African Review of Economics and Finance | ISSN 2042-1478 | Volume 11 | Issue 1 | June 2019

An integrated approach to SME risk assessment: A focus on endogenous and exogenous risk factors

Jabulile Msimango-Galawe and Boris Urban

Wits Business School, University of the Witwatersrand, 2 St David's Place, Parktown, Johannesburg, 2193, South Africa.
Email: Jabulile.Galawe@wits.ac.za; Boris.Urban@wits.ac.za

Abstract

Despite the many government programmes that have been put in place to assist with small business development, South African small and medium-sized enterprises (SMEs) still face high rates of failure. This study is an empirical investigation into the role and influence that endogenous and exogenous risk factors play in reducing SME failure. Building on existing theoretical perspectives, such as complexity and systems theory, hypotheses are formulated to predict the impact of different forms of capital and risk factors on SME success. Moreover, an integrated risk assessment model that can be used to assess SMEs more holistically regarding risk and success was devised.

The study collected primary data through survey and employed correlational analysis and hierarchical multiple regression. The results indicate that financial capital and entrepreneurial self-efficacy are significant predictors of SME success. Regarding modeling, the integrated model shows that the effect of the combined risk factors is stronger when compared to individual effects only. These findings highlight that funding models need to incorporate both endogenous and exogenous risk factors which significantly affect the success of SMEs in South Africa.

Keywords: SMEs; Risk assessment; Success; Growth; Performance; Integrated Framework.

1. Introduction

Worldwide studies indicate that entrepreneurial activity is a key driver of the market economy and is the basis of economic growth (Autio & Acs, 2007; Stenholm, Acs, & Wuebker, 2013). Literature is proliferating and shows that entrepreneurship positively contributes towards economic development through job creation, wealth creation, and may provide solutions to inequality (Singer, Amorós, & Arreola, 2015). In the African context, researchers note that the development of entrepreneurship and enterprise development is contingent upon a sound policy to support enterprises, by ensuring financial support, conducive business regulations, market access, and export assistance (Abor & Quartey, 2010; Biggs & Shah, 2006).

Although some studies have researched the nature of the business environment in developing and African economies, there is little systematic evidence on the impact of risk factors and their influence on small and medium-sized enterprises' (SMEs) performance and success (Ncube, Brixiova, & Bicaba, 2014). This anomaly is concerning, considering that SMEs face a multitude of challenges which makes it difficult for them to succeed in hostile environments. The causes of SME success and failure vary from internal to external factors. Internal factors include challenges that emanate from SME operations and the individual that manages the business which is usually the entrepreneur. External factors emanate from the environment where the business operates and include all the uncertainties that come with economic and policy changes. Many studies have managed to identify these challenges and the causes thereof which are referred to as risk factors (Akinyemi & Adejumo, 2017; Percy, Visvanathan, & Watson, 2010; Pooe & Mafini, 2012; Ramukumba, 2014).

Recognising the importantce of SMEs, governments around the world have put in place many programmes to assist, reduce failure rates and foster small business development by providing financial and non-financial support (Singer *et al*., 2015). However, South African SMEs still face high rates of failure (Herrington, Kew, & Mwanga, 2017; Seed Academy, 2017), where in terms of the Total Entrepreneurial Activity (TEA) rate South Africa remains among the lowest in the peer group of developing nations (Herrington, Kew, & Mwanga, 2017). Additionally, while researchers note that the geographic bias in favour of covering western developed economies has progressively decreased (Bruton, Ahlstrom, & Obloj, 2008) little is known of the endogenous and exogenous risk factors which may influence SME failure or success in South Africa. A gap in the literature has been noted where it has been mentioned that in developing countries such as

Africa, the provision of frameworks where entrepreneurs and policymakers can interact is largely missing (Naudé, Gries, Wood, & Meintjies, 2008).

Acknowledging the gap in the literature and the high failure rates of SMEs in South Africa, the present study heeds research calls on the need for a risk assessment model which provides a holistic and integrated view (Botha, van Vuuren, & Kunene, 2015; Nadkarni & Barr, 2008). A view that takes cognisance of the entrepreneur, as well as other endogenous and exogenous risk factors (Beck, 2007) which may impact SME success and failure. To date, most of the research in the field of entrepreneurship has been fragmented, with many models developed in the literature being proposed on an isolated basis (Moroz & Hindle, 2012). These isolated models are insufficient to combine and create an integrated model of the entrepreneurial process, as they fail to intergate endogenous and exogenous risk factors (Van Burg & Romme, 2014).

Scholars and policy-makers acknowledge that the high failure rate of SMEs is a challenge in South Africa that needs to be addressed and one of the ways to do this is by developing tools, frameworks, and models that can accurately measure the likelihood of success and quantify the risk levels of SMEs. Several researchers emphasise a lack of risk assessment models and frameworks that adopt a holistic, multidisciplinary, integrated approach in their risk assessment strategy (Smit & Watkins, 2012; Teng, Bhatia, & Anwar, 2011). Moroz and Hindle (2012) state emphatically that there is currently an urgent need for the development of an integrated model of the entrepreneurial process, potentially adding new arguments where the current literature may be lacking. Consequently, devising a risk assessment model which is based on empirical observations, will allow for strategies to be devised improving SME success.

The purpose of this study is to identify and evaluate the ideal (holistic, objective, practical, quantifiable) model that can be used to assess the risks and likelihood of success of SMEs in South Africa. In line with this purpose, the current study seeks to answer the following three sub-questions:

1. Which of the risk factors has the most impact on the SMEs?;
2. How can the risk levels be quantified to identify SMEs at high risk of failure?;
3. What combination of the risk factors provide a better predictive capacity of SME success?

The study is motivated by a general paucity of empirical research on entrepreneurial risk-assessment in Africa (Urban & Hwindingwi, 2016).

Considering that most studies on entrepreneurship are predominantly western (Bruton *et al.*, 2008) the focus on both endogenous and exogenous risk factors in an under-researched African country could prove valuable. While there are a plethora of studies on SMEs, most of these have focused on developed economies such as the USA, Asia and some European countries (Kanniainen & Leppämäki, 2009; Liu, Hou, Yang, & Ding, 2011; Perry, 2001; Yallapragada & Bhuiyan, 2011; Zahra, Fahimeh, & Kambeiz, 2012). South Africa provides a unique setting where entrepreneurial activity forms an important component of the country's economic growth and development objectives (Herrington *et al*., 2017). As a result, the study could prove valuable insofar as a risk assessment model is developed from empirical data and this can provide insight for many other countries in Africa with similar characteristics of an emerging economy.

The study makes an important contribution to several stakeholders in the entrepreneurship ecosystem. The study's findings could inform policymakers on whether to advocate for legislation that allows entrepreneurs to mitigate risks and achieve success. Moreover, the study is important in that it takes place within an African context, where traditionally entrepreneurship and SMEs have been viewed from a survivalist perspective. Consequently, by investigating the complex effect of both endogenous and exogenous risk factors, the study provides practical insights to policymakers and entrepreneurs by identifying how to foster SME success.

The article proceeds as follows: First relevant literature is reviewed to substantiate the study hypotheses. Methodological issues are discussed, and data analysis and discussions follow. Finally, study conclusions are drawn and recommendations made.

2. Literature review and hypothesis development

2.1. An integrated approach to entrepreneurship

Theories of entrepreneurship that have focused on "one-sided determinism, where either environmental or personality variables have been specified as unique predictors of entrepreneurship, have failed to capture the complexity of human action that encompasses the interaction of environmental, cognitive, and behavioural variables" (Bandura, 1994b, p. 34). Consequently, in constructing a conceptual framework for an integrated risk assessment model, the present study draws on the work of several researchers who advocate for an integrated approach when conducting entrepreneurship research. Indeed, as scholars note

"the nature of the relationship between the environment and the small firm or various aggregations of small firms is a complex issue and cannot be explained by any single substantive theory" (Fuller & Moran, 2001, p. 58).

A useful lens to study interdisciplinary theory is the complexity theory which grew out of systems theory in the 1960s. Wiklund, Patzelt, and Shepherd (2009) posit that it can be beneficial in theory building in the entrepreneurship and the small business domains because it advocates for integration rather than disjoint research that is multilevel. Complex theory locates itself within complexity science, which is an emerging interdisciplinary study of a variety of complex systems in the natural and physical world, including the 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, and interactive where the emphasis is that the entrepreneur should be at the center of the research process (Fuller & Moran, 2001).

Another useful theoretical perspective is the system approach which provides a platform to bring a holistic and multidisciplinary approach to studying entrepreneurship. The system thinking approach supports the complex theory and an entrepreneurial ecosystem approach but also adds value by bringing in the interdisciplinary, interdependencies and interrelationships. 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, Andersen, & Murdock, 2016).

While several entrepreneurial process models and frameworks have been proposed, the Global Entrepreneurship Monitor (GEM) relies on a framework that recognises entrepreneurship as part of a complex feedback system from inputs, through activity to outputs, and finally outcomes and impacts. The GEM model has evolved to provide the big picture, holistic approach (Herrington & Kew, 2016). The level and nature of entrepreneurial activity differ from country to country, and the specific entrepreneurial framework conditions that prevail within a country may have an enormous influence in this regard (Herrington & Kew, 2014; Van Burg & Romme, 2014). Environmental framework conditions are driven by the country's social, cultural, and political context, which in turn play a large part in determining the nature and extent of entrepreneurial opportunities, as well as the entrepreneurial tendencies, risk capacity, and

preferences of the entrepreneurs (Van Burg & Romme, 2014). Moreover, the supportive environmental framework is consistent with risk management theories of outcomes and impacts.

2.2. Risk conceptualisation

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 they cannot do so with uncertainty (Demir & Bostanci, 2010). According to Levy (1992) risk differs from uncertainty. Uncertainty is when the outcomes are not entirely known, and certainty is when the known probabilities are equivalent to zero and one, which is consistent with Demir and Bostanci's definition. The concept of risk introduces many unknowns, volatilities, and variability, which are associated with potential loss or failure. For an accurate assessment of risk, it is vital to differentiate uncertainty from risk, because it is crucial 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. While some researchers believe that ambiguity is another important aspect when defining risk, the present study relies on the well-established conceptualisation of risk and uncertainty which covers the scope of this study (Murmann & Sardana, 2013).

A critical review of the literature shows that risk is conceptualised as "the possibility of loss or injury and the degree of probability of such loss" (Stanley Kaplan & Garrick, 1981, p. 12), which 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 are probability or likelihood and impact. These two variables are key when assessing and classifying risk and how it impacts on the likelihood of success (Christine, 1995; Demir & Bostanci, 2010; Sarah Kaplan, 2011). In the present study, the risks that SMEs face are determined, evaluated and quantified. Determining the risks SMEs face allows for the calculation of each risk's likelihood of occurring and its impact thereof. Moreover, to formulate an ideal risk assessment model framework the focus is on risks about sustaining and growing a successful business rather than risk taken to start a new venture and identify opportunities, which is usually where most literature in entrepreneurship is focused on (Wiklund & Shepherd, 2003).

Evidence from the literature 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 occur because of management decisions and actions (Everett & Watson, 1998). While most scholars generally agree on SME risk factors, each scholar tends to focus on a particular type of risk in isolation, neglecting the impact of the cumulative effect (Kennedy & Tennent, 2006). It is important to note that the risk profile of a small business cannot be a mirror image or a smaller version of a big business risk profile. Thus the need to have risk tools customised for SMEs because they have their dynamics which can be diverse (Altman & Sabato, 2007).

The following sections explore the risk variables as identified in the literature as both endogenous and exogenous risk factors, which include all three levels of analysis: the individual, firm, and environment (Urban, 2018). The focus is on variables which have been found to have either a strong and significant relationship with business success (performance or growth) (Brink, Cant, & Ligthelm, 2003; Markman & Baron, 2003; Rauch, Wiklund, Lumpkin, & Frese, 2009; Vecchio, 2003)

The selection of variables is by no means exhaustive. Building on prior research, variables are selected from each risk category which literature has identified most frequently as most critical. Critical risks (highest impact) are those that lead to bankruptcy or closure if a small business is exposed to them. The selection criteria are based on findings which show that these risk factors have the highest likelihood of occurring and may have devastating consequences if ignored (Howard & Jawahar, 2002). It is acknowledged that the actual process of how risks and entrepreneurial responses are formed is far more complex and that no single factor can determine the outcome of this process. It is also important to recognise that these variables work in combination rather than as single predictors. Notwithstanding the complexity of the phenomenon and the reciprocal nature of relationships between these variables, hypotheses are formulated but are restricted to some variables and links.

2.3. Endogenous and exogenous risk factors

Multiple variables were critically analysed from each risk category regarding their likelihood of occurring and impact as per the literature (Boubala, 2010; Smit & Watkins, 2012). For this study and for the sake of manageability the critical risk variables were narrowed down to one variable per risk category. The variables selected are as follows: Endogenous category includes the entrepreneur and firm risk factors which are entrepreneurial self-efficacy and financial capital respectively. The exogenous category includes environmental risk factors, and

in this category, risk perception was selected. These are individually delineated in the following subsections.

2.3.1. Risk Perception (RP)

It is defined as the assessment of the risk inherent in a situation which informs the risk behaviour of the entrepreneur which is the decisions made with varying degrees of uncertainty (Cooper & Faseruk, 2011; Sitkin & Pablo, 1992). Risk perception is sometimes referred to as risk assessment (Burns, Peters, & Slovic, 2012), assessment and perception are therefore used interchangeably. Drawing from categorisation and problem framing concepts that state that entrepreneurs assess risky environments more favourable and frame problems as opportunities rather than threats; this study argues that the way entrepreneurs categorise situations will encourage them to exploit more opportunities which will result in successful SMEs (Norton Jr & Moore, 2006).

Bayes theory defines risk perception slightly different from Sitkin and Pablo; it includes some antecedents of risk assessment which are informative prior and current data *(informative prior x current data= the decision maker's assessment*). The probability of assessing situations better increases if the entrepreneur has prior information, whether educationally or experientially, and even better if both. This is a limitation in this study since the two variables were not measured. However for the purpose of this study Sitkin and Pablo's approach was adopted by only assessing whether the entrepreneurs assess a situation as high risk or not (Norton Jr & Moore, 2006; Sitkin & Weingart, 1995) and expanded to assess the association of such behaviours with business success.

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

Entrepreneurs are very optimistic individuals in the way they frame situations, and this makes 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). Following prior theorization where a relationship between risk perception and risk behaviour is expected the current study extends this further to hypothesise a relationship between risk perception and the business success of the SMEs, as follows:

H1a: *There is a positive relationship between risk perception as a risk factor and business success of SMEs*

H1b: *Risk Perception has a positive impact on the business success of SMEs*

2.3.2. Financial capital (FC)

Internal risks arise from events taking place within the business and are generated within the system due to day-to-day operations. These risks include the business operations, the efficiency of the internal systems in the business, business planning and strategy, and the capacity of the business to raise and manage financial capital. These kinds of risks can be predicted, and the probability of their occurrence can be determined with a certain level of ease (Vos, 1992). The entrepreneur can minimise the probability of these risks occurring (Murmann & Sardana, 2013), where 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). The focal variable for the present study is financial capital which is selected at the firm level of analysis. The firm itself cannot be directly analysed because it is a multi-layered complex structure which makes it an inappropriate unit of analysis (Wiklund *et al*., 2009) and hence financial capital is the risk variable selected within this category.

Several authors agree that lack of finance is a major problem for small businesses in South Africa (Cassar, 2004; Herrington, Kew, Kew, & Monitor, 2010; Herrington & Kew, 2016). Research reports that while there is a strong positive relationship between funding and SME success (DTI, 2008; Finscope, 2010; Makina, Fanta, Mutsonziwa, Khumalo, & Maposa, 2015), the contribution of other factors to SME success will only be feasible if there is funding to implement or execute such related factors. Funding typically includes access to finance, start-up, working and growth capital (Beck & Demirguc-Kunt, 2006; Fatoki & Odeyemi, 2010). Following this stream of research and empircal findings, it is predicted that:

H2a: *There is a positive relationship between financial capital as a risk factor and business success of SMEs*

H2b: *Financial capital has a positive impact on the business success of SMEs*

2.3.4. Entrepreneurial self-efficacy (ESE)

Entrepreneurship as behaviour cannot materialise without human agency – the entrepreneur. Entrepreneurship depends entirely on the entrepreneur who makes the entrepreneurial decisions to drive the process (Shane, Locke, & Collins,

2003). Self-efficacy is the core motivation and drive for entrepreneurs to start their businesses because of the strength of their belief in their ability to deal with prospective challenging situations of their business (Bandura, 1982, 2012). Self-efficacy provides motivation and strength to persevere and put more effort into challenging entrepreneurial tasks (Bandura, 1994a). Self-efficacy can be classified as either general self-efficacy (GSE) or entrepreneurial self-efficacy (ESE) (Urban, 2006). 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. ESE is a task-specific construct which involves behavioural control (Chen, Greene, & Crick, 1998) and is one of the key determinants of SME success. Entrepreneurs who have a high level of ESE have a higher probability of starting and running a successful SME because of their strong belief in their abilities. ESE has several elements, but the key primary entrepreneurial capabilities include management, innovation, and risk-taking. In this study, we evaluate new dimensions or elements of ESE which are financial control and growth which are used to evaluate the relationship between SME success in the present study. Moreover, it has been noted that 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. Consequently, it is predicted that:

***H3**: Entrepreneurial self-efficacy dimensions have a positive relationship with the business success of SMEs*

***H4:** Entrepreneurial self-efficacy dimensions have a positive impact on the business success of SMEs*

***H3a:** There is a positive relationship between the management dimension of entrepreneurial self-efficacy and business success of SMEs*

***H4a:** Entrepreneurial self-efficacy management dimension has a positive impact on the business success of SMEs*

***H3b:** There is a positive relationship between the financial control dimension of entrepreneurial self-efficacy and business success of SMEs*

***H4b:** Entrepreneurial self-efficacy financial control dimension has a positive impact on the business success of SMEs*

***H3c:** There is a positive relationship between the growth dimension of entrepreneurial self-efficacy and business success of SMEs*

***H4c:** Entrepreneurial self-efficacy growth dimension has a positive impact on the business success of SMEs*

The conceptual framework is based on each of the hypothesis where each risk variable in the framework differs in terms of the its degree of impact on the success of the SME, since risk entails both impact and the likelihood of occurrence (Bera, 2009). In line with this, the following statistical conceptual risk assessment model is formulated.

$$Y_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \sum_{j=1}^{n} \delta_j Z_j + \varepsilon_i \quad (1)$$

where

Y denote business success,

β_i (i=1,2,3) and δ_j are weights,

X_1 represents the firm risk factor,

X_2 denotes entrepreneur risk factor,

X_3 represents environment risk factor and

Z_J is a vector of control variables.

3. Methodology

The research design was cross-sectional and quantitative in nature, which followed a positivist approach. The research population consisted of South African SMEs. The study was carried out in a country that 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). There is a general challenge in finding an efficient sampling frame for SMEs in developing countries. This lack of a known sampling frame poses 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 and consists of SMEs that have been in existence for more than a year, keep financial records and are represented in different national business organisations' databases. Simple random sampling was employed due to its advantages; first, all SMEs within the sampling frame had an equal chance of being selected, second, the sample was more representative, and third, the sampling error and bias was reduced (Creswell, 2012).

Primary data was collected from South African SMEs through self-administered questionnaires administered through the Qualtrics platform. The link to the questionnaire was shared with different organisations that have a database with a membership of SME owners and on different social media

platforms to have a broader reach. A sample of 554 SMEs was attained initially. However, after screening the data the sample size was reduced to 285 because of missing data, outliers and poor-quality responses. Though the sample size was reduced to 285, sampling adequacy was achieved as per Kaiser's cut-off (Field, 2013; Kaiser, 1970). The Kaiser-Meyer-Olkin Sampling Adequacy test was significant at (KMO= 0.839>0.5) which is interpreted as good.

The research instrument included open and closed-ended questions with most of the key constructs measured using 5-points Likert scale with multiple item scales (Zikmund, 2003). The development of the questionnaire was informed by previous studies and previously tested scales (Acedo & Florin, 2006; Cools & Van den Broeck, 2007; Urban, 2012). The research instrument had different sections to collect demographic data and data specific to the key variables (dependent and independent).

3.1. Variable description

3.1.1. Dependent variable

The dependent variable is SME Success. It was operationalised as a multidimensional construct which includes growth and financial performance indicators. Conventionally, business success is described based on financial performance indicators (Wiklund, 2006). 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 will be limited to financial performance (Baum, Locke, & Smith, 2001) since the quality of the responses were better on financial performance compared to business growth.

3.1.2. Independent variables

The independent variables - risk perception, financial capital, and entrepreneurial self-efficacy were also measured using multiple items on a 5-point Likert scale and were operationalised in different ways as explained below.

Risk Perception: The risk perception variable was measured by assessing entrepreneurs' views on the riskiness or opportunities that are posed by the environment. The study assessed how the entrepreneurs viewed risk levels, growth potential and business opportunities for their businesses. They were asked about several external risk variables like government policies, culture and

social environment (Acedo & Florin, 2006; Podoynitsyna, Van der Bij, & Song, 2012; Ruzzier, AntonciC, Hisrich, & Konecnik, 2007) which the responses gave the researcher information on how risky the environment was as perceived by the respondents.

Financial Capital was measured using two factors which were funding and availability of capital. The funding scale did not converge and that left the researcher with only the capital availability scale which was developed by the researcher based on evidence that suggested that the availability of capital is key in growing or in the performance of an SME. The financial capital indicators measured the availability of start-up, working and growth capital (Brockman, Jones, & Becherer, 2012) and were abbreviated FC.

Entrepreneurial Self Efficacy was operationalised as a multidimensional construct which includes management, financial control, and growth indicators. The ESE- Management variables measured the self-efficacy of the entrepreneur in managing the overall business operations, ESE – Financial control was measured using multiple items on the self-efficacy of the entrepreneur in effectively controlling and managing the finances of the SME and lastly the ESE- Growth measured the entrepreneur's self-efficacy in growing the enterprise (Chen *et al*., 1998). The three variables were abbreviated ESE_M, ESE_F, and ESE_G respectively. All these measures were task-specific, as Bandura argues that entrepreneurial task-specific measures in self-efficacy are better than general self-efficacy measures (Bandura, 2006).

3.1.3. Control variables

There were control variables applied for each of the three risk factors (environment, firm and entrepreneur). The level of development of the area, support from external structures, sector, and the location were used as control variables for the environmental risk factor 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 for the firm risk factor variable. Lastly, race, gender, age and level of education were used as control variables for the entrepreneur risk factor variable.

4. Data analysis and discussion

Data analysis included sample characteristics or analysis of demographic data, descriptive statistics, correlational analysis, and hierarchical multiple regression. The Statistical Package for the Social Sciences Software (SPSS) was used to analyse the data collected through qualtrics.

4.1. Sample characteristics

The sample characteristics results reveal that more males (58%) than females (42%) were sampled overall. Most of the respondents were white (47%) followed by black (42%), coloured (7%) and the other race groups tally to only 4% combined.

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 (Herrington & Kew, 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.

Regarding education, 33% of respondents had post-graduate as highest qualification, followed by 30% diplomas, 22% hold a bachelor's degree as their highest qualification, 12% had matriculation, 2% had no matriculation, while 1% 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 respondents were from LinkedIn, which is a platform for professionals and is likely to attract educated individuals who have professional profiles.

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 six provinces with each of them having 4% or fewer respondents.

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%.

4.2. Validity and reliability

Since a 5-point Likert scale with multiple items was used, the validity and reliability of the scales needed to be confirmed. To confirm the validity and reduce the dimensions of the variables to a smaller set, principal axis factoring was conducted and to test for reliability Cronbach alpha was used.

Principal axis factoring was the chosen extraction method for the exploratory factor analysis with oblique rotation (Promax) (Costello & Osborne, 2005)

because of the correlation between variables. 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).

The integrated results from the pattern matrix are discussed below, and EFA showed that the total variance explained was 65% which is good. The KMO was 0.839 which is greater than 0.5, and thus sampling adequacy was achieved.

SME Success (BS_F): Six items converged into one factor which was labelled business success and to be more specific financial performance (BS_F). The factor loadings were above the acceptable limit of 0.4 from (0.715 to 0.940). Based on the sample size (n=285) and factor loadings greater than 0.4 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). After conducting EFA and confirming the convergence, the reliability of the scale was tested using Cronbach Alpha and the results show that the financial performance scales are good (six items, α=0.939).

Risk Perception (RP): Seven variables converged into one factor which was labelled risk perception, and the factor loadings were between 0.432 and 0.682, which is not the best loading but still acceptable because the loading is greater than 0.4. The measurement scale with seven items was reliable with (seven items, α=0.757).

Entrepreneurial Self Efficacy (ESE): The results show that EFA extracted three factors through PAF. The three factors relate to entrepreneurial self-efficacy management, entrepreneurial self-efficacy financial control, and entrepreneurial self-efficacy growth. Afterwards the cross-loading items and those with low loadings were removed – ESE_M=3 items, ESE_F=4 items, and ESE_G=3 items were retained. The factor loadings vary from 0.414 to 0.887 so all items that loaded greater than 0.4 were retained. Entrepreneurial self-efficacy was measured with three sub-scales; management, financial control, and growth. Three separate reliability tests were conducted to test each scale independently. The Cronbach alpha for the 3 ESE factors were (ESE_M=3 items; α=0.629); (ESE_F=4 items; α=0.850) and (ESE_G=3 items; α=0.799) which was good and the scales were deemed reliable.

Financial Capital (FC): Financial Capital converged into one factor with three items with factor loadings >0.4 from (0.736 to 0.931). The reliability of the financial capital scale was (FC=3 items; α=0.875) which was good.

4.3. Results and interpretation

To answer the study's primary research question, four hypotheses had to be tested first.

4.3.1. Hypotheses testing

The correlation matrix was computed first to test the relationship between the independent variables (endogenous and exogenous risk factors) with the dependent variable (business success) operationalised as financial performance in this study. The Pearson correlational analysis included testing the strength, size, direction and significance of relationships between variables. The Pearson correlation coefficients are reported with levels of significance denoted in Table 1. The results are intepreted in terms of each study hypothesis.

Hypothesis 1a: There was a weak positive and significant relationship between risk perception as a risk factor and business success of SMEs at ($r=0.162$; $p<0.01$) (Field, 2013). Hypothesis 1a was supported and significant though small.

Hypothesis 2a: There was a strong positive and significant relationship between financial capital as a risk factor and business success of SMEs at ($r=0.534$; $p<0.01$) (Field, 2013). Hypothesis 2a was supported and significant.

Hypothesis 3a: There was a medium positive and significant relationship between management dimension of entrepreneurial self-efficacy as a risk factor and business success of SMEs at ($r=0.256$; $p<0.01$) (Field, 2013). Hypothesis 3a was supported and significant.

Hypothesis 3b: There was a medium positive and significant relationship between financial control dimension of entrepreneurial self-efficacy as a risk factor and business success of SMEs at ($r=0.313$; $p<0.01$) (Field, 2013). Hypothesis 3b was supported and significant.

Hypothesis 3c: There was a medium positive and significant relationship between growth dimension of entrepreneurial self-efficacy as a risk factor and business success of SMEs at ($r=0.363$; $p<0.01$) (Field, 2013). Hypothesis 3c was supported and significant.

According to Table 1, all risk variables had a medium to a large positive and significant relationship with the dependent variable (BS_F) except for risk perception which had a small but still significant relationship. No Pearson correlation coefficient was insignificant between the dependent and independent variables and the fact that the correlation does not show the direction of the causal relationship and so for that reason a regression analysis was needed.

Since all the hypotheses (***H1a***, ***H2a***, ***H3a***, ***H3b*** and ***H3c***) on relationships were supported (positive and significant), further tests were conducted to assess the impact and unique contribution of each risk variable (***H1b***, ***H2b***, ***H4a***, ***H4b*** and ***H4c***).

Table 1: Descriptives and Pearson Correlation Analysis

Number	Variable	Mean	SD	1	2	3	4	5	6
1	BS_F	2.86	0.97	1					
2	FC	2.50	1.08	0.534**	1				
3	ESE_M	3.66	0.77	0.256**	0.132*	1			
4	ESE_F	3.32	0.91	0.313**	0.300**	0.308**	1		
5	ESE_G	3.39	0.87	0.363**	0.212**	0.390**	0.371**	1	
6	RP	3.17	0.75	0.162**	0.145*	0.050	-0.061	0.039	1

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

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

4.3.2. Impact of endogenous and exogenous risk factors

Hierarchical multiple regression was the core statistical technique employed to test the study's hypotheses on impact, build the integrated risk assessment model framework and answer the research questions. First, the variables that are significant to enter the regression model were identified using the backward elimination method. After that, the multiple-step hierarchical regression analysis was performed testing the uniqueness of each variable and identifying the ideal model framework.

Regarding hypotheses ***H1b, H2b***, ***H4a***, ***H4b*** and ***H4c***, Table 3 in Appendix A, shows the results from a multiple linear regression that was performed with all variables in the model except for the control variables in order to test the impact of each independent variable on business success of SMEs. The model explained about 36% (Adjusted R-Square = 0.361) of the variability in BS_F, and the results were interpreted as follows:

Hypothesis 1_b: Risk perception had a small positive and significant impact on business success of SMEs, RP (β=0.091,$p<0.1$). Hypothesis 1_b was supported and significant though small.

Hypothesis 2_b: Financial capital had a positive and significant impact on business success of SME, FC (β=0.441,$p<0.05$). Hypothesis 2_b was supported and significant.

Hypothesis 4$_a$: Management dimension of entrepreneurial self-efficacy had a small positive and significant impact on business success of SMEs, ESE_M (β=0.089,p<0.1) Hypothesis 4$_a$ was supported and significant.

Hypothesis 4$_b$: Financial control dimension of entrepreneurial self-efficacy had a small positive impact but insignificant on business success of SMEs, ESE_F (β=0.084,p>0.1).. Hypothesis 4$_b$ was supported but insignificant.

Hypothesis 4$_c$: Growth dimension of entrepreneurial self-efficacy had a positive and significant impact on business success of SMEs, ESE_G (β=0.200,p<0.05). Hypothesis 4$_c$ was supported and significant.

The size of the effect of each risk variable was as follows: FC - 44%, ESE_G - 20%, RP - 9,1% and ESE_M - 8,9%, all significant predictors. However, ESE_F was the only variable that was insignificant with an effect size of 8,4%.

Taking into consideration the results from the multiple linear regression model, backward elimination regression was performed to confirm which variables should enter the regression model first. Table 4 in Appendix A, shows that the beta coefficients of ESE_M and RP are very small (β<10%) though significant and therefore should be entered last. The first variable to be removed from the model was ESE_F which confirmed the insignificance that was suggested by the multiple linear regression model, but RP and ESE_M remained significant though small and were included in further analysis using hierarchical regression. The result partly answers the research question, which of the risk factors has the most impact on business success of SMEs; it is evident that ESE_F has the least impact as its impact is small and insignificant.

To ascertain which of the risk factors has the most impact on business success of SMEs, the hierarchical regression analysis was performed, entering the variables as suggested by the backward elimination model. The results in Table 2 below revealed the following:

1. Model 1 adjusted R-Square indicates that 15% 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 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 variable;
2. 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 variable;

3. Model 2 shows that adding FC ($\Delta R^2 = 0.202$) 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 represents the firm risk factor in the study;
4. Model 3 reveals that adding ESE_G to the model further increased its predictive capacity from 37.6% to 43.9% ($\Delta R^2 = 0.063$). The 6.3% increase in predictive capacity represents the entrepreneur risk factor in the study;
5. 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 ($\Delta R^2 = 0.014$) to the model. The predictive capacity of the environmental risk factor increased by 1.4% while ESE_M did not increase the predictive capacity and was eliminated from the model.

Table 2: Model Summary - Hierarchical Regression

					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 effect of the independent variables on the dependent variable. Table 5 further shows the results of the coefficients of Model 4 which is the final model. 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: First, when FC increases by one unit, business success increases by 0.345 units, holding other factors constant. Secondly, when ESE_G increases by one unit, then business success increases by 0.308 units, holding other factors constant. Lastly, when RP increases by one unit, then business success increases by 0.153 units, holding other factors constant.

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 which confirms the complexity of risk assessment models of SMEs. The result of the R-square test supports this study's argument that the model should be integrative and all-encompassing to increase its predictive capacity.

The hierarchical multiple regression indicated that financial capital is the strongest predictor, followed by entrepreneurial self-efficacy- growth and then risk perception, 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.

In conclusion, all the study's hypotheses $\boldsymbol{H1_b}$, $\boldsymbol{H2_b}$, $\boldsymbol{H4_a}$, $\boldsymbol{H4_b}$ and $\boldsymbol{H4_c}$ were supported though $\boldsymbol{H4_a}$ and $\boldsymbol{H4_b}$ were insignificant and removed from the model. Therefore the proposed integrated risk assessment model framework which was conceptualised during the study's literature review has been confirmed.

4.4. Summary of key findings

The study was guided by one primary research question: What is the ideal (holistic, objective, practical, quantifiable) model framework that can be used to assess the risks and likelihood of success of SMEs in South Africa?

Following the empirical evidence emanating from the statistical analyses the integrated risk assessment model is confirmed to have a relatively strong predictive capacity of business success for SMEs in South Africa. From the results, it is clear that an integrated model that encompasses both endogenous (individual and firm) and exogenous (environment) risk factors has better predictive capacity than a model that analyses risk variables individually ignoring the cumulative effect of other equally critical risk variables. These findings are in general agreement with Fuller and Moran (2001) who emphasise

that the best model to assess SME risk and success should be integrative and all-encompassing to capture the complexities embedded in SMEs (Baum *et al*., 2001; Wiklund *et al.*, 2009).

More specifically the results support the study hypothesis as follows: First, financial capital emerged as the most influential variable compared to entrepreneurial self-efficacy and risk perception. The researcher expected the entrepreneur risk variable to emerge the most influential than financial capital as Shane *et al*. (2003) argues that the entrepreneur is at the centre of entrepreneurship and is key to the whole entrepreneurship process. Nevertheless, empirical studies have confirmed the role and impact of financial capital on SME failure and this finding is no different to previous findings (Beck, 2007; Cassar, 2004; Makina *et al.*, 2015) except that this study went further to quantify the impact and gauge the magnitude of this effect and compare with other risk factors.

Secondly, how can the risk levels be quantified to identify SMEs that are at high risk of failure? It is advisable to apply risk methodologies to determine likelihood and impact and use this in the regression analysis to quantify the risk. Hierarchical regression analysis in conjunction with backward elimination proved to be effective in identifying the unique contribution of each risk variable in this study thus answering the study's second research question.

Lastly, what combinations of the risk factors provide a better predictive capacity of SME success? Regarding modelling, the integrated model shows that the effect of the combined risk factors is stronger when compared to individual effects only. Moreover, it is critical to control for other individual, firm and environmental risk variables to ensure the effect size of each variable is not exaggerated which might give unrealistic risk levels. These findings highlight that funding models need to incorporate both endogenous and exogenous risk factors which significantly affect the success of SMEs in South Africa. This will accurately determine the likelihood of success and the impact thereof (Smit & Watkins, 2012).

4.5. Discussions of the implications of the key findings

These key findings summarised above have practical and theoretical implications, which are discussed below.

Practical Implications for Practitioners: New funding models specific to SMEs are required (Smit & Watkins, 2012). Lack of funding is cited as one of the main reasons SMEs fail (Finscope, 2010; Olawale & Garwe, 2010) and

this study has confirmed this since financial capital variable had the biggest impact on business success in the model. 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 pro-SMEs. 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 as indicated in the study's findings. Therefore, funders should consider assessing variables that are significant predictors of success. The study confirmed the 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 (Brinckmann, Grichnik, & Kapsa, 2010; Perry, 2001).

Study results confirm that having confidence in one's ability to understand and manage financials on a day-to-day basis influences financial performance, which suggests that funders should focus on individual variables such as attitudes and confidence rather than merely rely on written financial projections on a business plan. This recommendation supports prior research which affirms the relationship between ESE and performance (Bakar, Bin Ramli, Ibrahim, & Muhammad, 2017). Practitioners include incubators and other non-financial supporters of SMEs. Most organisations that support SMEs have generic training programs irrespective of the level at which the SMME is operating (Mcvay, 1999). 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, consequently enhancing the entrepreneurs' self-efficacy (Bandura, 2012; Urban, 2006). 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: First, to adopt a holistic approach when assessing SMMEs. Secondly, to integrate the individual, firm and environment level when providing support to SMMEs. Thirdly, 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.

Lastly, to emphasise financial capital available in the business followed by the individual's self-efficacy and risk perception when supporting SMMEs.

Practical implications for researchers: The findings from this study provide a usable toolkit where factors are summarised 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 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 of failure.

4. Conclusion and recommendations

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.

This study makes an important contribution to the literature by providing an integrated SME risk assessment model framework. The study has valuable implications which are theoretical, methodological and practical. Theoretical contributions include the integrated framework that has been developed, additional ESE element or growth dimension and relationships and effects confirmed between variables. Moreover, the categorisation of risk into two risk categories, three risk factors and multiple risk variables. The methodological contribution includes the statistical process applied to select risk variables, the measurement model that has been established and the factor structure that has been proposed. Lastly, the practical contribution includes the relationship and impact of various risk variables to SME success that has been quantified and their risk levels ranked based on effect size. All contribute substantially to the entrepreneurship studies that advocate for the integrated, interdisciplinary, holistic and multidimensional approach. The study's findings will add value in terms of deepening understanding of the South African entrepreneurial ecosystem and shows how different exogenous and endogenous elements in the ecosystem are interrelated and affected by each other.

By developing an integrated risk assessment model SME developers, funders and other interested stakeholders are able to accurately (quantitatively, objectively and holistically) assess the risks, as well as the likelihood of success of SMEs before interventions (financial or non-financial), are required. It is further anticipated that the revised model can improve the current funding

approval rate and reduce bad debt and failure rates of SMEs as it allows for the early elimination of high-risk enterprises.

The study findings also have practical implications for incubators and other SME agencies that provide training for entrepreneurs as the findings highlight the various forms of capital which mitigate risks. The study's findings could inform policymakers on what factors to focus on and formulate relevant legislation that allows entrepreneurs to mitigate risks and achieve business success. Moreover, the study is important in that it takes place within an African context, where traditionally entrepreneurship and SMEs have been viewed from a survivalist perspective and growth and success are often eschewed.

5.1. Recommendations

Considering after 20 years government interventions have not yielded the expected results when it comes to the development of small businesses in South Africa (Finscope, 2010) the need for an integrated framework to inform interventions is greatly needed. The findings concur with Smit and Watkins (2012) that SMEs 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 SMEs. Currently, the government has small business support organisations or agencies that work in silos. Each of these agencies focuses on addressing one or two factors that affect SMEs, but these agencies are not connected and as a result, fail to complement one another so they can be able to support SMEs holistically (DTI, 2008). The present study highlights that government needs to start looking at creating policies that encourage a holistic approach when supporting SMEs (Rampersad, 2016). It is recommended that the government should start developing policies that will encourage integrating financial and non-financial support in support of entrepreneurs. Developmental and support programs could adopt a three-dimensional model integrating the environment, firm and entrepreneur, similar to this study.

5.2. Future research and limitations

The study has some limitations which include: 1) The sample was dominated by repsondents from two provinces namely, Gauteng and Western Cape which might pose a challenge when generalising to poor provinces like Eastern Cape and Limpopo. 2) 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 framework. Consequently, the present model must be used as a basic framework to develop a full model which captures additional variables. 3) The sample frame produced a sample that was dominated by educated entrepreneurs (postgraduates). This could bias the findings, and thus generalisation beyond this sample has to be done with caution as such models tend to be context sensitive. 4) The study was a cross-sectional study and interpretation of the findings (effects and relationships) cannot infer causality with an acceptable level of confidence. 5) The data was collected using the same instrument and the 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 with this limitation in mind. 6) Lastly, the exogenous risk factor was based on the perception of entrepreneurs, future research should introduce variables that assess the dynamism of the environment and include more variables from both the firm and the entrepreneur. Future research needs to realise that banks perceive SMEs as a "distinct kind of client with specific needs and peculiarities that require risk-assessment tools and methodologies specifically developed for them" (Edward I. Altman, Sabato, & Wilson, 2010, p. 2). Consequently, by building on and extending the present study model scholars can address this challenge and develop more complicated risk assessment models with higher predictive power. Finally, it is recognised that no single model can capture all the diversity and complexity of entrepreneurship, but like any other model, it is a simple abstraction from a very complicated reality which requires further research to capture as much as practically is possible given the complex nature of entrepreneurship.

Biographical Notes

Dr Jabulile Msimango-Galawe is a lecturer in Entrepreneurship at Wits Business School, South Africa. She holds a PhD in Entrepreneurship and an M.S.C in Mathematical Statistics - Risk analysis from the University of the Witwatersrand and the University of the Free State respectively. Her research interest is on the development and sustainability of small businesses which includes risk assessment of SMMEs.

Prof Boris Urban has more than 30 years of academic and professional experience in business, where he has practiced, taught and researched, organisational behaviour, strategy and entrepreneurship. Boris is currently a professor at the Graduate School of Business (WBS), University of Witwatersrand and was the inaugural Chair in Entrepreneurship at Wits. Boris's academic studies are

positioned in Management where he holds a Ph.D (UP). His primary research agenda is to expand knowledge within a unified explanatory structure to deepen understanding of entrepreneurial behaviour at the individual, organisational and societal levels.

References

Abor, J., & Quartey, P. (2010). Issues in SME development in Ghana and South Africa. *International Research Journal of Finance and Economics*, 39(6), 215-228.

Acedo, F. J., & Florin, J. (2006). An entrepreneurial cognition perspective on the internationalization of SMEs. *Journal of International Entrepreneurship*, 4(1), 49-67.

Akinyemi, F., & Adejumo, O. (2017). Entrepreneurial Motives and Challenges of SMEs Owners in Emerging Economies: Nigeria & South Africa. *Small*, 10, 50.

Altman, E. I., & Sabato, G. (2007). Modelling credit risk for SMEs: Evidence from the US market. *Abacus*, 43(3), 332-357.

Altman, E. I., Sabato, G., & Wilson, N. (2010). The value of non-financial information in small and medium-sized enterprise risk management. *The Journal of Credit Risk*, 6(2), 1-33.

Autio, E., & Acs, Z. (2007). Individual and country-level determinants of growth aspiration in new ventures. *Frontiers of Entrepreneurship Research*, 27(19), 2.

Bakar, M. S., Bin Ramli, A., Ibrahim, N. A., & Muhammad, I. G. (2017). Entrepreneurial self-efficacy dimensions and higher education institution performance. *International Journal of Management Studies,* 24(1), 119-137.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122.

Bandura, A. (1994a). Self-efficacy: Wiley Online Library.

Bandura, A. (1994b). Social cognitive theory and exercise of control over HIV infection. In *Preventing AIDS* (pp. 25-59): Springer.

Bandura, A. (2006). Guide for constructing self-efficacy scales. Self-efficacy beliefs of adolescents, 5(307-337).

Bandura, A. (2012). On the functional properties of perceived self-efficacy revisited. *Journal of Management*, 38(1), 9-44.

Baum, J. R., Locke, E. A., & Smith, K. G. (2001). A multidimensional model of venture growth. *Academy of Management Journal*, 44(2), 292-303.

Beck, T. (2007). Financing constraints of SMEs in developing countries: Evidence, determinants and solutions. Paper presented at the KDI 36th Anniversary International Conference.

Beck, T., & Demirguc-Kunt, A. (2006). Small and medium-size enterprises: Access to finance as a growth constraint. *Journal of Banking & Finance*, 30(11), 2931-2943.

Bera, A. (2009). Characteristics and Categories of Risk in the Small Enterprises. *Współczesna Ekonomia*, 3(4), 123-129.

Biggs, T., & Shah, M. K. (2006). African small and medium enterprises, networks, and manufacturing performance: The World Bank.

Botha, M., van Vuuren, J. J., & Kunene, T. (2015). An integrated entrepreneurial performance model focusing on the importance and proficiency of competencies for start-up and established SMEs. *South African Journal of Business Management*, 46(3), 55-65.

Boubala, H. G. O. (2010). Risk management of SMMEs. (Master of Technology: Internal Auditing Master of Technology), Cape Peninsula University of Technology, Cape Town.

Brinckmann, J., Grichnik, D., & Kapsa, D. (2010). Should entrepreneurs plan or just storm the castle? A meta-analysis on contextual factors impacting the business planning–performance relationship in small firms. *Journal of Business Venturing*, 25(1), 24-40.

Brink, A., Cant, M., & Ligthelm, A. (2003, 2003). Problems experienced by small businesses in South Africa. Paper presented at the 16th Annual conference of small enterprise association of Australia and New Zealand, Ballarat Australia.

Brockman, B. K., Jones, M. A., & Becherer, R. C. (2012). Customer Orientation and Performance in Small Firms: Examining the Moderating Influence of Risk-Taking, Innovativeness, and Opportunity Focus. *Journal of Small Business Management*, 50(3), 429-446.

Bruton, G. D., Ahlstrom, D., & Obloj, K. (2008). Entrepreneurship in emerging economies: Where are we today and where should the research go in the future. *Entrepreneurship Theory and Practice*, 32(1), 1-14.

Burns, W. J., Peters, E., & Slovic, P. (2012). Risk Perception and the Economic Crisis: A Longitudinal Study of the Trajectory of Perceived Risk. *Risk Analysis: An International Journal*, 32(4), 659-677.

Cassar, G. (2004). The financing of business start-ups. *Journal of Business Venturing*, 19(2), 261-283.

Chao, L. W., Szrek, H., Peltzer, K., Ramlagan, S., Fleming, P., Leite, R., Behrman, J. (2012). A Comparison of EPI Sampling, Probability Sampling, and Compact Segment Sampling Methods for Micro and Small Enterprises. *Journal of Development Economics*, 98(1), 94-107.

Chen, C. C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing*, 13(4), 295-316.

Christine, B. (1995). Risk Management for Small Businesses. *Risk Management* (00355593), 42(4), 120-120.

Cools, E., & Van den Broeck, H. (2007). Development and validation of the Cognitive Style Indicator. *The Journal of Psychology*, 141(4), 359-387.

Cooper, T., & Faseruk, A. (2011). Strategic risk, risk perception and risk behaviour: Meta-analysis. *Journal of Financial Management & Analysis*, 24(2), 20-29.

Costello, A. B., & Osborne, J. (2005). Best practices in exploratory factor analysis: four recommendations for getting the most from your analysis. *Practical Assessment, Research and Evaluation*, 10(7), 1-9.

Creswell, J. W. (2012). Qualitative inquiry and research design: Choosing among five approaches. Thousand Oaks, CA.: Sage.

Danielsson, J., & Shin, H. S. (2003). Endogenous risk. London School of Economics: Risk Books.

Demir, H., & Bostanci, B. (2010). Decision-support analysis for risk management. *African Journal of Business Management*, 4(8), 1586-1604.

DTI. (2008). Annual review of small business in South Africa 2005-2007. Retrieved from Everett, J., & Watson, J. (1998). Small Business Failure and External Risk Factors. *Small Business Economics*, 11(4), 371-390.

Fatoki, O., & Odeyemi, A. (2010). Which new small and medium enterprises in South Africa have access to bank credit? *International Journal of Business and Management*, 5(10), 128-136.

Field, A. (2000). Discovering statistic using SPSS for Windows. Londra: Sage Publication.

Field, A. (2013). Discovering statistics using IBM SPSS statistics: Sage.

Finscope. (2010). FinScope South Africa Small Business Survey 2010. In. Midrand: Finmark Trust.

Fuller, T., & Moran, P. (2001). Small enterprises as complex adaptive systems: a methodological question? *Entrepreneurship & Regional Development*, 13(1), 47-63.

Herrington, M., & Kew, J. (2014). Global Entrepreneurship Monitor South African 2013 Report. In.

Herrington, M., Kew, J., Kew, P., & Monitor, G. E. (2010). Tracking entrepreneurship in South Africa: a GEM perspective. Cape Town: Graduate School of Business, University of Cape Town.

Herrington, M., & Kew, P. (2016). South African Report 2015/16 - Is South Africa heading for an economic meltdown? In: University of Cape Town, Development Unit for new enterprise.

Herrington, M., Kew, P., & Mwanga, A. (2017). GEM South Africa Report 2016/2017. South Africa: Can small businesses survive in South Africa? In: Cape Town: University of Cape Town. https://www.gemconsortium.org/report/49833 (accessed August, 2018).

Howard, J. L., & Jawahar, I. M. (2002). Risk management for small business. *The Entrepreneurial Executive*, 7(2002), 95-114.

Kaiser, H. F. (1970). A second generation little jiffy. *Psychometrika*, 35(4), 401-415.

Kanniainen, V., & Leppämäki, M. (2009). Union power, entrepreneurial risk, and entrepreneurship. *Small Business Economics*, 33(3), 293-302.

Kaplan, S. (2011). Research in Cognition and Strategy: Reflections on Two Decades of Progress and a Look to the Future. *Journal of Management Studies*, 48(3), 665-695. doi:10.1111/j.1467-6486.2010.00983.x

Kaplan, S., & Garrick, J. B. (1981). On the quantitative definition of risk. *Society for Risk Analysis*, 1(1), 11-27.

Kennedy, J., & Tennent, B. (2006). Financial Management Practices in Small Businesses: Regional and Metropolitan. *Small Enterprise Research*, 14(1), 55-63.

Knight. (1921). Risk, uncertainty and profit. New York: Hart, Schaffner and Marx.

Levy, J. (1992). An introduction to prospect theory. *Political Psychology*, 13(2), 171-186.

Liu, H., Hou, J., Yang, P., & Ding, X.-h. (2011). Entrepreneurial orientation, organizational capability,and competitive advantage in emerging economies: Evidence from China. *African Journal of Business Management*,, 5(10), 3891-3901.

Makina, D., Fanta, A. B., Mutsonziwa, K., Khumalo, J., & Maposa, O. (2015). Financial Access and SME Size in South Africa.

Markman, G. D., & Baron, R. A. (2003). Person–entrepreneurship fit: why some people are more successful as entrepreneurs than others. *Human Resource Management Review*, 13(2), 281-301. doi:http://dx.doi.org/10.1016/S1053-4822(03)00018-4

Mason, C., & Brown, R. (2014). Entrepreneurial ecosystems and growth oriented entrepreneurship. Final Report to OECD, Paris, 1-38.

Mcvay, M. (1999). Measuring BDS performance - a summary framework. *Small Enterprise Development*, 10(2), 17-29. doi:10.3362/0957-1329.1999.015

Milana, E., Andersen, M. M., & Murdock, K. (2016). Framing Entrepreneurial Ecosystem on Campus: Conceptual and System Considerations. Paper presented at the RENT 2015.

Moroz, P. W., & Hindle, K. (2012). Entrepreneurship as a process: Toward harmonizing multiple perspectives. *Entrepreneurship Theory and Practice*, 36(4), 781-818.

Murmann, J. P., & Sardana, D. (2013). Successful entrepreneurs minimize risk. *Australian Journal of Management*, 38(1), 191-215.

Nabatanzi-Muyimba, A. K. (2015). Competitiveness of international new ventures in Uganda.

Nadkarni, S., & Barr, P. S. (2008). Environmental context, managerial cognition, and strategic action: an integrated view. *Strategic Management Journal*, 29(13), 1395-1427.

Naudé, W., Gries, T., Wood, E., & Meintjies, A. (2008). Regional determinants of entrepreneurial start-ups in a developing country. *Entrepreneurship and Regional Development*, 20(2), 111-124.

Ncube, M., Brixiova, Z., & Bicaba, Z. (2014). Skills and youth entrepreneurship in Africa: Analysis with evidence from Swaziland.

Norton Jr, W. I., & Moore, W. T. (2006). The Influence of Entrepreneurial Risk Assessment on Venture Launch or Growth Decisions. *Small Business Economics*, 26(3), 215-226.

Olawale, F., & Garwe, D. (2010). Obstacles to the growth of new SMEs in South Africa: A principal component analysis approach. *African Journal of Business Management*, 4(5), 729-738.

Palich, L. E., & Ray Bagby, D. (1995). Using cognitive theory to explain entrepreneurial risk-taking: Challenging conventional wisdom. *Journal of Business Venturing*, 10(6), 425-438.

Percy, W. S., Visvanathan, N., & Watson, C. (2010). Relationship marketing: Strategic and tactical challenges for SMEs. *African Journal of Business Management*, 4(13), 2596-2603.

Perry, S. C. (2001). The Relationship between Written Business Plans and the Failure of Small Businesses in the U.S. *Journal of Small Business Management*, 39(3), 201-208.

Podoynitsyna, K., Van der Bij, H., & Song, M. (2012). The role of mixed emotions in the risk perception of novice and serial entrepreneurs. *Entrepreneurship: Theory and Practice*, 36(1), 115-140.

Pooe, R. I. D., & Mafini, C. (2012). Business development challenges in a rural district municipality in South Africa: A case of Fezile Dabi district municipality. *The Southern African Journal of Entrepreneurship and Small Business Managemen*t, 5(2012), 89-109.

Rampersad, G. C. (2016). Entrepreneurial ecosystems: A governance perspective. *Journal of Research in Business, Economics and Management*, 7(3), 1122-1134.

Ramukumba, T. (2014). Overcoming SMEs challenges through critical success factors: A case of SMEs in the Western Cape Province, South Africa. *Economic and Business Review for Central and South-Eastern Europ*e, 16(1), 19.

Rauch, A., Wiklund, J., Lumpkin, G. T., & Frese, M. (2009). Entrepreneurial Orientation and Business Performance: An Assessment of Past Research and Suggestions for the Future. *Entrepreneurship Theory and Practice*, 33(3), 761-787. doi:10.1111/j.1540-6520.2009.00308.x

Ruzzier, M., AntonciC, B., Hisrich, R. D., & Konecnik, M. (2007). Human capital and SME internationalization: A structural equation modeling study. *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration*, 24(1), 15-29.

Seed Academy. (2017). The real state of entrepreneurship survey. Retrieved from Shane, S., Locke, E. A., & Collins, C. J. (2003). Entrepreneurial motivation. *Human Resource Management Review*, 13(2), 257-279. doi:http://dx.doi.org/10.1016/S1053-4822(03)00017-2

Singer, S., Amorós, J. E., & Arreola, D. M. (2015). Global entrepreneurship monitor: 2011 global report: London Business School.

Sitkin, S. B., & Pablo, A. L. (1992). Reconceptualizing the determinants of risk behavior. *Academy of Management Review*, 17(1), 9-38.

Sitkin, S. B., & Weingart, L. R. (1995). Determinants of risky decision-making behavior: A test of the mediating role of risk perceptions and propensity. *Academy of Management Journal*, 38(6), 1573-1592.

Smit, Y., & Watkins, J. A. (2012). A literature review of small and medium enterprises (SME) risk management practices in South Africa. *African Journal of Business Management*, 6(21), 6324-6330.

Stenholm, P., Acs, Z. J., & Wuebker, R. (2013). Exploring country-level institutional arrangements on the rate and type of entrepreneurial activity. *Journal of Business Venturing*, 28(1), 176-193.

Teng, H. S. S., Bhatia, G. S., & Anwar, S. (2011). A success versus failure prediction model for small businesses in Singapore. *American Journal of Business*, 26(1), 50-64.

Urban, B. (2006). Entrepreneurial self-efficacy in a multicultural society measures and ethnic differences. *South African Journal of Industrial Psychology*, 32(1), 2-10.

Urban, B. (2012). Researching entrepreneurship from a cognitive perspective-A focus on necessity entrepreneurs in the johannesburg area. *African Journal of Business Management*, 6(48), 11732-11742.

Urban, B. (2018). The influence of the regulatory, normative and cognitive institutions on entrepreneurial orientation in South Africa. *The International Journal of Entrepreneurship and Innovation*, 1465750318796721.

Urban, B., & Hwindingwi, R. (2016). The influence of institutional factors on MNC's triple bottom-line reporting: A focus on African emerging markets (AEMs). *International Journal of Emerging Markets*, 11(4), 497-513.

Van Burg, E., & Romme, A. G. L. (2014). Creating the future together: Toward a framework for research synthesis in entrepreneurship. *Entrepreneurship Theory and Practice*, 38(2), 369-397.

Vecchio, R. P. (2003). Entrepreneurship and leadership: common trends and common threads. *Human Resource Management Review,* 13(2), 303-327. doi:http://dx.doi.org/10.1016/S1053-4822(03)00019-6

Vos, E. (1992). A Conceptual Framework for Practical Risk Measurement in Small Businesses. *Journal of Small Business Management*, 30(3), 47-56.

Wiklund, J. (2006). The sustainability of the entrepreneurial orientation–performance relationship. Entrepreneurship and the growth of firms, 141-155.

Wiklund, J., Patzelt, H., & Shepherd, D. A. (2009). Building an integrative model of small business growth. *Small Business Economics*, 32(4), 351-374.

Wiklund, J., & Shepherd, D. (2003). Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses. *Strategic Management Journal*, 24(13), 1307-1314.

Yallapragada, R. R., & Bhuiyan, M. (2011). Small Business Entrepreneurships In The United States. *Journal of Applied Business Research*, 27(6), 117-122.

Zahra, A., Fahimeh, Z., & Kambeiz, T. (2012). Exploring the Effect of Individual Factors on Business Failure in Iranian New Established Small Businesses. *International Business Research*, 5(4), 1-11.

Zikmund, W. (2003). Business research methods 7th ed., Thomson/South-Western. In: Appendices.

Appendix A

Table 3: Multiple Linear Regression – No Control Variables

Model Summary [b]

Model	R	R squared	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.610 [a]		.361	.77773	2.221

a. Predictors: (Constant), RP, ESE_G, FC, ESE_M, ESE_F

b. Dependent Variable: BS_F

ANOVA[a]

Model	Sum of Sqaures	df	Mean Square	F	Sig.
1 Regression	99.898	5	19.980	33.031	.000 [b]
Residual	168.759	279	.605		
Total	268.657	284			

a. Dependent Variable: BS_F

b. Predictors: (Constant), RP, ESE_G, FC, ESE_M, ESE_F

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error				Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)	.016	.323		.049	.961	-.619	.651		
FC	.397	.046	.441	8.687	.000	.307	.488	.874	1.145
ESE_M	.113	.067	.089	1.697	.091	-.018	.245	.815	1.227
ESE_F	.090	.058	.084	1.559	.120	-.024	.203	.771	1.297
ESE_G	.224	.061	.200	3.698	.000	.105	.344	.769	1.300
RP	.118	.063	.091	1.876	.062	-.006	.243	.962	1.039

a. Dependent Variable: BS_F

TABLE 4: BACKWARD ELIMINATION- ESE_F REMOVED

Coefficients[a]

Model		Un standardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.016	.323		.049	.961	-.619	.651		
	FC	.397	.046	.441	8.687	.000	.307	.488	.874	1.145
	ESE_M	.113	.067	.089	1.697	.091	-.018	.245	.815	1.227
	ESE_F	.090	.058	.084	1.559	.120	-.024	.203	.771	1.297
	ESE_G	.224	.061	.200	3.698	.000	.105	.344	.769	1.300
	RP	.118	.063	.091	1.876	.062	-.006	.243	.962	1.039
2	(Constant)	.156	.311		.501	.617	-.456	.767		
	FC	.416	.044	.461	9.368	.000	.328	.503	.934	1.071
	ESE_M	.133	.066	.105	2.023	.044	.004	.262	.845	1.184
	ESE_G	.248	.059	.221	4.218	.000	.132	.364	.822	1.217
	RP	.106	.063	.081	1.686	.093	-.018	.229	.978	1.022

a. Dependent Variable: BS_F

TABLE 5: HIERACHICAL REGRESSION MODEL - COEFFICIENTS

		Unstandardized Coefficients	Standardized Coefficients				95.0% Confidence Interval for B	
Model		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