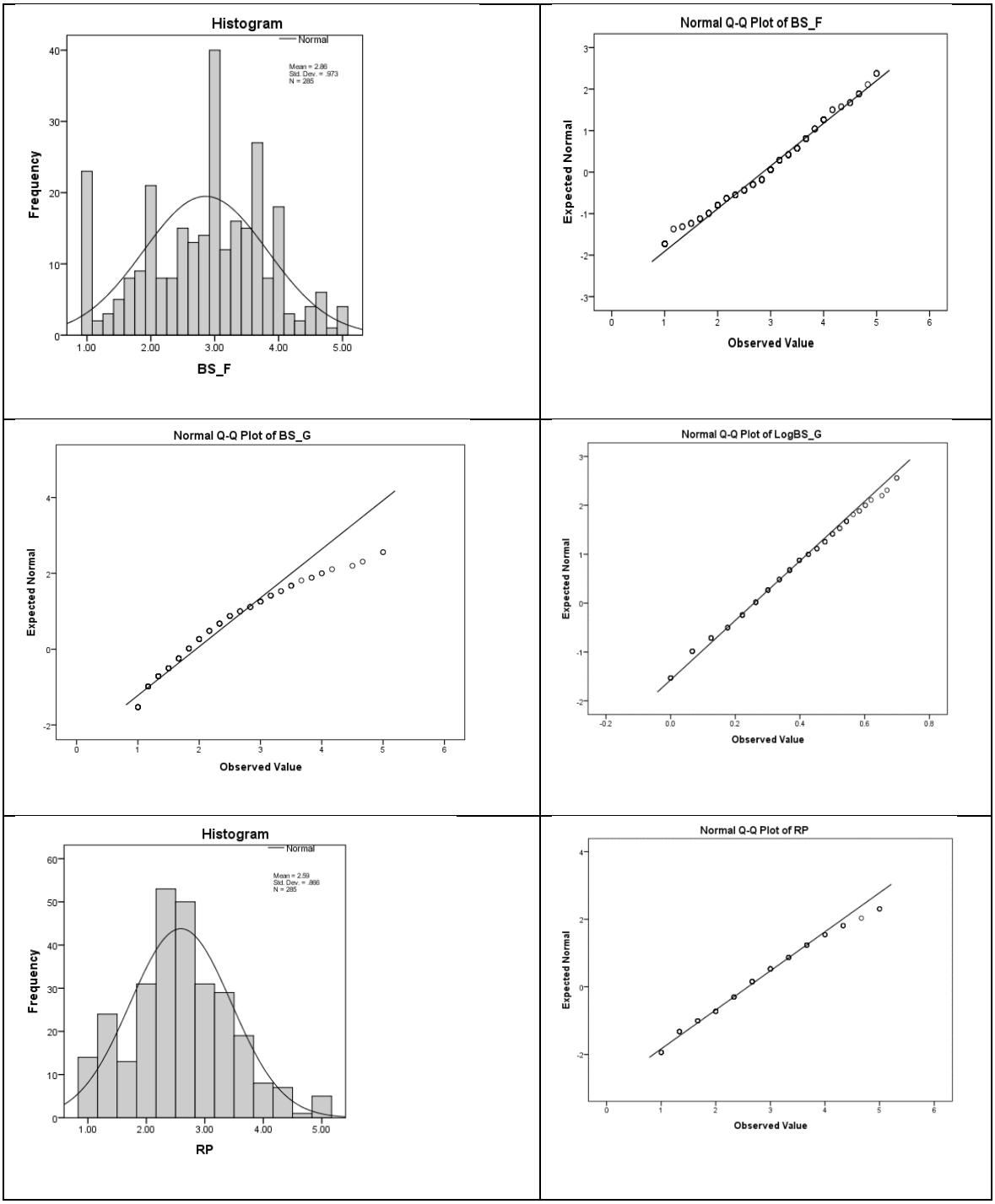
	FC			1.67	2.67	3.00		
	HC			2.20	3.40	4.00		
	ESE_M			3.00	3.67	4.33		
	ESE_F			2.67	3.33	4.00		
	ESE_G			2.67	3.33	4.00		
	CS_I			4.00	4.33	4.83		
	CS_P			3.60	4.00	4.60		
	BS_G			1.33	1.83	2.33		

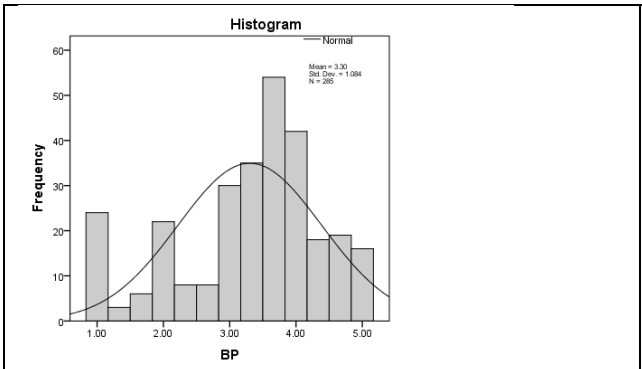
Table 6.3: Extreme Values with Outlier Bounds

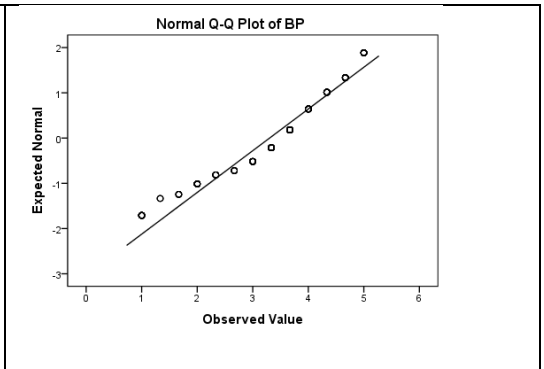
		Extreme Values			Outlier Bounds	
FACTOR	**Case No**	**Lowest**	**Case No**	**Highest**	**Lower**	**Upper**
	284	1.00	34	5.00		
	279	1.00	71	5.00		
BS_F	231	1.00	131	5.00	-1.13	6.97
	200	1.00	251	5.00		
	186	1.00[a]	261	4.83		
	279	1.00	32	5.00		
	272	1.00	61	5.00		
RP	258	1.00	62	5.00	-0.20	5.20
	236	1.00	228	5.00		
	227	1.00[a]	249	5.00		
	273	1.00	52	5.00		
	266	1.00	53	5.00		
BP	261	1.00	60	5.00	0.80	6.20
	260	1.00	61	5.00		
	236	1.00[a]	71	5.00[b]		
	285	1.00	49	5.00		
	275	1.00	60	5.00		
FC	272	1.00	61	5.00	-1.27	5.93
	263	1.00	67	5.00		
	259	1.00[a]	71	5.00[b]		
	282	1.00	17	5.00		
	275	1.00	27	5.00		
HC	271	1.00	33	5.00	-1.76	7.96
	260	1.00	71	5.00		
	248	1.00[a]	72	5.00[b]		
ESE_M	56	1.00	27	5.00	0.07	7.27

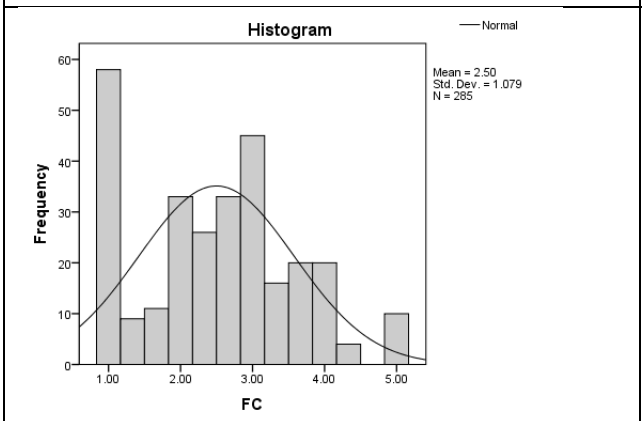
	26	1.33	36	5.00		
	207	1.67	50	5.00		
	263	2.00	71	5.00		
	213	2.00[c]	97	5.00[b]		
	263	1.00	17	5.00		
	206	1.00	27	5.00		
ESE_F	170	1.00	36	5.00	-0.27	6.93
	97	1.33	49	5.00		
	65	1.33[d]	60	5.00[b]		
	275	1.33	27	5.00		
	245	1.33	36	5.00		
ESE_G	56	1.33	40	5.00	-0.27	6.93
	32	1.33	61	5.00		
	266	1.67[e]	71	5.00[b]		
	42	2.00	2	5.00		
	241	2.67	8	5.00		
CS_I	224	2.67	12	5.00	2.17	6.67
	181	2.83	14	5.00		
	257	3.00[f]	17	5.00[b]		
	121	1.60	1	5.00		
	19	1.60	27	5.00		
CS_P	213	2.20	29	5.00	1.40	6.80
	152	2.20	34	5.00		
	144	2.20	43	5.00[b]		
	279	1.00	71	5.00		
	264	1.00	101	5.00		
BS_G	249	1.00	60	4.67	-0.87	4.53
	247	1.00	36	4.50		
	231	1.00[a]	223	4.17		

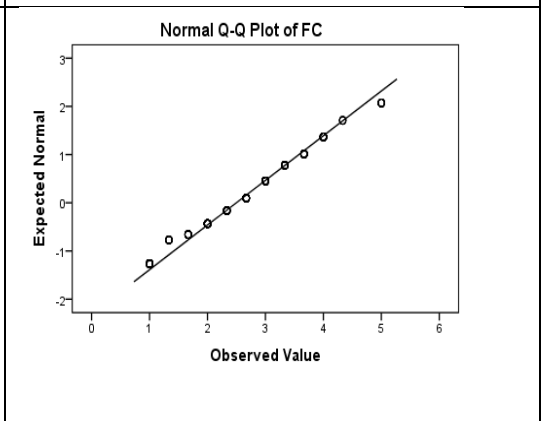
Figure 6.2: Histograms and Normal Q-Q Plots

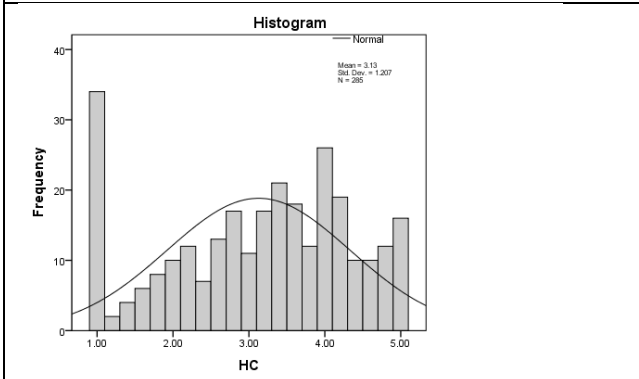


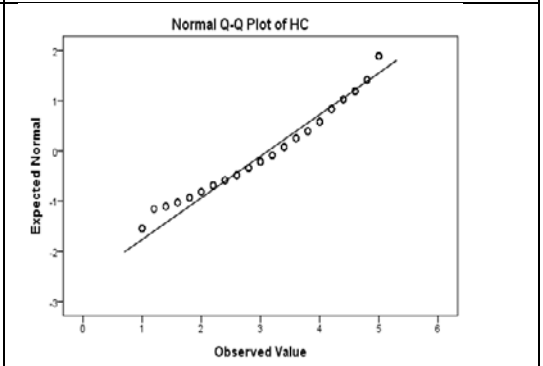

Histogram
Normal
Mean = 3.30
Std. Dev. = 1.084
N = 285
Frequency
BP

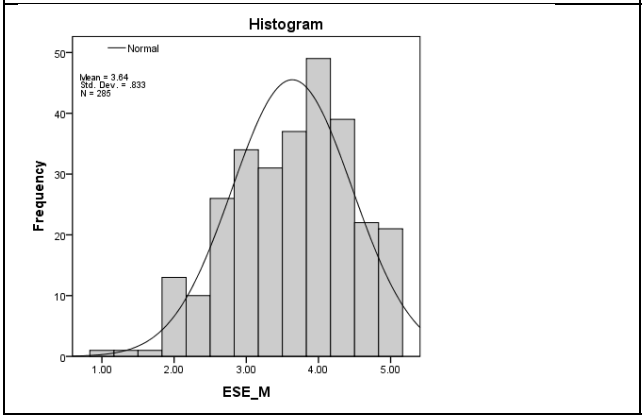

Normal Q-Q Plot of BP
Expected Normal
Observed Value

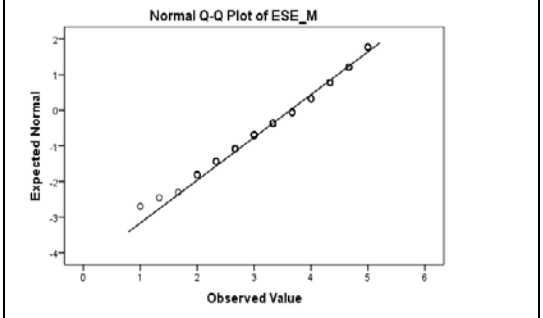

Histogram
Normal
Mean = 2.50
Std. Dev. = 1.079
N = 285
Frequency
FC

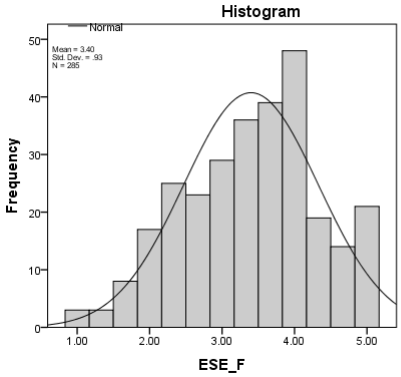

Normal Q-Q Plot of FC
Expected Normal
Observed Value

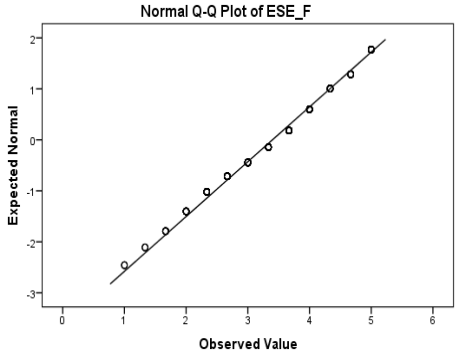

Histogram
Normal
Mean = 3.13
Std. Dev. = 1.207
N = 285
Frequency
HC

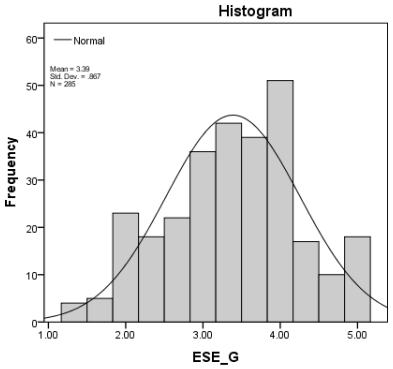

Normal Q-Q Plot of HC
Expected Normal
Observed Value

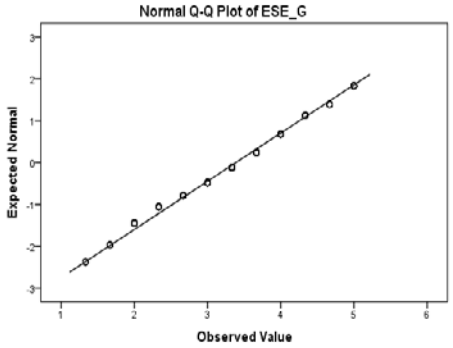

Histogram
Normal
Mean = 3.64
Std. Dev. = .833
N = 285
Frequency
ESE_M

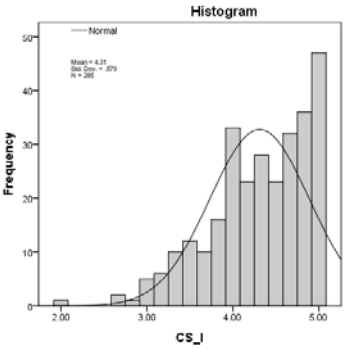

Normal Q-Q Plot of ESE_M
Expected Normal
Observed Value

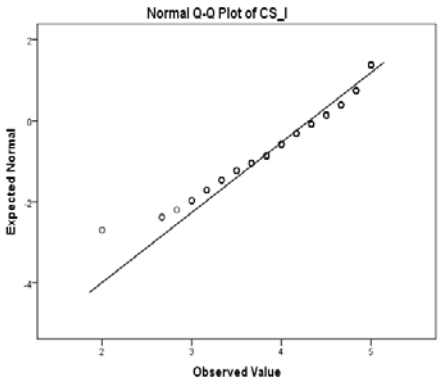

Histogram
Normal
Mean = 3.40
Std. Dev. = .93
N = 285
Frequency
ESE_F


Normal Q-Q Plot of ESE_F
Expected Normal
Observed Value


Histogram
Normal
Mean = 3.39
Std. Dev. = .867
N = 285
Frequency
ESE_G


Normal Q-Q Plot of ESE_G
Expected Normal
Observed Value


Histogram
Normal
Frequency
CS_I


Normal Q-Q Plot of CS_I
Expected Normal
Observed Value

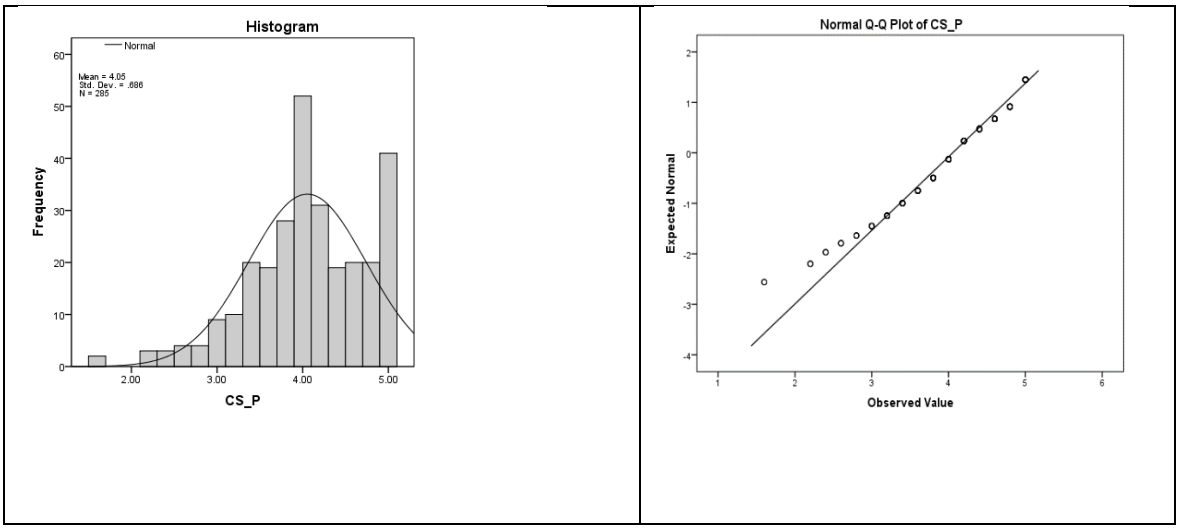


Table 6.4: Collinearity Diagnostics

Model		Eigenvalue	Condition Index	Variance Proportions									
				(Constant)	RP	BP	FC	HC	ESE_M	ESE_F	ESE_G	CS_I	CS_P
1	1	9.45	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	0.15	7.93	.00	.07	.05	.51	.04	.00	.00	.00	.00	.00
	3	0.11	9.37	.00	.16	.02	.09	.48	.00	.02	.00	.00	.02
	4	0.09	10.21	.00	.26	.10	.01	.25	.02	.04	.10	.00	.00
	5	0.07	11.56	.00	.12	.72	.15	.11	.02	.01	.00	.00	.00
	6	0.04	14.93	.01	.33	.00	.20	.01	.00	.47	.07	.05	.06
	7	0.04	15.66	.01	.01	.06	.00	.02	.06	.44	.49	.01	.05
	8	0.03	18.19	.00	.00	.03	.00	.09	.83	.00	.33	.00	.05
	9	0.02	24.00	.06	.01	.01	.03	.00	.06	.00	.00	.33	.76
	10	0.01	34.53	.91	.04	.00	.00	.00	.00	.02	.00	.61	.06

Table 6.5: BS_G Model Estimates Summary - CFA

BS_G Model			B	S.E.	C.R.	β	λ^2	P<0.001
BS02	<---	BS_G	0.76	0.05	15.49	0.76	0.58	***
BS03	<---	BS_G	0.84	0.05	17.22	0.82	0.66	***
BS04	<---	BS_G	0.56	0.05	10.63	0.62	0.38	***
BS05	<---	BS_G	0.86	0.05	17.20	0.81	0.66	***
HC13	<---	HC	1.62	0.16	9.98	0.94	0.88	***
HC14	<---	HC	1.50	0.15	9.82	0.90	0.80	***
HC15	<---	HC	1.50	0.15	9.77	0.89	0.78	***
CS12	<---	CS_I	1.01	0.07	13.96	0.78	0.60	***
CS13	<---	CS_I	1.22	0.08	15.99	0.90	0.81	***
CS14	<---	CS_I	0.87	0.10	9.14	0.54	0.29	***
CS15	<---	CS_I	0.74	0.10	7.14	0.43	0.19	***
CS06	<---	CS_P	1.34	0.12	11.68	0.78	0.61	***
CS07	<---	CS_P	1.18	0.11	10.88	0.71	0.51	***
CS08	<---	CS_P	0.99	0.11	8.87	0.64	0.41	***
FC09	<---	FC	1.18	0.08	15.45	0.94	0.89	***
BP02	<---	BP	0.72	0.07	11.03	0.65	0.42	***
ESE08	<---	ESE_F	1.19	0.10	11.76	0.85	0.72	***
ESE13	<---	ESE_G	1.17	0.11	11.17	0.77	0.59	***
RP11	<---	RP	1.95	0.30	6.43	0.92	0.84	***
ESE04	<---	ESE_M	1.12	0.14	7.94	0.51	0.26	***
BS01	<---	BS_G	1.00			0.89	0.79	
BS06	<---	BS_G	0.50	0.06	8.64	0.49	0.24	***
HC12	<---	HC	1.00			0.53	0.29	
HC16	<---	HC	0.87	0.11	8.27	0.53	0.28	***
CS11	<---	CS_I	1.00			0.80	0.64	
CS17	<---	CS_I	0.87	0.10	8.74	0.52	0.27	***
CS05	<---	CS_P	1.00			0.76	0.57	
CS10	<---	CS_P	0.73	0.08	8.83	0.58	0.33	***
FC08	<---	FC	1.00			0.76	0.58	
FC10	<---	FC	0.97	0.07	14.43	0.82	0.66	***
BP01	<---	BP	1.00			0.83	0.69	
BP05	<---	BP	1.07	0.08	13.49	0.87	0.76	***
ESE09	<---	ESE_F	1.25	0.11	11.76	0.85	0.72	***
ESE07	<---	ESE_F	1.00			0.67	0.45	
ESE12	<---	ESE_G	1.00			0.76	0.58	
ESE14	<---	ESE_G	1.09	0.10	10.98	0.74	0.55	***
RP06	<---	RP	1.00			0.46	0.21	
RP12	<---	RP	1.34	0.19	6.97	0.67	0.44	***
ESE03	<---	ESE_M	1.00			0.58	0.33	
ESE05	<---	ESE_M	1.73	0.21	8.18	0.89	0.80	***

Figure 6.3: BS_G Measurement Model- CFA

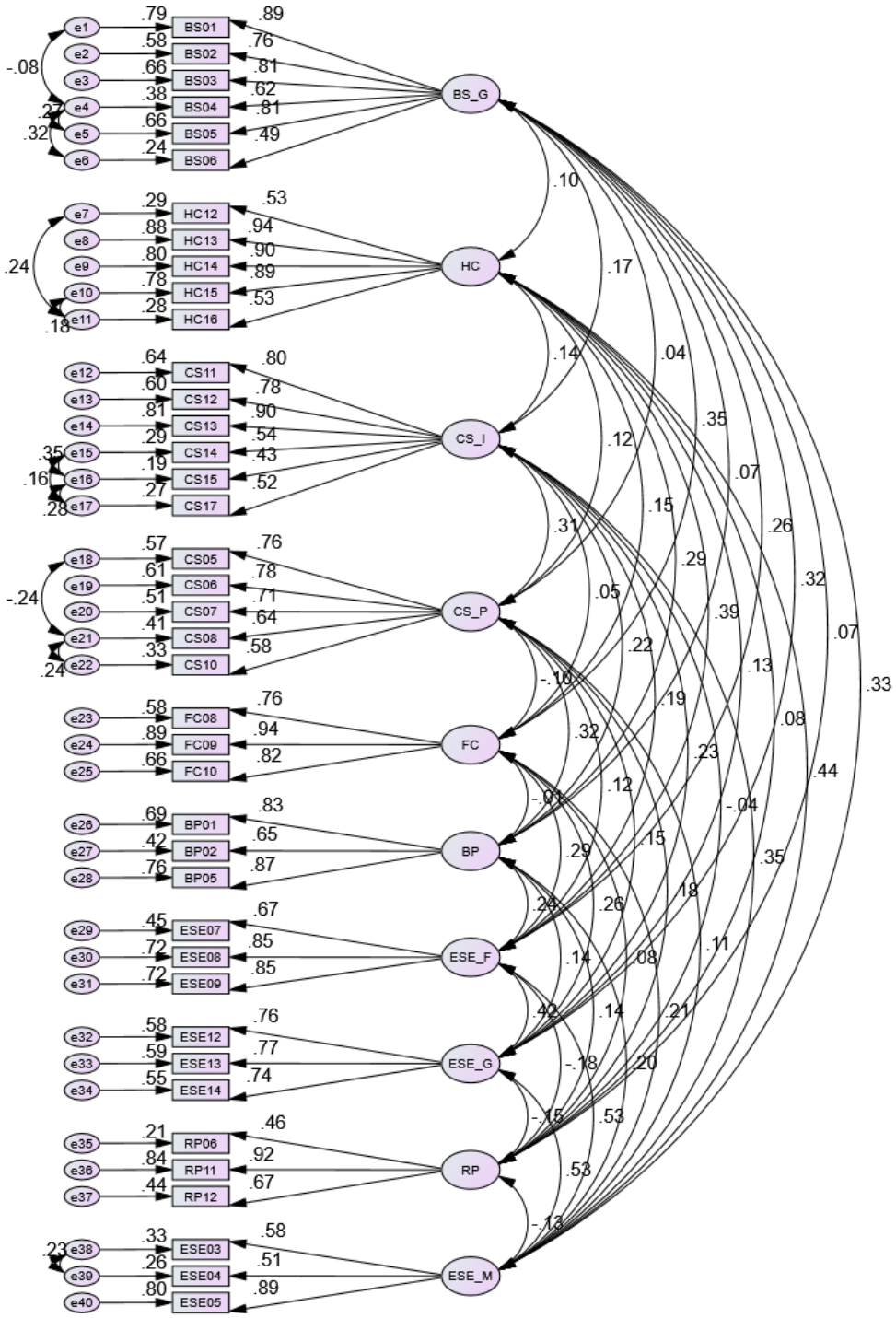
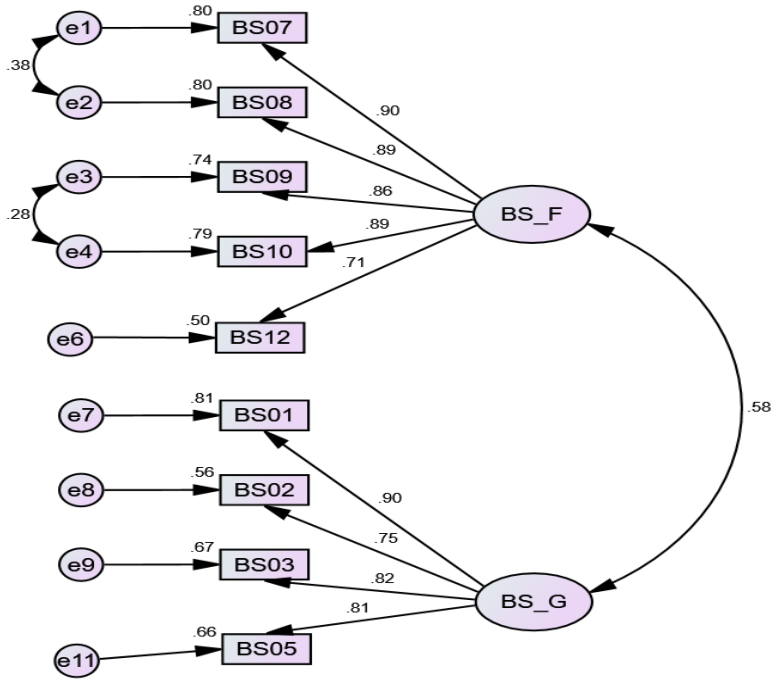
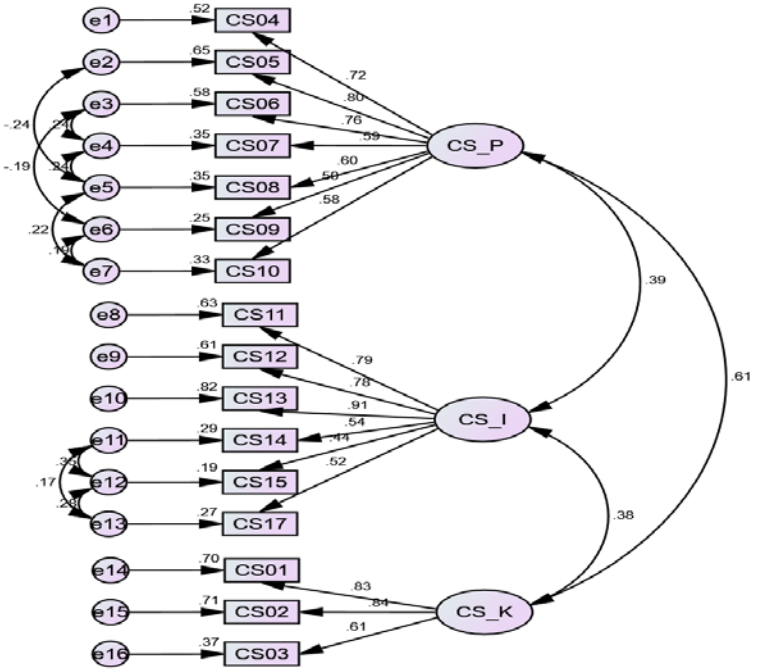


Figure 6.4: Factor Structure for Individual Constructs (CFA)

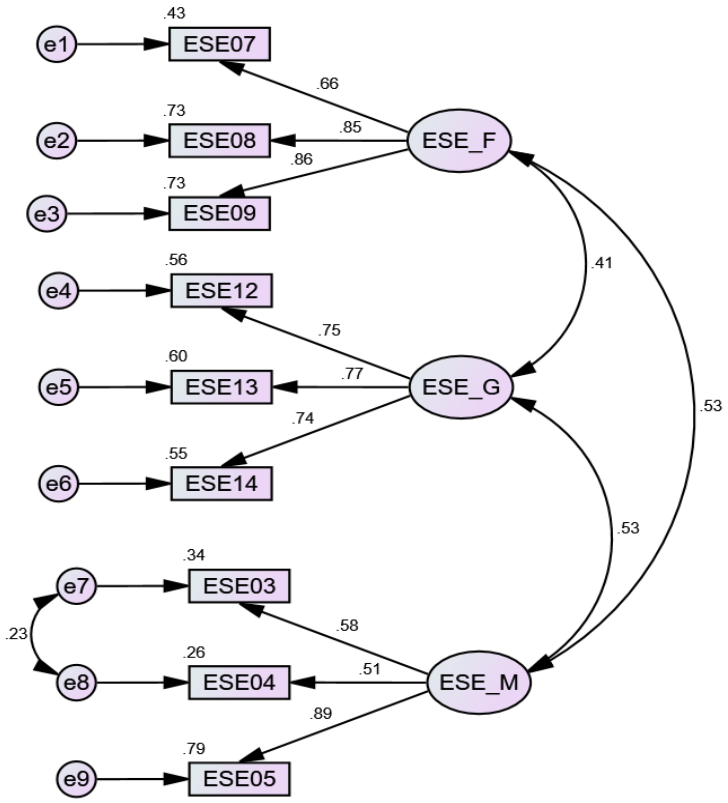
a) SME Success



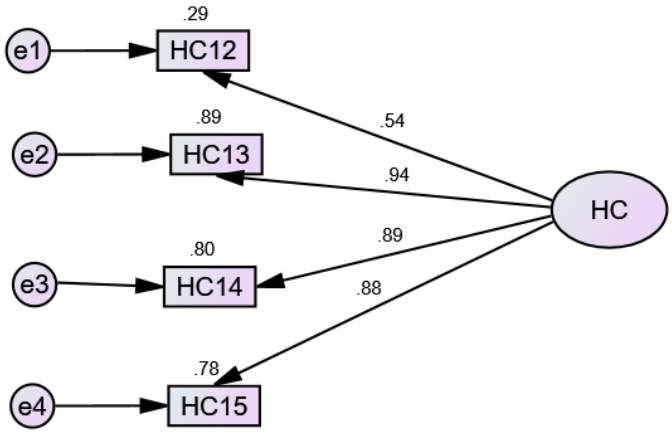
b) Cognitive Style



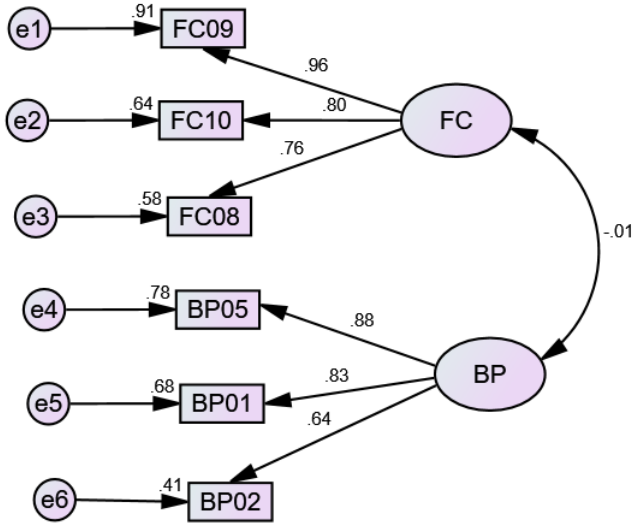
c) Entrepreneurial Self-Efficacy



d) Human Capital



e) The Firm (BP and FC)



f) Risk Perception

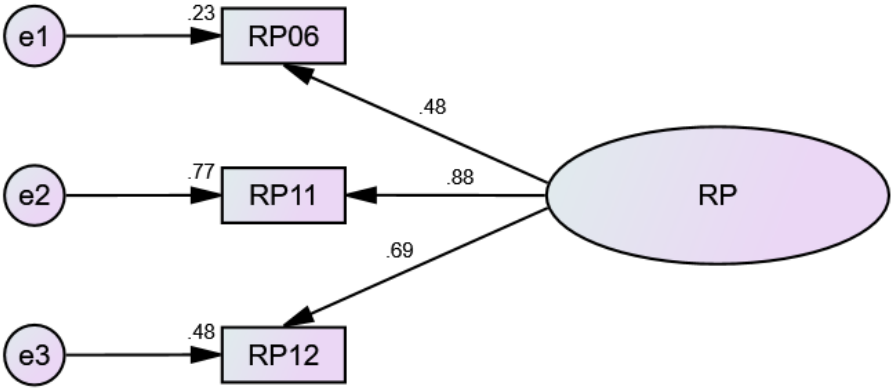


Table 6.6: Assessment of Normality in Amos

Variable	min	max	skew	c.r.	kurtosis	c.r.
ESE05	1	5	-0.43	-2.99	-0.69	-2.36
ESE04	1	5	-0.27	-1.87	-0.78	-2.70
ESE03	1	5	-0.38	-2.65	-0.28	-0.97
RP12	1	5	0.22	1.53	-0.94	-3.23
RP11	1	5	0.56	3.83	-0.74	-2.54
RP06	1	5	0.44	3.01	-0.98	-3.36
ESE14	1	5	-0.44	-3.02	-0.47	-1.61
ESE13	1	5	-0.20	-1.34	-0.80	-2.76
ESE12	1	5	-0.14	-0.95	-0.69	-2.38
FC10	1	5	0.50	3.48	-0.65	-2.23
FC09	1	5	0.18	1.27	-1.03	-3.55
FC08	1	5	0.28	1.92	-0.91	-3.15
ESE09	1	5	-0.42	-2.87	-0.59	-2.02
ESE08	1	5	-0.48	-3.34	-0.37	-1.26
ESE07	1	5	0.03	0.22	-0.86	-2.96
BP05	1	5	-0.59	-4.04	-0.84	-2.91
BP02	1	5	0.03	0.18	-0.87	-2.99
BP01	1	5	-0.79	-5.41	-0.51	-1.76
CS10	1	5	-1.08	-7.46	2.16	7.45
CS08	1	5	-0.88	-6.03	0.37	1.26
CS07	1	5	-0.59	-4.05	-0.37	-1.28
CS06	1	5	-0.90	-6.20	0.21	0.73
CS05	2	5	-0.82	-5.62	0.39	1.34
CS17	1	5	-1.07	-7.35	1.10	3.78
CS15	1	5	-0.58	-3.98	-0.43	-1.47
CS14	1	5	-0.98	-6.76	0.46	1.58
CS13	2	5	-1.10	-7.58	0.67	2.32
CS12	2	5	-0.96	-6.63	0.47	1.63
CS11	2	5	-1.24	-8.53	0.93	3.20
HC16	1	5	0.53	3.66	-1.09	-3.77
HC15	1	5	-0.52	-3.58	-1.12	-3.87
HC14	1	5	-0.39	-2.68	-1.18	-4.06
HC13	1	5	-0.63	-4.36	-1.04	-3.59
HC12	1	5	-0.17	-1.20	-1.59	-5.48
BS12	1	5	0.00	-0.03	-0.67	-2.32
BS11	1	5	-0.15	-1.00	-0.94	-3.24
BS10	1	5	-0.12	-0.81	-0.50	-1.71
BS09	1	5	-0.01	-0.09	-0.92	-3.16
BS08	1	5	-0.08	-0.58	-0.74	-2.54
BS07	1	5	-0.06	-0.41	-0.82	-2.83

Table 6.7: Classification of Small Businesses

Sector or subsector in accordance with the standard Industrial Classification	Size of class	The total fulltime equivalent of paid employees	Total turnover	Total gross asset value (fixed property excluded)
Agriculture	Medium	100	R5m	R5m
	Small	50	R3m	R3m
	Very Small	10	R0.50m	R0.50m
	Micro	5	R0.20m	R0.10m
Mining and Quarrying	Medium	200	R39m	R23m
	Small	50	R10m	R6m
	Very Small	20	R4m	R2m
	Micro	5	R0.20m	R0.10m
Manufacturing	Medium	200	R51m	R19m
	Small	50	R13m	R5m
	Very Small	20	R5m	R2m
	Micro	5	R0.20m	R0.10m
Electricity, Gas and Water	Medium	200	R51m	R19m
	Small	50	R13m	R5m
	Very Small	20	R5.10m	R1.90m
	Micro	5	R0.20m	R0.10m
Construction	Medium	200	R26m	R5m
	Small	50	R6m	R1m
	Very Small	20	R3m	R0.50m
	Micro	5	R0.20m	R0.10m
Retail and Motor Trade and Repair Services	Medium	200	R39m	R6m
	Small	50	R19m	R3m
	Very Small	20	R4m	R0.60m
	Micro	5	R0.20m	R0.10m
Wholesale Trade, Commercial Agents and Allied Services	Medium	200	R64m	R10m
	Small	50	R32m	R5m
	Very Small	20	R6m	R0.60m
	Micro	5	R0.20m	R0.10m
Catering, Accommodation and other Trade	Medium	200	R13m	R3m
	Small	50	R6m	R1m
	Very Small	20	R5.10m	R1.90m
	Micro	5	R0.20m	R0.10m
Transport, Storage and communications	Medium	200	R26m	R6m
	Small	50	R13m	R3m
	Very Small	20	R3m	R0.60m
	Micro	5	R0.20m	R0.10m
Finance and Business Services	Medium	200	R26m	R5m

	Small	50	R13m	R3m
	Very Small	20	R3m	R0.50m
	Micro	5	R0.20m	R0.10m
Community, Social and Personal Services	Medium	200	R13m	R6m
	Small	50	R6m	R3m
	Very Small	20	R1m	R0.60m
	Micro	5	R0.20m	R0.10m

Table 6.8: Other Regression Results

ANOVA[a] - The Environment

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.678	9	2.631	2.953	.002[b]
	Residual	244.980	275	.891		
	Total	268.657	284			
2	Regression	23.677	8	2.960	3.334	.001[c]
	Residual	244.980	276	.888		
	Total	268.657	284			
3	Regression	23.540	7	3.363	3.800	.001[d]
	Residual	245.118	277	.885		
	Total	268.657	284			
4	Regression	23.414	6	3.902	4.424	.000[e]
	Residual	245.243	278	.882		
	Total	268.657	284			
5	Regression	23.020	5	4.604	5.229	.000[f]
	Residual	245.638	279	.880		
	Total	268.657	284			
6	Regression	21.565	4	5.391	6.109	.000[g]
	Residual	247.093	280	.882		
	Total	268.657	284			
7	Regression	20.399	3	6.800	7.696	.000[h]
	Residual	248.259	281	.883		
	Total	268.657	284			
8	Regression	19.178	2	9.589	10.839	.000[i]
	Residual	249.479	282	.885		
	Total	268.657	284			

a. Dependent Variable: BS_F

b. Predictors: (Constant), LO, MixDev, RP, SupportM, GW, KZ, NotDev, WC, SuppYes

c. Predictors: (Constant), LO, MixDev, RP, SupportM, GW, KZ, NotDev, WC

d. Predictors: (Constant), LO, MixDev, RP, GW, KZ, NotDev, WC

e. Predictors: (Constant), LO, MixDev, RP, GW, KZ, WC

f. Predictors: (Constant), LO, RP, GW, KZ, WC

g. Predictors: (Constant), LO, RP, GW, KZ

h. Predictors: (Constant), LO, RP, KZ

i. Predictors: (Constant), LO, RP

ANOVA[a] The Firm

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	97.882	14	6.992	11.054	.000[b]
	Residual	170.775	270	.632		
	Total	268.657	284			
2	Regression	97.882	13	7.529	11.948	.000[c]
	Residual	170.776	271	.630		
	Total	268.657	284			
3	Regression	97.863	12	8.155	12.988	.000[d]
	Residual	170.794	272	.628		
	Total	268.657	284			
4	Regression	97.721	11	8.884	14.188	.000[e]
	Residual	170.937	273	.626		
	Total	268.657	284			
5	Regression	97.287	10	9.729	15.555	.000[f]
	Residual	171.371	274	.625		
	Total	268.657	284			
6	Regression	96.580	9	10.731	17.150	.000[g]
	Residual	172.077	275	.626		
	Total	268.657	284			
7	Regression	95.692	8	11.962	19.087	.000[h]
	Residual	172.965	276	.627		
	Total	268.657	284			
8	Regression	94.616	7	13.517	21.513	.000[i]
	Residual	174.041	277	.628		
	Total	268.657	284			
9	Regression	93.520	6	15.587	24.741	.000[j]
	Residual	175.137	278	.630		
	Total	268.657	284			
10	Regression	92.327	5	18.465	29.217	.000[k]
	Residual	176.331	279	.632		
	Total	268.657	284			
11	Regression	91.297	4	22.824	36.033	.000[l]
	Residual	177.360	280	.633		
	Total	268.657	284			

a. Dependent Variable: BS_F

b. Predictors: (Constant), Medium, BP, RevR10, BusAge5yr, FC, Employees20, BusAge3yr, Employees49, VSmall, RevR5, Employees200, Small, BusAge6yr, RevR11

c. Predictors: (Constant), Medium, BP, RevR10, BusAge5yr, FC, Employees20, BusAge3yr, Employees49, VSmall, RevR5, Small, BusAge6yr, RevR11

d. Predictors: (Constant), Medium, BP, RevR10, BusAge5yr, FC, Employees20, BusAge3yr, VSmall, RevR5, Small, BusAge6yr, RevR11

e. Predictors: (Constant), Medium, BP, RevR10, FC, Employees20, BusAge3yr, VSmall, RevR5, Small, BusAge6yr, RevR11

f. Predictors: (Constant), Medium, BP, RevR10, FC, Employees20, BusAge3yr, RevR5, Small, BusAge6yr, RevR11

g. Predictors: (Constant), Medium, BP, FC, Employees20, BusAge3yr, RevR5, Small, BusAge6yr, RevR11

h. Predictors: (Constant), Medium, BP, FC, BusAge3yr, RevR5, Small, BusAge6yr, RevR11

i. Predictors: (Constant), Medium, FC, BusAge3yr, RevR5, Small, BusAge6yr, RevR11

j. Predictors: (Constant), Medium, FC, RevR5, Small, BusAge6yr, RevR11

k. Predictors: (Constant), Medium, FC, RevR5, Small, RevR11

l. Predictors: (Constant), Medium, FC, RevR5, Small

ANOVA[a] The Entrepreneur

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	62.250	14	4.446	5.816	.000[b]
	Residual	206.407	270	.764		
	Total	268.657	284			
2	Regression	62.197	13	4.784	6.280	.000[c]
	Residual	206.460	271	.762		
	Total	268.657	284			
3	Regression	62.044	12	5.170	6.807	.000[d]
	Residual	206.614	272	.760		
	Total	268.657	284			
4	Regression	61.796	11	5.618	7.414	.000[e]
	Residual	206.861	273	.758		
	Total	268.657	284			
5	Regression	61.529	10	6.153	8.139	.000[f]
	Residual	207.128	274	.756		
	Total	268.657	284			
6	Regression	61.101	9	6.789	8.995	.000[g]
	Residual	207.556	275	.755		
	Total	268.657	284			
7	Regression	60.604	8	7.576	10.050	.000[h]
	Residual	208.053	276	.754		
	Total	268.657	284			
8	Regression	59.851	7	8.550	11.342	.000[i]
	Residual	208.807	277	.754		
	Total	268.657	284			
9	Regression	59.219	6	9.870	13.101	.000[j]
	Residual	209.439	278	.753		
	Total	268.657	284			
10	Regression	57.893	5	11.579	15.327	.000[k]
	Residual	210.764	279	.755		
	Total	268.657	284			
11	Regression	56.133	4	14.033	18.489	.000[l]
	Residual	212.525	280	.759		
	Total	268.657	284			

a. Dependent Variable: BS_F

b. Predictors: (Constant), DegreeDip, OldAge, ESE_G, Female, Allother, HC, CS_P, NoMatric, CS_I, Matric, ESE_F, Black, ESE_M, Youth

c. Predictors: (Constant), OldAge, ESE_G, Female, Allother, HC, CS_P, NoMatric, CS_I, Matric, ESE_F, Black, ESE_M, Youth

d. Predictors: (Constant), OldAge, ESE_G, Female, Allother, HC, NoMatric, CS_I, Matric, ESE_F, Black, ESE_M, Youth

e. Predictors: (Constant), OldAge, ESE_G, Allother, HC, NoMatric, CS_I, Matric, ESE_F, Black, ESE_M, Youth

f. Predictors: (Constant), OldAge, ESE_G, HC, NoMatric, CS_I, Matric, ESE_F, Black, ESE_M, Youth

g. Predictors: (Constant), ESE_G, HC, NoMatric, CS_I, Matric, ESE_F, Black, ESE_M, Youth

h. Predictors: (Constant), ESE_G, HC, CS_I, Matric, ESE_F, Black, ESE_M, Youth

i. Predictors: (Constant), ESE_G, HC, CS_I, Matric, ESE_F, Black, Youth

j. Predictors: (Constant), ESE_G, CS_I, Matric, ESE_F, Black, Youth

k. Predictors: (Constant), ESE_G, Matric, ESE_F, Black, Youth

l. Predictors: (Constant), ESE_G, ESE_F, Black, Youth

ANOVA[a] Integrated Approach (No Control Variables)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	103.054	9	11.450	19.015	.000[b]
	Residual	165.603	275	.602		
	Total	268.657	284			
2	Regression	102.992	8	12.874	21.448	.000[c]
	Residual	165.665	276	.600		
	Total	268.657	284			
3	Regression	102.776	7	14.682	24.518	.000[d]
	Residual	165.881	277	.599		
	Total	268.657	284			
4	Regression	101.762	6	16.960	28.251	.000[e]
	Residual	166.895	278	.600		
	Total	268.657	284			
5	Regression	100.361	5	20.072	33.276	.000[f]
	Residual	168.296	279	.603		
	Total	268.657	284			

a. Dependent Variable: BS_F

b. Predictors: (Constant), CS_P, ESE_F, RP, CS_I, BP, ESE_G, HC, FC, ESE_M

c. Predictors: (Constant), CS_P, ESE_F, RP, CS_I, ESE_G, HC, FC, ESE_M

d. Predictors: (Constant), CS_P, ESE_F, RP, ESE_G, HC, FC, ESE_M

e. Predictors: (Constant), ESE_F, RP, ESE_G, HC, FC, ESE_M

f. Predictors: (Constant), ESE_F, RP, ESE_G, HC, FC

ANOVA[a] Integrated Approach (Control Variables)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	131.990	37	3.567	6.447	.000[b]
	Residual	136.667	247	.553		
	Total	268.657	284			
2	Regression	131.988	36	3.666	6.653	.000[c]
	Residual	136.669	248	.551		
	Total	268.657	284			
3	Regression	131.982	35	3.771	6.870	.000[d]
	Residual	136.675	249	.549		
	Total	268.657	284			
4	Regression	131.976	34	3.882	7.100	.000[e]
	Residual	136.682	250	.547		
	Total	268.657	284			
5	Regression	131.960	33	3.999	7.342	.000[f]
	Residual	136.698	251	.545		
	Total	268.657	284			
6	Regression	131.933	32	4.123	7.599	.000[g]
	Residual	136.725	252	.543		
	Total	268.657	284			
7	Regression	131.900	31	4.255	7.871	.000[h]
	Residual	136.757	253	.541		
	Total	268.657	284			
8	Regression	131.865	30	4.396	8.162	.000[i]
	Residual	136.792	254	.539		
	Total	268.657	284			
9	Regression	131.776	29	4.544	8.465	.000[j]
	Residual	136.882	255	.537		
	Total	268.657	284			
10	Regression	131.704	28	4.704	8.792	.000[k]
	Residual	136.953	256	.535		
	Total	268.657	284			
11	Regression	131.624	27	4.875	9.143	.000[l]
	Residual	137.034	257	.533		
	Total	268.657	284			
12	Regression	131.489	26	5.057	9.512	.000[m]
	Residual	137.168	258	.532		
	Total	268.657	284			
13	Regression	131.261	25	5.250	9.897	.000[n]

	Residual	137.397	259	.530		
	Total	268.657	284			
14	Regression	131.015	24	5.459	10.312	.000[o]
	Residual	137.642	260	.529		
	Total	268.657	284			
15	Regression	130.702	23	5.683	10.751	.000[p]
	Residual	137.955	261	.529		
	Total	268.657	284			
16	Regression	130.455	22	5.930	11.242	.000[q]
	Residual	138.202	262	.527		
	Total	268.657	284			
17	Regression	130.110	21	6.196	11.761	.000[r]
	Residual	138.547	263	.527		
	Total	268.657	284			
18	Regression	129.583	20	6.479	12.299	.000[s]
	Residual	139.074	264	.527		
	Total	268.657	284			
19	Regression	129.129	19	6.796	12.908	.000[t]
	Residual	139.528	265	.527		
	Total	268.657	284			
20	Regression	128.155	18	7.120	13.479	.000[u]
	Residual	140.502	266	.528		
	Total	268.657	284			
21	Regression	127.098	17	7.476	14.101	.000[v]
	Residual	141.559	267	.530		
	Total	268.657	284			
22	Regression	126.128	16	7.883	14.823	.000[w]
	Residual	142.529	268	.532		
	Total	268.657	284			
23	Regression	125.031	15	8.335	15.612	.000[x]
	Residual	143.626	269	.534		
	Total	268.657	284			
24	Regression	123.927	14	8.852	16.514	.000[y]
	Residual	144.731	270	.536		
	Total	268.657	284			
25	Regression	122.978	13	9.460	17.598	.000[z]
	Residual	145.679	271	.538		
	Total	268.657	284			
26	Regression	121.892	12	10.158	18.825	.000[aa]

Residual	146.765	272	.540		
Total	268.657	284			

a. Dependent Variable: BS_F

b. Predictors: (Constant), LO, MixDev, RevR5, OldAge, Matric, Allother, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, GW, HC, SupportM, Small, BusAge5yr, NotDev, NoMatric, Employees20, Female, WC, CS_I, BP, Employees200, SuppYes, VSmall, RevR10, DegreeDip, FC, ESE_F, ESE_M, Youth, Black, Medium, BusAge6yr, RevR11

c. Predictors: (Constant), LO, MixDev, RevR5, OldAge, Matric, Allother, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, GW, HC, SupportM, Small, BusAge5yr, NotDev, NoMatric, Employees20, Female, WC, CS_I, BP, Employees200, SuppYes, VSmall, RevR10, DegreeDip, FC, ESE_F, ESE_M, Youth, Black, Medium, BusAge6yr

d. Predictors: (Constant), LO, MixDev, RevR5, OldAge, Matric, Allother, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, GW, HC, SupportM, Small, BusAge5yr, NotDev, NoMatric, Employees20, Female, WC, CS_I, BP, Employees200, SuppYes, VSmall, RevR10, DegreeDip, FC, ESE_F, Youth, Black, Medium, BusAge6yr

e. Predictors: (Constant), LO, MixDev, RevR5, OldAge, Matric, Allother, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, GW, HC, SupportM, Small, BusAge5yr, NotDev, NoMatric, Employees20, Female, WC, CS_I, BP, SuppYes, VSmall, RevR10, DegreeDip, FC, ESE_F, Youth, Black, Medium, BusAge6yr

f. Predictors: (Constant), LO, MixDev, RevR5, Matric, Allother, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, GW, HC, SupportM, Small, BusAge5yr, NotDev, NoMatric, Employees20, Female, WC, CS_I, BP, SuppYes, VSmall, RevR10, DegreeDip, FC, ESE_F, Youth, Black, Medium, BusAge6yr

g. Predictors: (Constant), LO, MixDev, RevR5, Matric, Allother, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, GW, HC, SupportM, Small, BusAge5yr, NotDev, NoMatric, Employees20, Female, CS_I, BP, SuppYes, VSmall, RevR10, DegreeDip, FC, ESE_F, Youth, Black, Medium, BusAge6yr

h. Predictors: (Constant), LO, MixDev, RevR5, Matric, Allother, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, HC, SupportM, Small, BusAge5yr, NotDev, NoMatric, Employees20, Female, CS_I, BP, SuppYes, VSmall, RevR10, DegreeDip, FC, ESE_F, Youth, Black, Medium, BusAge6yr

i. Predictors: (Constant), LO, MixDev, RevR5, Matric, Allother, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, HC, Small, BusAge5yr, NotDev, NoMatric, Employees20, Female, CS_I, BP, SuppYes, VSmall, RevR10, DegreeDip, FC, ESE_F, Youth, Black, Medium, BusAge6yr

j. Predictors: (Constant), LO, MixDev, RevR5, Matric, Allother, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, HC, Small, BusAge5yr, NoMatric, Employees20, Female, CS_I, BP, SuppYes, VSmall, RevR10, DegreeDip, FC, ESE_F, Youth, Black, Medium, BusAge6yr

k. Predictors: (Constant), LO, MixDev, RevR5, Matric, Allother, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, HC, Small, BusAge5yr, NoMatric, Employees20, Female, CS_I, SuppYes, VSmall, RevR10, DegreeDip, FC, ESE_F, Youth, Black, Medium, BusAge6yr

l. Predictors: (Constant), LO, MixDev, RevR5, Matric, Allother, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, HC, Small, BusAge5yr, NoMatric, Employees20, Female, CS_I, SuppYes, VSmall, RevR10, FC, ESE_F, Youth, Black, Medium, BusAge6yr

m. Predictors: (Constant), LO, MixDev, RevR5, Matric, Allother, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, HC, Small, BusAge5yr, Employees20, Female, CS_I, SuppYes, VSmall, RevR10, FC, ESE_F, Youth, Black, Medium, BusAge6yr

n. Predictors: (Constant), LO, MixDev, RevR5, Matric, Allother, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, HC, Small, BusAge5yr, Employees20, CS_I, SuppYes, VSmall, RevR10, FC, ESE_F, Youth, Black, Medium, BusAge6yr

o. Predictors: (Constant), LO, MixDev, RevR5, Matric, Allother, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, HC, Small, BusAge5yr, Employees20, CS_I, SuppYes, RevR10, FC, ESE_F, Youth, Black, Medium, BusAge6yr

p. Predictors: (Constant), LO, MixDev, RevR5, Matric, Allother, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, HC, Small, BusAge5yr, Employees20, CS_I, RevR10, FC, ESE_F, Youth, Black, Medium, BusAge6yr

q. Predictors: (Constant), LO, MixDev, RevR5, Matric, CS_P, ESE_G, RP, Employees49, KZ, BusAge3yr, HC, Small, BusAge5yr, Employees20, CS_I, RevR10, FC, ESE_F, Youth, Black, Medium, BusAge6yr

r. Predictors: (Constant), LO, MixDev, RevR5, Matric, CS_P, ESE_G, RP, KZ, BusAge3yr, HC, Small, BusAge5yr, Employees20, CS_I, RevR10, FC, ESE_F, Youth, Black, Medium, BusAge6yr

s. Predictors: (Constant), LO, MixDev, RevR5, Matric, ESE_G, RP, KZ, BusAge3yr, HC, Small, BusAge5yr, Employees20, CS_I, RevR10, FC, ESE_F, Youth, Black, Medium, BusAge6yr

t. Predictors: (Constant), LO, MixDev, RevR5, Matric, ESE_G, RP, KZ, BusAge3yr, HC, Small, Employees20, CS_I, RevR10, FC, ESE_F, Youth, Black, Medium, BusAge6yr

u. Predictors: (Constant), LO, RevR5, Matric, ESE_G, RP, KZ, BusAge3yr, HC, Small, Employees20, CS_I, RevR10, FC, ESE_F, Youth, Black, Medium, BusAge6yr

v. Predictors: (Constant), LO, RevR5, Matric, ESE_G, RP, KZ, BusAge3yr, HC, Small, Employees20, CS_I, RevR10, FC, ESE_F, Black, Medium, BusAge6yr

w. Predictors: (Constant), RevR5, Matric, ESE_G, RP, KZ, BusAge3yr, HC, Small, Employees20, CS_I, RevR10, FC, ESE_F, Black, Medium, BusAge6yr

x. Predictors: (Constant), RevR5, Matric, ESE_G, RP, KZ, BusAge3yr, HC, Small, CS_I, RevR10, FC, ESE_F, Black, Medium, BusAge6yr

y. Predictors: (Constant), RevR5, Matric, ESE_G, RP, KZ, BusAge3yr, HC, Small, CS_I, RevR10, FC, Black, Medium, BusAge6yr

z. Predictors: (Constant), RevR5, Matric, ESE_G, RP, KZ, BusAge3yr, Small, CS_I, RevR10, FC, Black, Medium, BusAge6yr

aa. Predictors: (Constant), RevR5, Matric, ESE_G, RP, KZ, BusAge3yr, Small, RevR10, FC, Black, Medium, BusAge6yr

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	46.799	9	5.200	6.445	.000[b]
	Residual	221.859	275	.807		
	Total	268.657	284			
2	Regression	101.095	10	10.110	16.531	.000[c]
	Residual	167.562	274	.612		
	Total	268.657	284			
3	Regression	118.031	11	10.730	19.448	.000[d]
	Residual	150.626	273	.552		
	Total	268.657	284			
4	Regression	121.892	12	10.158	18.825	.000[e]
	Residual	146.765	272	.540		
	Total	268.657	284			

a. Dependent Variable: BS_F

b. Predictors: (Constant), KZ, BusAge3yr, Matric, Small, RevR5, Black, Medium, RevR10, BusAge6yr

c. Predictors: (Constant), KZ, BusAge3yr, Matric, Small, RevR5, Black, Medium, RevR10, BusAge6yr, FC

d. Predictors: (Constant), KZ, BusAge3yr, Matric, Small, RevR5, Black, Medium, RevR10, BusAge6yr, FC, ESE_G

e. Predictors: (Constant), KZ, BusAge3yr, Matric, Small, RevR5, Black, Medium, RevR10, BusAge6yr, FC, ESE_G, RP