Facilitating high growth enterprises through seed stage investing in South Africa

A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in Entrepreneurship and New Venture Creation

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ABSTRACT:

This research finds its theoretical roots in the theory of the firm growth and focuses on high growth entrepreneurship. Entrepreneurial orientation and venture capital funding also become central to the research particularly with regards to the identification of high growth enterprises (HGEs) and understanding their employment creation in the South African context.

The motivation of the research was sparked by emerging research in high growth enterprises specifically with regards to how they can provide a solution to unemployment.

The research aims to understand high growth enterprises regarding identification and employment growth and to determine if bridging the seed stage gap in South Africa will facilitate the growth of high growth enterprises.

The research employed a quantitative cross-sectional design with the founders of Small, Medium and Micro Enterprises (SMMEs) as the unit of analysis.

The main findings of the research are that high growth enterprises (HGEs) in South Africa create a significant amount of jobs compared to non-high growth enterprises (non-HGEs). Entrepreneurial orientation significantly determines whether enterprises will become HGEs or not and substantially drives the employment growth of HGEs. Most HGEs in South Africa have funded themselves and use equity instruments at seed stage showing that there is a need to bridge the equity seed capital gap in South Africa. Venture capitalists through their selection criteria can add more credibility to HGEs resulting in increased access to resources and employment creation. The selection criteria of venture capitalists alone cannot predict which enterprises will be HGEs. Value-adding activities of venture capital firms have not benefited many firms in South Africa due to the niche and nascent nature of the venture capital eco-system.

These findings imply that the entrepreneurial orientation must be used to identify high growth enterprises and the equity seed stage gap in South Africa must be bridged.

The research significantly contributes to the understanding of high growth enterprises regarding identification and employment creation.

Key words: high growth entrepreneurship; entrepreneurial orientation; seed capital; venture capital;

DECLARATION

I, ___Mmathebe Zvobwo_____, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the Field of Entrepreneurship at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Mmathebe Zvobwo

Signed at JOHANNESBURG

On the 22 Day of June 2018.

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LIST OF ACRONYMS

CFA	Confirmatory Factor Analysis
EFA	Exploratory Factor Analysis
EO	Entrepreneurial orientation
HGEs	High growth enterprises
non-HGEs	non-high growth enterprises
RBV	Resource Based View
SAVCA	Southern African Venture Capital and Private Equity Association
SMMEs	Small, Very Small, Medium and Micro Enterprises
VC	Venture capital
VCs	Venture capital firms

CHAPTER 1: INTRODUCTION

1.1 Introduction

South Africa persists to have high unemployment even as an investment in entrepreneurship remains a strategic National Development Plan pillar (National Planning Commission, 2012).

High growth enterprises (HGEs) may provide the solution to employment creation (Audretsch, 2012). However, HGEs require investment at all stages of development, namely seed, start-up, growth, and development (Audretsch, 2012). A gap in seed stage investing in South Africa has been identified in literature (Aspen Network of Development Entrepreneurs, 2015; Herrington & Kew, 2016). This research will aim to understand the properties of high growth enterprises in the South African context; their contribution to employment and whether there is a case for bridging the seed stage investment gap in South Africa such that a conducive environment is created for more HGEs.

1.2 Theoretical background to the study

This research has its theoretical roots at the nexus of high growth entrepreneurship, entrepreneurial orientation, venture capital finance and the theory of the growth of the firm.

1.2.1 *High growth entrepreneurship*

High growth entrepreneurship is concerned with a breed of enterprises that grow their revenue quickly (an average of 20% per annum) over a period (3 years) and have a potential for high job creation (Audretsch, 2012; Goedhuys & Sleuwaegen, 2010). Policy-makers have been concerned with creating a conducive environment for employment creation (Organisation for Economic Co-operation and Development, 1997). Small businesses, in general, have been found to create the most employment in countries in both developing and developed countries (Goedhuys & Sleuwaegen, 2010). High growth enterprises have

therefore become of interest regarding their rapid revenue growth, and most importantly for policy-makers, their ability to create employment on an exponential basis. Initially, researchers aimed to understand high growth enterprises by quantifying revenue growth and job creation over a period of years (Organisation for Economic Co-operation and Development, 1997). High growth entrepreneurship is fundamentally concerned with growth and navigating a path through growth (Delmar, Davidsson, & Gartner, 2003). Penrose (1959) shows that for firms to grow, they need to navigate through the stages of growth to overcome challenges brought about by this process. Researchers began by understanding the relationship, by way of regression, of how the size and age of enterprises affect their growth (Organisation for Economic Co-operation and Development, 2007). This progressed to other researchers focussing on the characteristics of high growth enterprises (Audretsch, 2012). Still, other researchers began to explore the characteristics of high growth enterprises in developing countries (Goedhuys & Sleuwaegen, 2010). These researchers aimed to understand the characteristics of high growth enterprises with reference to their founding and management teams (Audretsch, 2012; Goedhuys & Sleuwaegen, 2010). High social capital; human capital; possession of new knowledge; high innovation; access to financial capital; and international market orientation have been found to be attributes that founding members of high growth enterprises possess (Audretsch, 2012). Other researchers also began to understand how constructs such as entrepreneurial orientation play a role in high growth enterprises (Wiklund & Shepherd, 2005). This research will aim to understand high growth enterprises in the context of South Africa concerning characteristics of their founding and management teams mentioned above.

1.2.2 *Entrepreneurial orientation*

Entrepreneurial orientation (EO) generally refers to the strategic decision-making processes and approach of the firm and is closely related to the management research domain (Edmond & Wiklund, 2010). Over 100 empirical studies have been conducted including a meta-analysis of the relationship between EO and performance (Edmond & Wiklund, 2010). An early publication dates to Mintzberg's article in 1973 in which he identified the entrepreneurial mode as one

of the three methods of decision-making. Since then, definitions of entrepreneurial orientation and measurement models have been developed by researchers. Miller (1983) defined entrepreneurial orientation concerning the firm activity and processes as opposed to the entrepreneur. However, Miller (1983) differentiated between different types of firms, including, the simple and planning firm. The simple firm is small, and therefore decision-making is concentrated at the top which means that the entrepreneurial orientation of the firm can be determined concerning its leader (Miller, 1983). The planning firm is large, and therefore decision-making is done through processes and controls which means that entrepreneurial orientation can be established concerning the planning firm's processes and controls (Miller, 1983). This research primarily focuses on small firms, and therefore entrepreneurial orientation is determined concerning the leaders or founders of those firms. Miller (1983) developed a measurement model for EO consisting of innovativeness, risk-taking, and proactiveness. This model was later validated and refined into a 9-item measurement model by Covin and Slevin in 1986 and 1989 (Edmond & Wiklund, 2010). There are, however, two schools of thought regarding the measurement of EO (Edmond & Wiklund, 2010). One school follows the refined model of measuring EO as a composite and reflective construct consisting of innovativeness, risk-taking, and proactiveness which was later known as the Miller/Covin and Slevin model (Jefferey G. Covin & Wales, 2012). The other school of thought is a model developed by Lumpkin and Dess (1996) that measures entrepreneurial orientation as a multidimensional formative construct consisting of innovativeness, risk-taking, proactiveness, autonomy, and competitive aggressiveness (Edmond & Wiklund, 2010). The former implies that for an organisation to possess EO, all elements must exist and covary positively (Edmond & Wiklund, 2010). The latter model implies that not all elements of EO must exist and covary positively for EO to exist. However, the latter model has not been widely used (Edmond & Wiklund, 2010). Research on entrepreneurial orientation has been with regards to firm performance; however new research has emerged in linking EO to international performance through developing International EO and taking more of a configurational approach (Edmond & Wiklund, 2010).

Wiklund and Shepherd (2003) placed entrepreneurial orientation within the Resource Based View (RBV) domain. The RBV is concerned with how enterprises gain competitive advantage through their resources (Alvarez & Busenitz, 2001). According to Alvarez and Busenitz (2001) for RBV to hold, the firm's resources must be heterogeneous (diverse such as financial and knowledge resources); their heterogeneity must be preserved (ex-post competition); have causal ambiguity (inimitable); and have imperfect factor mobility (strong tacit dimension and socially complex). Wiklund and Shepherd (2003) argue that EO is strongly related to organising these resources and that this relationship has a positive relationship with firm performance. Alvarez and Busenitz (2001) link RBV and the entrepreneurship domain by focusing on cognition. According to Alvarez and Busenitz (2001), "Entrepreneurs have individual-specific resources that facilitate the recognition of new opportunities and the assembling of resources for the venture" (p. 121). Alvarez and Busenitz (2001) and Wiklund and Shepherd (2003) seem to agree that the entrepreneur has a specific cognition that allows him/her to recognise the opportunity, organise resources into a firm and then create heterogenous outputs that lead the firm to superior performance.

Figure 1 below shows the timeline of the development of entrepreneurial orientation with its most notable researchers.

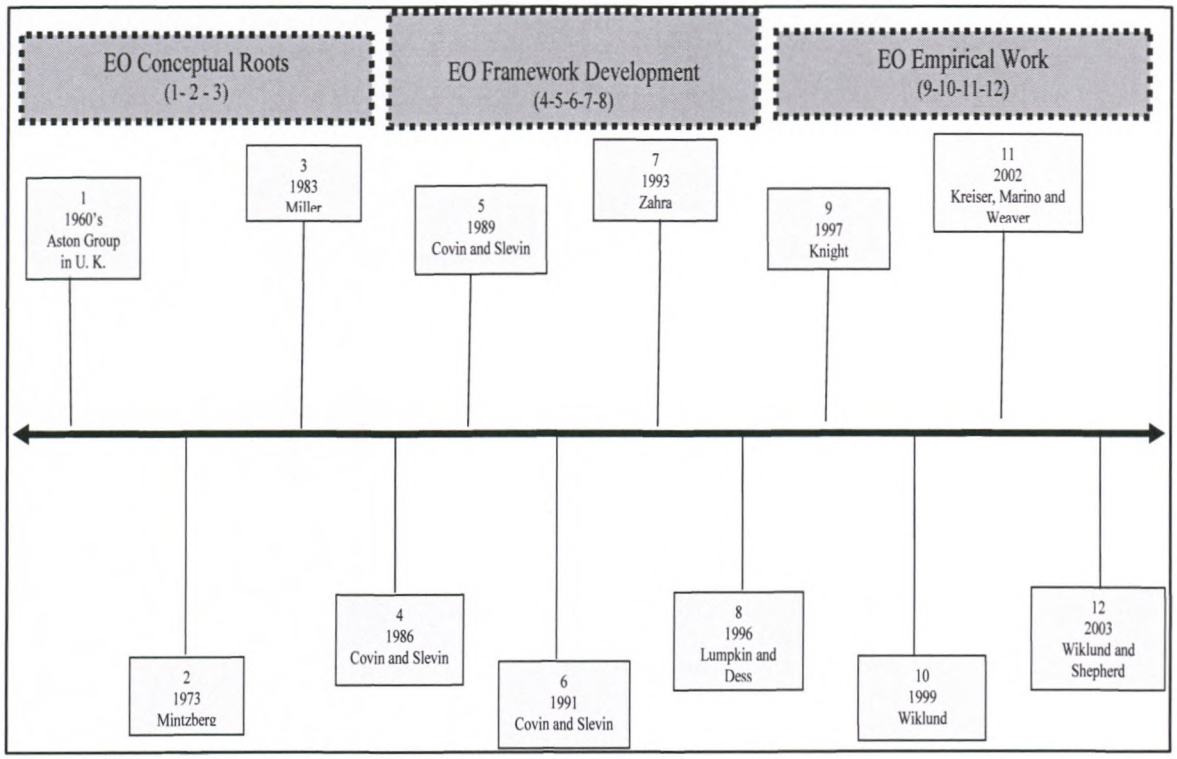


Figure 1: The Timeline of entrepreneurial orientation Research

(Edmond & Wiklund, 2010, p. 30)

1.2.3 *Venture capital finance and the theory of the growth of the firm*

Venture capital finance has emerged as one of the primary enablers of high growth enterprises (Audretsch, 2012). Some researchers have attributed this to the effect of Signalling Theory in that by funding a particular business; venture capitalists demonstrate a belief in the growth of that business which makes available other resources and human capital in the form of employees (Proksch et al., 2016).

The selection criteria of and the value-adding activities of venture capitalists have also been attributed to the identification of high growth enterprises and the acceleration of their growth by researchers (Kumar, 2015; Marsh Africa, 2013; Elango, Fried, Hisrich, & Polonchek, 1995).

However, venture capital finance entails funding at different stages of the enterprise which closely mimic the enterprise growth stage of development

(Elango et al.,1995). Penrose (1959) postulated the theory of the growth of the firm which views the growth of an enterprise as a process. Various researchers including (Garnsey, 1998) have built on the theory. Essentially enterprises for economic purposes consist of identifying opportunities and matching resources to create value (Garnsey, 1998). Thus, an enterprise follows sequential phases from inception to growth: firms must access resources, mobilise and deploy these resources before they can generate resources for growth (Garnsey, 1998). Subsequent phases include growth reinforcement and potential growth reversal particularly for a minority of firms which are the primary job creators (Garnsey, 1998). Each stage presents a set of problems that must be overcome to move successfully to the next stage and the growth of the firm is thus related to building certain competencies to respond to industrial opportunities that are constantly changing (Garnsey, 1998). Venture capitalists can provide access to resources and assist in building competencies at each stage or phase of development of the enterprise (Elango et al., 1995).

1.2.4 *Theoretical Framework and variables*

In this study, high growth enterprises are the dependent variable while the characteristics of the founding members, entrepreneurial orientation, the selection criteria of venture capital firms, and the value-adding activities of venture capital firms are the independent variables.

This research, therefore, uses inferential statistics to quantify:

- the relationship between founder characteristics, product, market, and high growth enterprises;
- the relationship between entrepreneurial orientation and high growth enterprises;
- the relationship between the selection criteria of venture capital firms and high growth enterprises; and
- the relationship between the value-adding activities of venture capital firms and high growth enterprises.

1.3 Context of the study

High unemployment is amongst the primary challenges highlighted in South Africa. In the third quarter of 2017, South Africa had an unemployment rate of 27.7% which is the highest in 13 years (Moya, 2017; Statistics South Africa, 2017).

Research shows that high growth enterprises have a significant impact on economic growth and job creation (Organisation for Economic Co-operation and Development, 2007).

Audrestch (2012) analysed the impact of high growth enterprises on job creation and found that high growth enterprises contributed the most to new jobs created.

One of the key determinants linked to stimulating high growth enterprises is the ability to access financial capital, particularly venture capital funding (Audretsch, 2012).

Venture capital (VC) is defined by the Southern African Venture capital and Private Equity Association (2015) as, "A subset of the private equity class, which deals with predominantly equity funding of high-tech, high-growth-potential businesses whose growth is achieved typically through radical global scaling" (p. 4).

There are four stages of venture capital funding: seed capital, start-up capital, development capital and growth capital (Southern African Venture capital and Private Equity Association, 2015). Private venture capital fund managers in South Africa do not fund the seed capital stage (Southern African Venture capital and Private Equity Association, 2015). This creates a funding gap in the venture capital market in South Africa.

The gap in seed/ideation stage has also been highlighted by the Aspen Network of Development Entrepreneurs (Aspen Network of Development Entrepreneurs, 2015) in Figure 2.

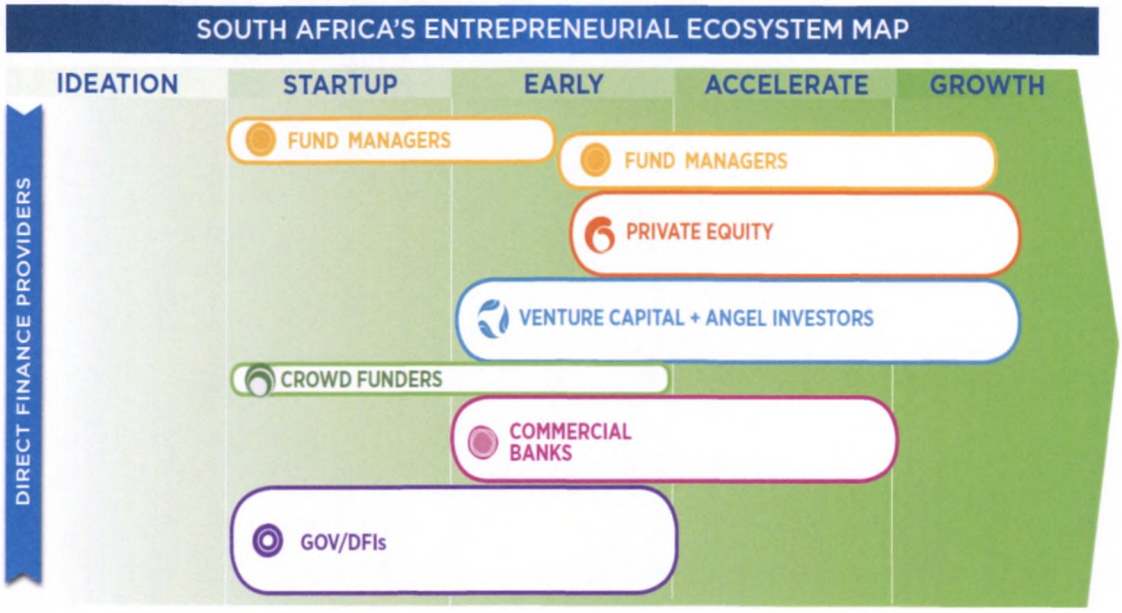


Figure 2: The Entrepreneurs Eco-system in South Africa

(Aspen Network of Development Entrepreneurs, 2015, p. 12)

Access to finance has been highlighted as one of the critical challenges facing Small, Very Small, Medium and Micro Enterprises (SMMEs) in South Africa (Bureau for Economic Research, 2016). South African Banks and lenders tend to invest in SMMEs in a later stage of their development, and typically not at seed stage (Bureau for Economic Research, 2016).

The Global Entrepreneurship Monitor (2016) found that access to finance was part of the top three constraints to entrepreneurship in South Africa with 44% of respondents confirming it (Herrington & Kew, 2016). Government policy is the number one constraint to entrepreneurship according to 61% of respondents and education, and training follows access to finance at number three with 42% of respondents confirming it (Herrington & Kew, 2016).

The value-adding activities of seed institutions along with seed capital can overcome two of the top three constraints to entrepreneurship as reported by the Global Entrepreneurship Monitor (GEM) report.

The South African venture capital (VC) industry compared to international Venture capital industries in emerging markets such as China is still in the nascent stage. The South African VC industry has total invested funds of

R1.87bn or USD 124 million in 2015 (Southern African Venture capital and Private Equity Association, 2015) compared to China with total invested funds of USD31 billion (Soo, 2017).

In a nascent VC market, research shows that government can play a role in developing seed stage VC and therefore the entire venture capital eco-system (Balazs, 2014).

1.4 Problem statement

1.4.1 *Main problem*

Potential high growth enterprises (HGEs) may fail to transition to HGEs due to the lack of patient seed capital and value-adding activities at the seed stage of their lifecycle. This means that businesses that would contribute significantly regarding employment do not receive the support they require at the seed stage.

1.4.2 *First sub-problem*

The first sub-problem is that there is very little research in a South African context regarding high growth enterprises and how they contribute towards job creation. As such, policy-makers and the entire entrepreneurship eco-system cannot fully identify high growth enterprises and understand their contribution regarding job creation. Also, the policy interventions, incubation and funding mechanisms require more research in to support high growth enterprises more effectively.

1.4.3 *Second sub-problem*

The second sub-problem is that there is a gap in the South African VC market regarding seed capital funding and value-adding activities. The seed stage gap results in few high growth enterprises progressing to the next stage of development due to lack of access to financial resources. The value-adding activities are necessary to accelerate the growth of enterprises, particularly at the

seed stage. The seed stage gap means that few enterprises have access to these value-adding activities that are essential to their growth.

1.5 Research purpose, research question and aims of the study

The purpose of this research is to understand the contribution of high growth enterprises in terms of employment creation in South Africa as well as to examine whether seed capital investing and value-adding activities help transition potential high growth enterprises to achieve exponential growth.

The research employs a quantitative research method which aims to test theories postulated by researchers in high growth entrepreneurship, venture capital finance, and growth of firms (Audretsch, 2012; Goedhuys & Sleuwaegen, 2010; Marsh Africa, 2013). Through inferential statistics, the research can generalise findings of sampled respondents to the broader South African context (Bryman & Bell, 2017).

The research is primarily concerned with the question of how to facilitate the growth of more high growth enterprises through seed stage investing in South Africa.

The research aims to understand the characteristics of high growth enterprises (HGEs) in the South African context and how they have contributed to employment. The research will also understand how seed capital and its value-adding activities are better able to transition potential high growth enterprises to high growth enterprises.

The research questions can be summarised as follows:

Research Question 1: Are there characteristics that can predict an enterprise being a high growth enterprise?

Research Question 2: What drives the employment growth of high growth enterprises?

Research Question 3: Can the selection criteria of venture capital firms predict high growth enterprises?

Research Question 4: What is the impact of value-adding activities on the employee growth of enterprises?

1.6 Conceptual/theoretical definition of terms

1.6.1 *High growth enterprises (HGEs)*

This is a class of enterprises that have achieved an average revenue growth rate of 20% per annum over three years (Audretsch, 2012). They may be small, medium or large.

1.6.2 *Seed Capital*

This is a class of private equity investment that is done primarily at the seed stage of a company by an institution. In addition to the seed capital, the institution will provide the company with value-adding activities that can graduate the business to the next stage. Seed capital is typically used for product development, market research and proof of concept (Southern African Venture capital and Private Equity Association, 2015).

1.6.3 *Start-up capital*

The Southern African Venture capital and Private Equity Association (2015) defines Start-up Capital as, "Early funding used for setting up operations (hiring staff, renting office space, equipping the production system, and working capital), commercialising intellectual property, and other activities" (p. 7).

1.6.4 *Development capital*

The Southern African Venture capital and Private Equity Association (2015) defines Development Capital as, "Finance used after start-up capital to further

launch the business and to support growth in market share, to become profitable" (p. 7).

1.6.5 *Growth capital*

The Southern African Venture capital and Private Equity Association (2015) defines Growth Capital as, "Equity-type investments used to assist established but still high-risk ventures in expanding activity such as launching into foreign markets, creating new product/technology lines, accelerating production and acquiring competitors" (p. 7).

1.6.6 *Seed institution*

This is an institution that invests, by way of equity, in the seed stage of a business (Southern African Venture capital and Private Equity Association, 2015).

1.6.7 *Follow-on investments*

This is capital injected by venture capital fund managers in the form of Start-up Capital, Developmental Capital, and Growth (Southern African Venture capital and Private Equity Association, 2015).

1.6.8 *Private venture capital fund managers*

These are active venture capital funds that are registered with the Southern African Venture Capital and Private Equity Association (SAVCA) and exclude angel investors; and transactions where there is no equity component (Southern African Venture capital and Private Equity Association, 2015).

1.6.9 *Small, Very Small, Medium and Micro Enterprises (SMMEs)*

The National Small Business Act (102 of 1996) (1996) defines a small business as, "A separate and distinct business entity, including co-operative enterprises and non-governmental organisations, managed by one owner or more which, including its branches or subsidiaries, if any, is predominantly carried on in any

sector or subsector of the economy mentioned in column 1 of the Schedule and which can be classified as a micro-, a very small, a small or a medium enterprise by satisfying the criteria mentioned in columns 3; 4 and 5 of the Schedule opposite the smallest relevant size or class as mentioned in column 2 of the Schedule" (p. 2).

The Schedule of The National Small Business Amendment Act (26 of 2003) which classifies SMMEs has been included in **APPENDIX C** of this report.

1.7 Contribution of the study

The research will contribute towards the prediction of high growth enterprises by using regression to analyse the characteristics or properties of high growth enterprises. Policy-makers will benefit by developing a policy that creates a conducive environment for high growth enterprises and thereby contribute significantly to job creation. Investors and incubators will better understand the focus and impact of their selection criteria and value-adding activities on creating a conducive environment for high growth enterprises, particularly at Seed stage investment.

1.8 Delimitations of the study

The research focuses on SMMEs, as defined by the National Small Business Amendment Act (2003), operating within South Africa. The focus on SMMEs allows the study to understand the job creation made by SMMEs. Only the founders or management teams of SMMEs were invited to participate in the survey as they understood the entire dynamics of the enterprises.

The study aims to understand and explain the elements that drive the job creation of high growth enterprises and not necessarily to define high growth enterprises in the South African context.

The study is concerned explicitly with the seed stage investment gap within the South African venture capital eco-system and the case for bridging it.

2 CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The literature review defines high growth enterprises and explores their characteristics. Entrepreneurial orientation is explored as a possible driver of the job creation and high employment share of high growth enterprises. The presence of venture capital funding and its impact on the job creation of firms are explored. The selection criteria and value-adding activities of venture capital firms are explored as well as their effect on employment growth.

2.2 Literature background

In this section, a literature review is done that covers the definition of high growth enterprises (HGEs), their characteristics and their contribution towards job creation (Audretsch, 2012; Goedhuys & Sleuwaegen, 2010; Organisation for Economic Co-operation and Development, 2007). The literature review then explores research on the possible influence of entrepreneurial orientation (EO) on the performance of the firm (Edmond & Wiklund, 2010; Wiklund, 1999; Wiklund & Shepherd, 2005). Lastly, the literature review explores the role of Venture capital selection criteria and value-adding activities in nurturing HGEs from seed stage to growth stage (Elango et al., 1995).

2.3 Understanding high growth enterprises and their impact on job creation

High growth enterprises (HGEs) have been defined in similar yet different ways throughout literature. In other words, there is no single general definition of high growth enterprises. HGEs are nevertheless recognised as growing class of enterprises that have the potential of creating jobs on a large scale (Goedhuys & Sleuwaegen, 2010).

2.3.1 *Defining high growth enterprises*

Henrekson & Johansson (2010) conducted a meta-analysis of the empirical evidence that high growth enterprises or gazelles create the most significant net new employment based on 20 studies. Table 1 below provides various definitions of HGEs as per multiple scholars who studied the job creation impact of HGEs.

Table 1: Summary of studies of high growth enterprises and job impact

Study	Measure of Employment Growth	Regularity of Growth	Period	High Growth Enterprise Definition	Country	Industry	Main Result
Birch & Medoff (1994)	Absolute	Annual	1988 – 1992	A business establishment with ≥ 20% sales growth each year over the interval, and base-year revenue ≥ $100 000	USA	All	A small number (4%) of ongoing firms create a disproportionately large share of all new jobs in the USA (60%).
Kirchhoof (1994)	Relative	Between start and final year	1977 – 1978 to 1984	The 10% fastet growing firms in the investigated population	USA	Non-agricultural, private sector	4% of firms produce 75% of employment in studied cohorts.
Storey (1994)	Survey of 14 studies	Different	Different	Different	UK and one USA study	All	Approximately 4% of firms create approximately half the new jobs in studied firms.
Birch et al. (1995)	Absolute	Annual	1990 – 1994	A business establishment with ≥ 20% sales growth each year over the interval, and base-year revenue ≥ $100 000	USA	All	Gazelles account for all new jobs in economy.

(Henrekson & Johansson, 2010, p. 231)

Henrekson and Johansson (2010) concluded that high growth enterprises are few and are fast growing and generate a significant share of all new net jobs compared with non-high growth firms.

Although there is not one single definition of HGEs, their key components are the growth of revenue and employment over a specific period (Audretsch, 2012).

High growth enterprises are those that increase their revenue by an average revenue growth rate of 20% per annum over three years and with at least ten employees at the beginning of the observation period (Organisation for Economic Co-operation and Development, 2007).

Audrestch (2012) found that Bruederl and Preisendoerfer in their 2000 paper classified high growth enterprises in Germany as any firm that has survived for four years, grew revenue by 100% over the four year period and increased employment by at least five people over the same period.

There is very little research in South Africa about high growth enterprises. Consequently, the term high growth enterprise has not been defined in a South African context.

For this paper, the definition of high growth enterprises has been adopted in so far as it relates to revenue growth - a minimum of 20% per annum over three years (Organisation for Economic Co-operation and Development, 2007). This is because this research will be able to understand the employment creation of high growth enterprises in South Africa. Endeavor Insight has done a study that aims to understand scale-ups in South Africa. For its purpose, Bassil, Gonzales, Goodwin and Morris (2013) defined a scale-up as, "A firm that is more than three years old with an average annual employment growth rate greater than or equal to 20% during the previous three years" (p. 5). Bassil et al. (2013) show that "Scale-ups account for 13% of South Africa's total firms, but they have created 25% of the country's net new jobs during the three consecutive years, 2007 - 2010" (p. 5).

2.3.2 *Share of employment*

In developing economies, small mature firms (over 11 years old) contribute the most to the total employment in those economies (Ayyagari, Demirguc-Kunt, & Maksimovic, 2011). Figure 3 shows employment share of firms based on size and age from 99 countries including South Africa.

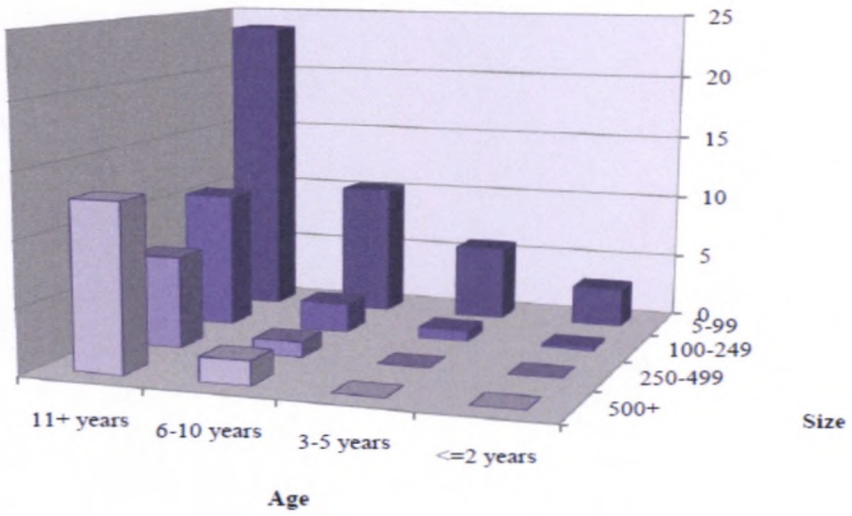


Figure 3: Share of employment of countries using age factors and size factors.

(Ayyagari, Demirguc-Kunt, & Maksimovic, 2011, p. 28)

Figure 3 shows that it is mature SMMEs (11+ years and 5-99 employees) that have the highest share of employment (23.7%) (Ayyagari et al., 2011). Large and young firms do not have much employment (Ayyagari et al., 2011).

2.3.3 *Job Creation*

Figure 4 below shows the share of enterprises' employment creation across firms based on size and age factors (Ayyagari et al., 2011). The data is collected on 81 countries including South Africa (Ayyagari et al., 2011).

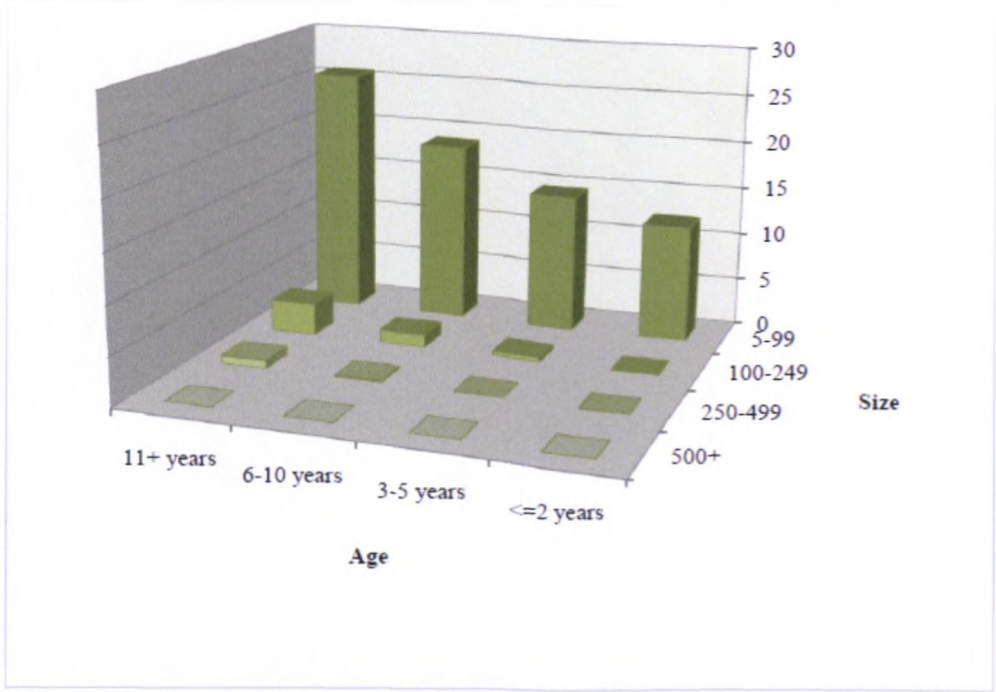


Figure 4: Creation of employment of countries using age and using size factors

(Ayyagari, Demirguc-Kunt, & Maksimovic, 2011, p. 28)

Figure 4 shows that small mature firms and small younger firms create jobs exponentially (Ayyagari et al., 2011) Large firms that are older do not create jobs significantly (Ayyagari et al., 2011). It was also found that even in economies that were losing jobs overall, small mature firms were creating jobs while large mature firms were losing jobs (Ayyagari et al., 2011).

In developing economies, size can significantly predict growth in employment when age is controlled for (Ayyagari et al., 2011). This has implications for policy regarding eradicating barriers faced by small businesses such as lack of access to finance. Even though small firms were growing faster than their larger counterparts regarding employment, they were not found to be more productive(Ayyagari et al., 2011).

2.3.4 *Job creation across countries*

The total share of employment created by SMMEs is broad across developing countries (Ayyagari et al., 2011). In Lesotho SMMEs have a total share of employment of 16.06% while smaller countries such as Angola have SMMEs total share of employment at 100% (Ayyagari et al., 2011).

In South Africa, Ayyagari, Demirguc-Kunt, and Maksimovic (2011) found that SMMEs with a maximum of 200 employees contributed to 53.98%. Young firms (below five years) contribute 10.77% of total employment while firms older than 21 years contribute to 54.6% of jobs (Ayyagari et al., 2011). Employment creation was the highest in SMMEs with a fulltime employees ranging from 5 to 250 collectively contributing 57.92% of new employment (Ayyagari et al., 2011).

The previous World Bank Enterprise Surveys showed that high growth enterprises constituted 20% of the enterprise population but created 25% of all new jobs in 3 years (Bassil et al., 2013).

Timm (2015) found that "Endeavor's jobs calculator estimates that 44 000 small high impact firms growing at a rate of 20% per year would be enough to create these 9.9 million jobs. It would take 7.4 million micro firms to create the same number of jobs" (p. 1).

2.3.5 *The characteristics of high growth enterprises*

May be few and create the largest share of employment: Applying Gilbrat's Law, firm growth follows a normal distribution curve and occurs randomly, the literature shows that high growth enterprises tend to occupy the end of the curve (Audretsch, 2012). High growth enterprises have the smallest number of firms of the total population of firms.

However, some studies reject Gilbrat's Law of random growth and instead look at specific factors through regression (Goedhuys & Sleuwaegen, 2010). These factors include size, age, innovation, entrepreneur characteristics and resources (Goedhuys & Sleuwaegen, 2010).

The relationship between size, age, and growth: Some studies are cited to have found a negative relationship between firm size and growth and variability of growth (Goedhuys & Sleuwaegen, 2010). The erratic growth small firms can be explained by small firms entering the Minimum Efficiency Scale (MES) that is dictated by the industry trends in technology. Small firms generally proliferate to reach the MES (Goedhuys & Sleuwaegen, 2010).

There is also a negative relationship between age and growth as well as between variability of growth and age (Goedhuys & Sleuwaegen, 2010). Smaller and younger firms grow faster than larger firms (Goedhuys & Sleuwaegen, 2010). However, the volatility in the growth rates of smaller and younger firms is higher than for larger firms (Goedhuys & Sleuwaegen, 2010).

The negative relationship between age-size and growth has also been tested in African firms and found to have held with a few exceptions in Ivory and Ethiopia (Goedhuys & Sleuwaegen, 2010).

There are however different studies that have found HGEs being much older regarding age and are bigger in terms of size (Audretsch, 2012).

There are not specific to one industry: high growth enterprises are found in any industry and that some industries may have a higher concentration of high growth firms than others (Audretsch, 2012).

The growth rates of new firms are greater for very high-tech industries than in high-tech industries and other manufacturing industries (Audretsch, 2012).

Characteristics of founding and management teams: Literature covering 20 African countries showed that highly educated entrepreneurs outperformed their uneducated counterparts (Goedhuys & Sleuwaegen, 2010).

High growth enterprises have highly skilled and highly educated founding entrepreneurs and management teams (Audretsch, 2012).

There is a wide range of entrepreneurship literature which describes the characteristics of successful entrepreneurs. The absorptive capacity, intelligence and cognitive abilities of entrepreneurs is connected to the

entrepreneur's ability to recognise the opportunity (Shane, 2003). The educational background, prior experience in the relevant industry, previous experience as an entrepreneur or working in an entrepreneurial start-up are essential indicators of growth (Audretsch, 2012). Experience as an employee in a high growth firm is also an important indicator (Audretsch, 2012).

The characteristics of founding team such as the stability of members, their time together, size of the team, diversity of team all influence firm growth (Audretsch, 2012).

New knowledge, innovation and research and development and intellectual property: Applying the Resource Based View (RBV), Research and Development activities raise competence and create opportunities for growth (Goedhuys & Sleuwaegen, 2010). However, innovation efforts in the early stage of a firm may be more difficult to translate into growth due to uncertainty and the time it takes to convert innovations into commercial products or services (Goedhuys & Sleuwaegen, 2010).

Consistent with the knowledge spillover theory of entrepreneurship, entrepreneurs found new firms with a view to exploiting the new knowledge that the incumbent firm is currently not exploring (Audretsch, 2012).

There is a wide range of literature concerning innovation and newness being central to entrepreneurship. Schumpeter in 1934 refers to newness being central to entrepreneurship and growth (Urban & Venter, 2015). The innovation may be due to a new product or a new service or a new method of production (Urban & Venter, 2015).

High growth enterprises tend to have more registered intellectual property including trademarks compared to their low growth counterparts (Audretsch, 2012).

Geroski and Toker (1996) found a positive relationship between innovation and sales growth in developed countries.

Innovation efforts in developing countries differ from developed countries in that the majority of developing countries use and adapt existing technologies (Goedhuys & Sleuwaegen, 2010).

Market orientation: local or international markets: The orientation of the enterprise towards international markets as well as the team's experience towards international markets positively affects firm growth (Audretsch, 2012). The orientation towards systemic versus local entrepreneurship will likely result in a positive influence in firm growth (Urban & Venter, 2015). Systemic enterprises operate on formal business relationships, wider geographic markets and their businesses are resourced for growth with appropriate skills (Urban & Venter, 2015). Local enterprises operate on personal business relationships, smaller geographic markets, and their businesses do not have the appropriate skills or resources to facilitate growth (Urban & Venter, 2015).

Human Capital and Social Capital: High growth enterprises have access to high human capital employees which enable management and owners to implement their goals (Audretsch, 2012).

Social Capital also allows entrepreneurs and their teams to access resources that they otherwise would not be able to access (Urban & Venter, 2015).

Goedhuys and Sleuwaegen (2010) found, "Human capital variables appear to be systematic variables affecting firm growth, especially in the many small African firms where the entrepreneur has a dominant role in the development of the firm" (p. 34).

Financial Capital: Small firms tend to not have access to credit due to their limited credit history (Audretsch, 2012). Literature has identified that those firms that are able to access capital exhibited higher growth rates.

high growth enterprises in the United Kingdom tend to rely on venture capital funding twice as much as those in the United States (Audretsch, 2012).

2.3.6 *Entrepreneurial orientation as a driver of employment creation of HGE's and the occurrence of HGEs*

a. *Defining entrepreneurial orientation*

Entrepreneurial orientation (EO) has been defined in many but similar ways (Jefferey G. Covin & Wales, 2012). Miller (1983) defines entrepreneurial orientation with reference to the firm as, "An entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with 'proactive' innovations, beating competitors to the punch" (p. 771). Covin and Slevin (1989) define EO as, "Entrepreneurial firms are those in which the top managers have entrepreneurial management styles, as evidenced by the firms' strategic decisions and operating management philosophies. Non-entrepreneurial or conservative firms are those in which the top management style is decidedly risk-averse, non-innovative, and passive or reactive" (p. 218). Lumpkin and Dess (1996) define EO as, "EO refers to the processes, practices, and decision-making activities that lead to new entry" as characterized by one, or more of the following dimensions: "a propensity to act autonomously, a willingness to innovate and take risks, and a tendency to be aggressive toward competitors and proactive relative to marketplace opportunities" (pp. 136–137).

According to Lumpkin and Dess (1996) innovativeness can be defined as, "A firm's propensity to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or processes" (p. 142). Miller and Friesen (1982) define risk-taking as, "The degree in which managers are willing to make large and risky resource commitments" (p. 923). Lumpkin and Dess (1996) define proactiveness as, "proactiveness refers to how a firm relates to market opportunities in the process of new entry. It does so by seizing the initiative and acting opportunistically to "shape the environment," that is, to influence trends and, perhaps, even create demand" (p. 147).

b. *The EO and Performance Relationship*

The positive relationship between EO and performance has been tested in many studies using various measures of performance including revenue growth and

employee growth (Edmond & Wiklund, 2010). The relationship between EO and performance was also tested in longitudinal studies in order to eliminate the temporal effect of cross-sectional studies and was found to hold (Wiklund, 1999). Wiklund (1999) showed that the positive relationship between EO and firm performance increased over time. Wiklund (1999) did not test true causality, but due to the time lag of measuring EO and performance outcomes, the research suggested causality.

Wiklund and Shepherd (2005) also found that entrepreneurial orientation has a positive influence on small business performance. The small business performance was measured both using financial data and employee growth (Wiklund & Shepherd, 2005). There is also a positive relationship between access to financial capital and small business performance (Wiklund & Shepherd, 2005). However, the researchers decided to take a configuration approach – that is to holistically consider all factors are influencing business performance together. The configuration approach examines the impact of entrepreneurial orientation, the business environment and access to financial capital on small business performance.

Specifically, Wiklund and Shepherd (2005) found that businesses that have limited access to financial capital, operating in a stable environment benefit most by adopting entrepreneurial orientation. The dynamism of the environment was measured using four items from Miller (1987) on measuring the environment dynamism. Although Wiklund and Shepherd (2005) studied 413 small businesses in Sweden, previous literature points in the direction of entrepreneurial orientation being beneficial for small business performance across different contexts and that it is beneficial in overcoming resource constraints.

Kraus, Rigtering, Hughes, and Hosman (2012) studied 164 Dutch SMMEs to determine what the relationship between entrepreneurial orientation and business performance during an economic crisis or during turbulent environments. They found that firms that were proactive performed better in an economic crisis and those that were innovative performed better in turbulent environments (Kraus et al., 2012). However, firms that were innovative should

minimise their risk-taking behaviour and avoid projects that are too risky (Kraus et al., 2012). Market turbulence was measured using a scale developed by Miller and Friesen(1982) that measures environmental dynamism, heterogeneity, and hostility (Kraus et al., 2012). Covin and Slevin (1989) found the scale satisfied validity and reliability. Business performance was measured using a 5-point Likert scale from Wiklund and Shepherd (2005) that includes employee growth (Kraus et al., 2012).

2.3.7 *Hypothesis 1:*

Hypothesis 1: There is a positive relationship between (a) Founding team experience and education, (b) access to Financial Capital, (c) international market orientation, and (d) new knowledge, and high growth enterprises.

2.3.8 *Hypothesis 2a and Hypothesis 2b:*

Hypothesis 2a: Entrepreneurial orientation, in terms of innovativeness, risk-taking and proactiveness, impacts the employment growth of high growth enterprises.

Hypothesis 2b: There is a positive relationship between the elements of entrepreneurial orientation and high growth enterprises.

2.4 Understanding how venture capital stimulates high growth enterprises

2.4.1 *Presence of VC and employee growth of SMMEs.*

Davila, Foster, and Gupta (2003) using Signalling Theory found that the receipt of a firm of venture capital funding increases the number of employees employed by that firm in months prior and after the funding event. The research was based on 494 employees of start-up firms mainly based in Silicon Valley (Davila et al., 2003). The findings were that employment headcount significantly correlates with company valuation and that employment growth could then be used as a proxy

for company valuation growth (Davila et al., 2003). The growth in the number of employees is higher in the month of a VC funding event and immediate subsequent months compared to months without funding event (Davila et al., 2003). Companies that had prior VC funding were growing faster than those that did not (Davila et al., 2003). Venture capital investors did not select firms to fund based on prior growth, but growth occurred once the Venture capital funding event occurred (Davila et al., 2003). The evidence of a relationship between growth and funding events may suggest that start-ups delay growth due to lack of financial capital (Davila et al., 2003).

2.4.2 *Venture capital selection Criteria*

Based on a study of venture capital firms (VCs), early-stage VCs placed more importance on the potential investee's unique product and the ability of the market to proliferate than late-stage VCs (Elango, Fried, Hisrich, & Polonchek, 1995). Late-stage investors place more importance in the demonstration by the entrepreneur that the product has been accepted by the market (Elango et al., 1995). All VC investors placed emphasis on the management characteristics and did not differ across stages (Elango et al., 1995).

Table 2 below shows how Venture capital firms at each stage rated (on a Likert scale of 5) the importance they place on their selection criteria and value-adding activities.

Table 2: Selection criteria and value-adding activities of Venture capital by Stage

	Earliest Stage Investor	Early-Stage Investor	Mixed-Group Investor	Late-Stage Investor	Test Results
Percent of Investments					
1. Seed stage	64.59	16.94	8.39	0.05	d
2. First round	21.62	50.92	24.80	0.00	d
3. Second round	6.53	26.33	21.36	1.31	d
4. Third round	0.00	4.12	17.46	26 52	
5. Leveraged buyout	2.69	0.62	13.37	57.84	d
6. Other financing	1.85	1.09	9.75	14.26	c
Average time spent when a lead investor (hrs/month)	22.78	20.69	18.64	15.79	
Investment Criteria					
The Entrepreneur(s):					
is capable of sustained intense effort	3.66	3.85	3.68	3.56	
is able to evaluate and react well to risk	3.50	3.45	3.47	3 67	
is articulate in discussing the venture	3.08	3.18	3.25	2.95	
has demonstrated leadership ability	3.43	3.30	3.57	3.62	
is thoroughly familiar with the market	3.70	3.55	3.72	3.56	
has a track record relative to the venture	2.96	3.00	3.16	3.28	
is ingenious	2.75	2.67	2.68	2.65	
The Product:					
is proprietary	3.58	3.24	3.02	2.53	d
is unique	3.60	3.06	2.88	2.28	d
The Market:					
enjoys a significant growth rate	3.62	3.43	3.35	2.78	c
The Investment:					
will return at least ten times my investment in 5-10 years	3.43	3.30	3.07	2.65	c
Hurdle rate required (IRR):	42.20	37.66	36.54	33.52	a
Importance of Services Provided:					
Evaluate management	4.82	4.63	4.51	3.95	b
Make introductions to potential customers and suppliers	3.53	3.68	3 37	2.06	c
Make introduction to potential service providers	3.00	3.06	3.11	2.42	a
Recruit mangement	4.50	4.28	3.89	3.24	c
Assist in operational planning	3.69	3.38	2.99	3.06	

(Elango, Fried, Hisrich, & Polonchek, 1995, p. 164)

This research uses the measurement model proposed by Elango et al., (1995) to measure the selection criteria of venture capitalists at all stages. The selection criteria assesses the characteristics of the entrepreneur, the product, and the market (Elango et al., 1995). A hurdle rate of 10 times is typically required in 5 – 10 years (Elango et al., 1995). Therefore, the selection criteria of venture capital firms are concerned with enterprises that will achieve high growth over at least a period of 5 years. This gives rise to the research question as to whether the selection criteria of venture capital firms can predict HGEs a defined in this paper. The entrepreneur is assessed in terms of being capable of intense, sustained effort; evaluating risk and reacting to risk; clear in discussing the venture; demonstrated leadership; a track record; familiarity to the market; and ingenuity (Elango et al., 1995). The product is assessed in terms of being proprietary and unique while the market has to demonstrate a significant growth rate (Elango et al., 1995). There is no significant difference between investors at early-stage through to late-stage investing in the selection criteria (Elango et al., 1995).

In studying 64 venture capital firms in Germany Streletzki and Schulte (2012) identified three high-flyer predictors namely, the company, product, and market.

However, it must be stated that even with rigorous selection criteria , not all the enterprises selected by venture capitalists actually result in high growth. Venture capital firms in South Africa, for instance, the average rate of Return On Investments (ROI) is 20% per annum (compound annual growth rate) with a total value of value R187 million declared as write-offs and R438 million declared as profitable exits (Southern African Venture capital and Private Equity Association, 2015).

Researchers have explored factors that influence the performance of venture capital firms in an attempt to understand why even with robust selection criteria some selected ventures fail. Dimov and De Clercq (2006), in a 12-year-old longitudinal study of 200 United States-based VCs, found two aspects that influence portfolio failure of VCs. Firstly, Dimov and De Clercq (2006) found that the extent to which the venture capital firm develops specialised expertise had a negative relationship on proportion defaults (failed ventures). Secondly, Dimov and De Clercq (2006) found that the extent to which the venture capital firm

engages in co-operation with other venture capital firms through syndication has a positive impact on the proportion of defaults in the portfolio, in other words, this increased the probability of failure.

2.4.3 *Value-adding activities of venture capital firms*

Using a longitudinal data set from nine venture capital firms (VCs) in Germany, Proksch et al. (2016) analysed the value-adding activities of VCs. The results suggested that venture capital firms add value to their investees by providing financial capital, human capital and establishing strong governance mechanisms to reduce information asymmetry between the investors and the founders (Proksch et al., 2016). Venture capital firms also made use of their networks or social capital moderately to help ventures that they invested in grow (Proksch et al., 2016). Venture capital firms did not offer a significant amount of operational support (Proksch et al., 2016).

In India, Kumar (2015) found that the value-adding activities included the following:

- Long-term source of finance;
- Managerial Support;
- Business Partner;
- Technological development; and
- Promoting Innovation.

In South Africa, SAVCA and the Development Bank of South Africa (DBSA) commissioned a survey in 2013 to understand the economic impact of venture capital and private capital activities.

The survey had several findings below.

- Innovation: 75% of surveyed ventures reported to have introduced new products or services following the investment of venture capital or private equity firms (Marsh Africa, 2013).
- Growth: 56% of surveyed ventures reported an increase of 46% of revenue in two years (Marsh Africa, 2013). The top 20 growing firms

reported an Earnings before Interest, Depreciation, and Amortisation (EBITDA) increased by 130% over 2 years (Marsh Africa, 2013).

- Social capital and human capital: surveyed ventures reported that the networks, operational and strategic capabilities helped generate growth (Marsh Africa, 2013). Seventy percent (70%) of surveyed ventures found that corporate governance and financial acumen were critical strengths brought by venture capital and private equity investors (Marsh Africa, 2013).
- Job Creation: Surveyed ventures found that the number of employees within and outside South Africa grew by 40% over two years (Marsh Africa, 2013).

Figure 5 below shows the areas in which surveyed respondents see Venture capital and Private Equity investments creating value in their businesses.

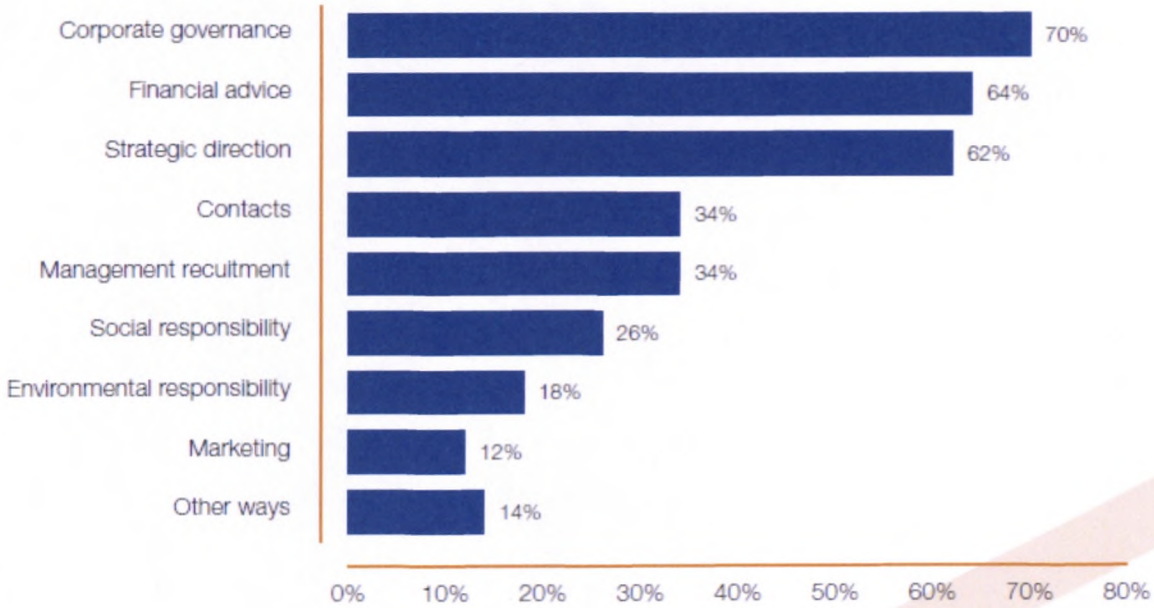


Figure 5: value-adding activities of South African Venture and Private Equity Firms

(Marsh Africa, 2013, p. 7)

Ventures that are still in the early stage of development require more operational support (Elango et al., 1995).

Early-stage VC investors find it more useful to introduce investees to potential suppliers and assist with operational planning than late-stage VC investors (Elango et al., 1995).

Table 2 (in Section 2.4.2) shows a summary of value-adding activities of venture capital firms from seed stage to late Stage.

2.4.4 *Hypothesis 3a and Hypothesis 3b:*

Hypothesis 3a: The selection criteria of venture capital firms influence whether firms will become high growth enterprises.

Hypothesis 3b: The selection criteria of venture capital firms are positively related to employment creation.

2.4.5 *Hypothesis 4*

Hypothesis 4: The employment growth of high growth enterprises is influenced by the value-adding activities of venture capital firms.

2.5 Summary and Conceptual framework of hypotheses

2.5.1 *Conceptual Framework of Hypotheses*

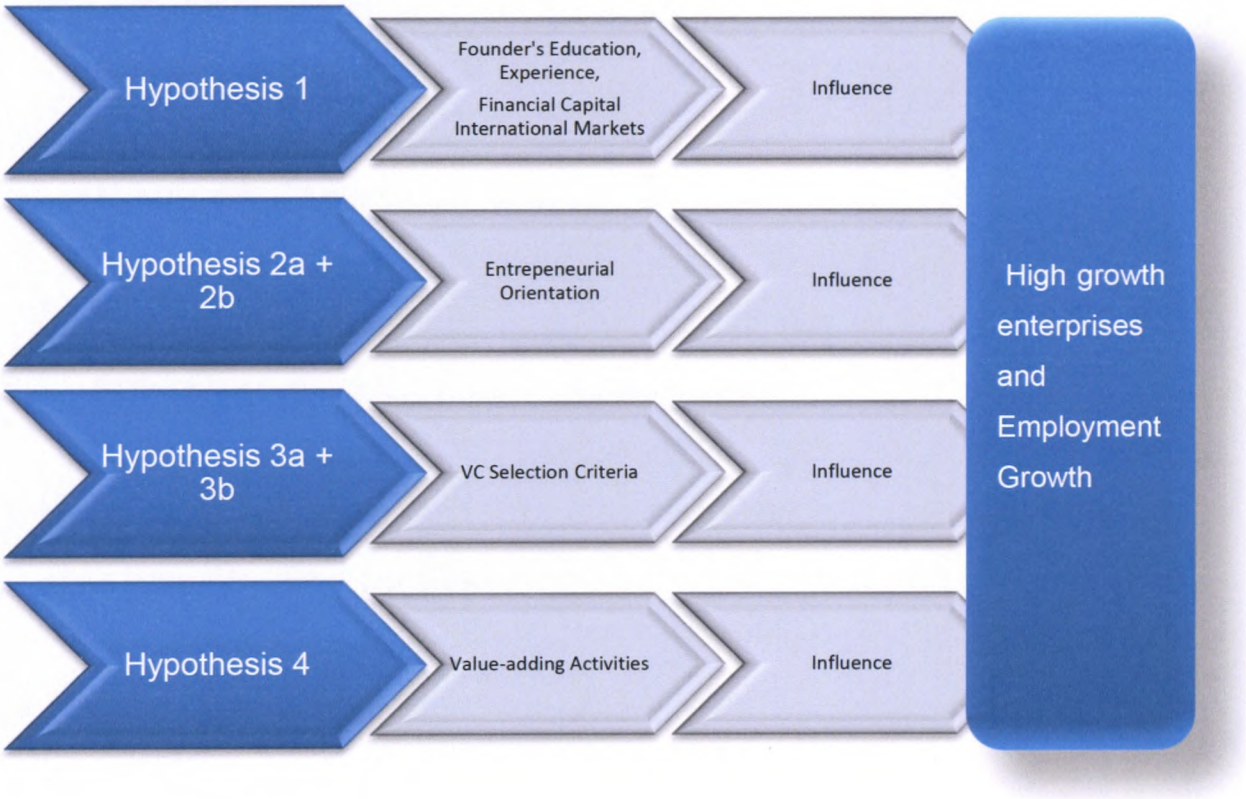


Figure 6 Variables and Conceptual Framework

2.5.2 *Research Questions and Hypotheses*

Table 3: Summary of Research Questions and Hypotheses

Research Question	Hypotheses
Research Question 1: Are there characteristics that can predict an enterprise being a high growth enterprise?	**Hypothesis 1**: There is a positive relationship between (a) Founding team experience and education, (b) access to Financial Capital, (c) international market orientation, and (d) new knowledge, and high growth enterprises.
Research Question 2: What drives the employment growth of high growth enterprises?	**Hypothesis 2a:** entrepreneurial orientation, in terms of innovativeness, risk-taking and proactiveness, impacts the employment growth of high growth enterprises. **Hypothesis 2b**: There is a positive relationship between the elements of entrepreneurial orientation and high growth enterprises.
Research Question 3: Can the selection criteria of venture capital firms predict high growth enterprises?	**Hypothesis 3a**: The selection criteria of venture capital firms influence whether firms will become high growth enterprises. **Hypothesis 3b:** The selection criteria of venture capital firms are positively related to employment creation.
Research Question 4: What is the impact of value-adding activities on the employee growth of enterprises?	**Hypothesis 4:** The employment growth of high growth enterprises is influenced by the value-adding activities of venture capital firms.

2.6 Conclusion of Literature Review

The literature review shows that high growth enterprises contribute the most towards job creation and total employment share (Audretsch, 2012; Goedhuys & Sleuwaegen, 2010; Organisation for Economic Co-operation and Development, 2007). high growth enterprises provide South Africa with an opportunity to create high job creation.

high growth enterprises exhibit certain characteristics that can be further enhanced through venture capital funding. In fact, literature finds that high growth enterprises tend to rely on venture capital funding (Audretsch, 2012).

The South African venture capital has shown strong performance primarily in the start-up capital and growth capital phase – with 81% of Private VC Fund Managers in this space (Southern African Venture capital and Private Equity Association, 2015). However, the venture capital industry remains nascent. The government can play a role in developing the South African venture capital market by providing seed capital funding – which is currently a funding gap in South Africa for high growth enterprises (Balazs, 2014).

CHAPTER 3: RESEARCH METHODOLOGY

3 RESEARCH METHODOLOGY /PARADIGM

The objective of this chapter is to outline and discuss the research methodology and design that was applied in investigating the research problem to gain insights as well as in achieving the research objectives.

3.1 Research methodology / paradigm

The research employs a Quantitative Methodology that employs deductive reasoning and empirical testing of theory (Bryman & Bell, 2017). Theories of entrepreneurial orientation, high growth enterprises and venture capital investing are empirically tested based on the deductive reasoning in the context of South Africa.

The Quantitative Methodology differs from the Qualitative Methodology in terms of assumptions, purpose, approach and research role (Newman & Ridenour, 1998).

The research uses an objectivism paradigm in that it views social reality as being external and objective (Bryman & Bell, 2017). In other words, the researcher believes that there is a common reality on which all people can agree (Newman & Ridenour, 1998).

Thus the Quantitative Methodology assumes that reality is a function of fact as opposed to being socially constructed (Newman & Ridenour, 1998). The purpose of the Quantitative Methodology is to provide a precise measurement of phenomena such as behaviour, opinions, knowledge, and attitudes (Cooper & Schindler, 2014). After obtaining a measurement, Quantitative research then quantifies relationships between variables (Cooper & Schindler, 2014). By so doing, Quantitative research is able to describe, explain and predict phenomena (Cooper & Schindler, 2014).

This is an attempt to determine causality, however, it is not possible to determine causality in a Quantitative cross-sectional design, the best we can do is determine the strength of relationships based on probability (Bryman & Bell, 2017). Therefore, we cannot say exactly what causes some enterprises to be high growth enterprises and others not. However, we measure the relationship between certain variables and those of the state of being a high growth enterprise.

3.2 Research Design

The research is a cross-sectional design – it collects data on more than one case at a point in time (Bryman & Bell, 2017). Data is quantifiable in that all the variables utilise scales that have been developed from literature. The research was conducted using a questionnaire administered through e-mail powered by Survey Monkey. The questions are structured and are target questions. The variables that data will be collected are grouped into two or more categories that are mutually exclusive and collectively exhaustive (Cooper & Schindler, 2014). The distribution of data is normally distributed.

This design was beneficial to the researcher in that it was cost-effective in administering. It also involved little participant preparation – qualifying criteria were sent along with the e-mail. The researcher's involvement was limited; therefore bias was removed (Cooper & Schindler, 2014).

A major disadvantage was that a large sample size is required for Quantitative research (Cooper & Schindler, 2014). Given the limited amount of time, only a reasonable sample size was collected.

3.2.1 *Type of research*

This research is an explanatory research that incorporates descriptive and inferential analysis to gain insights and to identify the nature, strength, and effect of relationships between variables (Bryman & Bell, 2017).

3.2.2 *Rationale for type of research*

The cross-sectional Research Design is appropriate for this research taking into account time constraints in the fulfilment of a Master of Management Degree. It also allows generalisation to be made between variables in terms of relationships such as:

- The relationship between founder characteristics, product, market, and high growth enterprises.
- The relationship between entrepreneurial orientation and high growth enterprises.
- The relationship between the selection criteria of venture capital and high growth enterprises.
- The relationship between the value-adding activities of venture capital and high growth enterprises.

3.3 Population and Sample

3.3.1 *Population*

The unit of analysis is the founder/management representative of an SMME.

The population consists out of all SMMEs in South Africa as defined by this paper who meet the qualifying criteria. The qualifying criteria is that the SMME must have been operating for a minimum period of 3 years and must be registered with the Companies and Intellectual Property Commission in South Africa (Companies and Intellectual Property Commission, 2018).

There are 2.5 million SMMEs in South Africa of which 26% (650,000) are in the formal sector in that they are registered with the CIPC and with the South African Revenue Services and pay taxes (Bureau for Economic Research, 2016). This estimation is in line with (Falkena et al., 2001) who provide a range of 1 million to 3 million total SMMEs in South Africa and a range of 250,000 to 650,000 for formally registered SMMEs. The Global Entrepreneurship Monitor (GEM) estimated that South Africa had an Established Business Ownership Rate (i.e.

businesses above 3.5 years) of 2.5% (Herrington & Kew, 2016). Therefore, the estimation of businesses that have been operating for at least 3 years and are registered with the CIPC using the estimation provided by GEM and the Bureau for Economic Research (BER) is 16,250 (2.5 million*2.5%*26%).

3.3.2 *Sample and sampling method*

Stratified random sampling was used – this is to allow representation from different organisations which the population was selected from i.e. SMMEs from development funding institutions, venture capital, incubators, etc.
Stratified random sampling helps remove bias and assists in obtaining a more balanced view (Bryman & Bell, 2017).

An e-mail invitation including the link to the survey was sent to managers of incubators, enterprise development programmes, training institutions and funding institutions such as venture capital and development funding institutions. Each manager of the above organisations was requested to forward the survey to entrepreneurs who meet the qualification criteria.
A web link was also sent to SMME founders/management representatives through social media platforms such as LinkedIn, Facebook, Instagram, and Twitter.

Surveys were sent to 434 potential respondents which resulted in 137 complete responses that were used as the sample. Table 4 below shows the categories of respondents sampled. Table 4 shows a disproportionate stratified random sample (Cooper & Schindler, 2014). Given varying statistics reported by researchers and the aims to include venture capital funded companies, the researcher deemed it appropriate to select a disproportionate stratified sample. A disproportionate stratified sample has advantages in that it is theoretically superior (Cooper & Schindler, 2014).

Table 4: Sampling of respondents

Description of respondent	Falkena, et al.(2001)	Mazanai Fatoki &(2012)	Underhill Corporate Solutions (2011)	Average	Number in sample	Sample %	Sampling Ratio
1. Entrepreneurs/ Founders/ Management Representative funded by Friends and Family/Savings at Seed stage	40%	82%	82%	68%	110	80%	1%
2. Entrepreneurs/ Founders/ Management Representative funded by External Sources: Development Funding Institutions/Enterprise Development Programmes/Incubators/Angels/Banks/Other External Sources at Seed stage	35%	18%	18%	24%	17	12%	1%
3. Entrepreneurs/ Founders/ Management Representative funded by Venture capital at Seed stage	25%	0%	0%	8%	10	7%	1%
Total	**100%**	**100%**	**100%**	100%	**137**	**100%**	

One achieves a disproportionate stratified random sample by selecting a larger sample of the stratum that is larger than the other strata (Cooper & Schindler, 2014). The researcher achieved the disproportionate stratified random sample by selecting more of category 1 stratum (Entrepreneurs/Founders/Management Representative funded by Friends and Family/Savings at seed stage) based on the average estimates from the literature above. Each element within each stratum's sampling frame was then randomised and a systematic procedure was followed to draw a sample from each stratum (Cooper & Schindler, 2014).

The sampling ratios are relatively low however, there are sufficient for the statistical analysis that will be done. A minimum sample of 30 respondents is required for regression analysis which will be primarily used in this research (Field, 2009). A minimum sample size of 100 is recommended for Factor Analysis (Gorsuch, 1983).

3.4 The research instrument

The research instrument is the quantitative research questionnaire. This is a self-completion questionnaire/survey that was e-mailed via the Survey Monkey platform directly to the founders or management teams of the enterprise. Follow-up reminders were being sent to the founders or management teams of the enterprises daily.

A self-completion questionnaire has advantages in that it removes interviewer effects i.e. the respondent is not affected by the presence of the researcher; there is no interviewer variability in that questions are asked consistently adding to reliability; and it is convenient for the respondent (Bryman & Bell, 2017).

The disadvantages of a self-completion questionnaire are that the respondent cannot clarify questions with the researcher; there is limited probing by the researcher; complex questions may be difficult for respondents to understand; and there are lower response rates (Bryman & Bell, 2017).

To overcome the disadvantages, the researcher provides an explanation of complex terms on the questionnaire. In addition, Page Logic has been used to direct the respondents to questions applicable to them depending on previous answers. Questions are displayed one at a time to remove complexity.

Table 5 below shows the measurement scales that have been used to collect data on the variables. The measurement scales of entrepreneurial orientation, venture capital selection criteria , and value-adding activities are taken from literature. Table 5 shows prior validity and reliability issues that were highlighted by previous researchers.

Table 5: Measurement Scale

Variables	Measurement Scale Source	Prior Validity and Reliability Issues
entrepreneurial orientation	Miller, Covin and Slevin's 1989 instrument: 7-point Likert Scale(Jefferey G. Covin & Wales, 2012).	Here, EO is measured as a composite reflective latent construct (Jefferey G. Covin & Wales, 2012). The scale is two-sided with entrepreneurial questions on one side and non-entrepreneurial questions on the other side to avoid contamination (Wiklund & Shepherd, 2005). Wiklund & Shepherd (2005) found the scale to be reliable with a Cronbach Alpha of 0.64. The scale is valid and reliable (Edmond & Wiklund, 2010). The scale was found to lack cross-cultural validity and reliability in contexts that the respondents were non-English speaking by Knight in 1997 and later edited (Edmond & Wiklund, 2010).
selection criteria	Investment Criteria: 5-point Likert Scale (Elango et al., 1995).	Construct Validity was tested and found to be satisfactory through Exploratory Factor Analysis (Macmillan, Zemann, & Subbanarasimha, 1987).
Value-adding Activities	Importance of Services Provided: 5-point Likert Scale (Elango et al., 1995).	The scale was tested for construct validity through Factor Analysis (MacMillan, Kulow, & Khoylian, 1988).
Founding Team experience and education	Qualification and relevant fieldwork experience: Coded Categorical data (Audretsch, 2012).	Demographic data: Education is represented by highest qualification attained and experience is represented by years of experience in the industry.

Access to Financial Capital	Access to Financial Capital: 7-Point Likert Scale (Wiklund & Shepherd, 2005).	Wiklund & Shepherd(2005) developed a 7-Point Likert Scale to measure the sufficency of access to capital. The scale was tested for convergent and discriminant validity (Wiklund & Shepherd, 2005).
International Market orientation	Original International Markets scale: 7-point Likert Scale (Audretsch, 2012).	Demographic data: International Market Orientation represented by a question regarding the entrepreneur's intent to penetrate global markets from the onset.
New Knowledge	Original New Knowledge scale: 7-Point Likert Scale (Audretsch, 2012)	Developed from demographic data: new knowledge is based on the business being started on new knowledge or an innovative product/technology.

3.5 Procedure for data collection

3.5.1 *Steps to acquire participants:*

Organisations and individuals falling within the various sample strata were identified through a funding eco-system analysis in South Africa and contacts were obtained. To obtain groups funded by eternal sources at Seed stage (category 2 of the sample strata), identified funding organisations were sent an introductory e-mail explaining the topic of the research as well as providing a brief profile of the researcher. The e-mail also included a web link which funding organisations could use to circulate to entrepreneurs in their database who met the qualification criteria in Section 3.3.1 of this paper. The same procedure was done for category 3 of the sample strata which entails entrepreneurs funded by venture capital at seed stage.

Entrepreneurs who formed part of category 1 of the sample strata largely funded their businesses themselves at Seed stage and were approached directly through

Social Media like LinkedIn, Facebook, Twitter, and Instagram. LinkedIn provided the majority of the responses for this category of sample strata. A direct message was sent to the entrepreneurs on the various social media platforms detailing the research topic and introducing the researcher. The direct message also entailed the qualifying criteria as described in Section 3.3.1 of this paper. Other participants in category 1 were acquired through entrepreneurial networking events.

3.5.2 *Informed consent*

The survey first asked respondents to provide their consent before proceeding to the next question of the survey. The consent link was included as part of the e-mail detailing the topic of the research. Participants could also obtain a copy of the research once it was completed.

3.5.3 *Data gathering*

Data gathering was primarily done through the Survey Monkey platform. Once the participants were loaded onto the platform through collectors, reminder messages were sent every second day.

3.6 Data analysis and interpretation

The research uses inferential statistics methods for data analysis and interpretation. Inferential statistics attempts to infer from sample data what the population might think (William, 2006). This is particularly useful as the researcher aims to understand the drivers of high growth enterprises and seed capital within the South African context.

The Statistical analysis software package called IBM SPSS Statistics in conjunction with R has been used to perform hypothesis testing.

3.6.1 *Data Preparation and cleaning:*

A CSV format file of responses from the Survey platform and import data into SPSS Software will be exported.

Data exploration will be undertaken to ensure the data is fit for analysis as stated below.

1. Unnecessary identifiers in the dataset will be removed.
2. A filter will be done for those responses that had expressed consent in the survey and were eligible to participate as per the selection criteria .
3. A missing value analysis will be performed to determine the best treatment for any missing values found (Field, 2009).
4. Variable types will be checked to ensure that they are the required numerical and categorical data types for inferential statistics analysis (Field, 2009).
5. Some data that were submitted as belonging to the other category to fit into listed categories where applicable will be reclassified.

3.6.2 *Data Coding and Reshaping*

Data will be coded by in the following ways:

1. Recode text data to numbers.
2. Code variables with acronyms instead of questions for ease of analysis.
3. Extra columns will be added as needed for the analysis.

3.6.3 *Descriptive Statistics*

Data will be analysed to cover the major themes of the research through Descriptive Statistics. Primarily graphs and tables will be used to quantify:

1. The number of enterprises that met the HGE definition.
2. Employment creation of HGEs compared to that of non-HGEs
3. Characteristics of respondents by HGEs compared to non-HGEs

4. Seed stage funding sources and financial instruments by HGEs compared to non-HGEs.

3.6.4 *Measurement Model Validation through CFA*

Since the research uses existing measurement models for entrepreneurial orientation, venture capital selection criteria and value-adding activities, as stated in Section 3.2, a Confirmatory Factor Analysis (CFA) will be done to validate the different measurement models. Factor Analysis is a multivariate procedure that attempts to find the underlying variables within a latent construct (Field, 2009). CFA differs from Exploratory Factor Analysis (EFA) in that in CFA, confirms previously tested hypotheses and an EFA explores factor loadings of variables that have not been previously tested (Field, 2009).

In order to perform a CFA, the steps below will be undertaken (Suhr, 2011).

1. Test Assumptions:
    a. The variables must be continuous in that it must be interval or ratio data (Laerd Statistics, 2013b).
    b. There must be linearity between variables; this is tested through Pearson's correlation coefficients or a matrix scatter plot (Laerd Statistics, 2013b).
    c. There must be sampling adequacy (Laerd Statistics, 2013b). This is tested through Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy for the overall data set; and (2) the KMO measure for each individual variable(Laerd Statistics, 2013b). Generally, a sample size of 5x to 10x where x represents the number of variables per factor is sufficient (Laerd Statistics, 2013b).
    d. The factors should be suitable for data reduction and this can be determined through Bartlett's test of sphericity (Laerd Statistics, 2013b).
    e. The data should not have any significant outliers and this can be tested through component scores that are 3 standard deviations away from the mean (Laerd Statistics, 2013b).

2. Literature Review of the relevant theory and research literature to support model specification (Suhr, 2011).
3. Specify a measurement model (Suhr, 2011).
4. Determine model identification through the number of degrees of freedom which must be positive (Suhr, 2011).
5. Data Collection (Suhr, 2011).
6. Conduct preliminary Descriptive Analysis: missing data, colinearity and data (Suhr, 2011).
7. Estimate parameters in the model (Suhr, 2011).
8. Assess the goodness of model fit (Suhr, 2011).
    a. Chi-squared must be close to zero (Hu & Bentley, 1999).
    b. RMSEA must be 0.07 or less for goodness of fit (Steiger, 2007).
    c. The Comparative Fit Index (CFI) of 0.90 or greater (Hoe, 2008).
    d. GFI, NNFI, TLI, RFI, and AGFI are incremental fit indexes and must be greater than 0.90 for good model fit (Hooper, Coughlan, & Mullen, 2008).
9. Presentation and interpretation of results (Suhr, 2011).

3.6.5 *Inferential Statistics*

The hypotheses to the research questions below will be tested primarily using Binary Logistic Regression and Simple Linear Regression analysis.

a. *Research Question 1 and Hypothesis 1 Analysis*

Research Question 1: Are there characteristics that can predict an enterprise being a high growth enterprise?

Hypothesis 1: There is a positive relationship between (a) Founding team experience and education, (b) access to Financial Capital, (c) international market orientation, and (d) new knowledge, and high growth enterprises.

Analysis*:* Binary Logistic Regression

A Binary Logistic Regression has the ability to predict the probability that a particular observation can be categorised in one of two categories of a

dichotomous dependent variable based on one or more continuous or categorical independent variables (Laerd Statistics, 2013a). It is useful in this instance as the researcher is trying to predict whether an enterprise is a high growth enterprise or not.

b. *Research Question 2 and Hypotheses 2a and 2b Analysis*

Research Question 2: What drives the employment growth of high growth enterprises?

Hypothesis 2a: Entrepreneurial orientation, in terms of innovativeness, risk-taking and proactiveness, impacts the employment growth of high growth enterprises.

Hypothesis 2b: There is a positive relationship between the elements of entrepreneurial orientation and high growth enterprises.

Analysis: Hypothesis 2a: Simple Linear Regression and Binary Logistic Regression for Hypothesis 2b.

A Simple Linear Regression is useful when one wants to predict the value of one variable using another variable (Laerd Statistics, 2014). For Hypothesis 2a, Employment growth (it is only one category) is the variable the researcher wants to predict based on the value of the independent variable.

For Hypothesis 2b, a Binary Logistic Regression is appropriate due to the outcome of the variable falling into one of two categories (HGE or non-HGE)(Laerd Statistics, 2013a).

c. *Research Question 3 and Hypotheses 3a and 3b Analysis*

Research Question 3: Can the selection criteria of venture capital firms predict high growth enterprises?

Hypothesis 3a: The selection criteria of venture capital firms influence whether firms will become high growth enterprises.

Hypothesis 3b: The selection criteria of venture capital firms are positively related to employment creation.

Analysis: Hypothesis 3a: Binary Logistic Regression and Hypothesis 3b: Simple Linear Regression

For Hypothesis 3a, a Binary Logistic Regression is appropriate due to the outcome of the variable falling into one of two categories (HGE or non-HGE) (Laerd Statistics, 2013a).

For Hypothesis 3b is appropriate: Employment growth (it is only one category) is the variable the researcher wants to predict based on the value of the independent variable(Laerd Statistics, 2014).

d. *Research Question 4 and Hypotheses 4 Analysis*

Research Question 4: What is the impact of value-adding activities on the employee growth of enterprises?

Hypothesis 4: The employment growth of high growth enterprises is influenced by the value-adding activities of venture capital firms.

Analysis: Simple Linear Regression for Hypothesis 4 is appropriate: Employment growth (it is only one category) is the variable the researcher wants to predict based on the value of the independent variable(Laerd Statistics, 2014).

3.6.6 *Binary Logistic Regression Assumptions:*

A Binary Logistic Regression is a test that is able to predict the probability that a particular observation falls into one of two categories of a dichotomous nominal dependent variable based on one or more independent variables that are either continuous or categorical (Laerd Statistics, 2013a).

Part of the process of analysing data using the Binary Logistic Regression involves checking to make sure that the data can actually be analysed through

this procedure. This can be achieved by checking the assumptions of the regression method.

a. ***Assumptions of Binary Logistic Regression***

1. The dependent variable must be continuous in nature and occupy one of two states (Laerd Statistics, 2013a).
2. The must be more than one independent variables which must be either continuous or categorical (Laerd Statistics, 2013a).
3. Observations must have independence (Laerd Statistics, 2013a). The mutually exclusive and exhaustive grouping condition must apply to the dependent variable (Laerd Statistics, 2013a).
4. Independent variables that are continuous in nature must have a linear relationship between themselves and the logit transformation of the dependent variable (Laerd Statistics, 2013a).

b. ***Steps in Performing a Binary Logistic Regression***

1. Test the above assumptions (Laerd Statistics, 2013a).
2. Determine the Variance Explained in the Model Summary table in SPSS that gives the Cox & Snell R Square and Nagelkerke R Square values (Laerd Statistics, 2013a).
3. Obtain the Classification Table which estimates the probability of an event occurring where the cut-off value is 0.5 (Laerd Statistics, 2013a).
4. Obtain the Variables in the Equation table which provides the significance of the model (Sig<0.05) (Laerd Statistics, 2013a).
5. Put all the above values together and interpret (Laerd Statistics, 2013a).

3.6.7 *Assumptions for Simple Linear Regression:*

A Simple Linear Regression is a test that has the ability to predict the value of a particular variable (the dependent variable) using the value of another variable known as the independent variable(Laerd Statistics, 2014).

The assumptions for a Simple Linear Regression are as follows:

1. The two variables being used for the test must be continuous in measure i.e. interval or ratio variables (Laerd Statistics, 2014).
2. The two variables must have a linear relationship (Laerd Statistics, 2014). Scatter plots are useful for checking linearity(Laerd Statistics, 2014).
3. No significant outliers must be present (Laerd Statistics, 2014). An outlier will manifest itself as being far away from the regression line vertically (Laerd Statistics, 2014).
4. Observations must have independence (Laerd Statistics, 2014). This is checked through a Durbin-Watson statistic on SPSS Statistics software (Laerd Statistics, 2014).
5. Data should show homoscedasticity(Laerd Statistics, 2014). This means that the variances along the best fit line remain similar when moving along that line (Laerd Statistics, 2014). Again, this can be done using Scatter plots (Laerd Statistics, 2014).
6. The residuals (errors) of the regression line must approximate a normal distribution(Laerd Statistics, 2014).This can be checked through a Histogram or P-P Plot (Laerd Statistics, 2014).

a. ***Steps in Performing a Simple Linear Regression:***

1. Test the above assumptions(Laerd Statistics, 2014).
2. Obtain the Model Summary table which provides the R-Squared values (Laerd Statistics, 2014).
3. Obtain the ANOVA table which reports how well the regression fits; Sig must be less than 0.05 (Laerd Statistics, 2014).
4. Obtain the Coefficients table which allows the modelling of the regression equation and its statistical significance with Sig being less than 0.05 (Laerd Statistics, 2014).

3.7 Validity and reliability of research

Validity refers to the ability or extent to which a measurement scale measures exactly what the researcher set out to measure (Cooper & Schindler, 2014).

Reliability refers to the degree to which a measure supplies consistent results (Cooper & Schindler, 2014). In the context of this research validity and reliability apply to the constructs of entrepreneurial orientation, selection criteria , and value-adding activities as they have multiple have multiple indicators (Bryman & Bell, 2017).

3.7.1 *External validity*

External validity refers to the data' ability to allow research findings to be generalised across persons, settings, and times (Cooper & Schindler, 2014). In this sense, external validity is closely related to sampling technique (Cooper & Schindler, 2014). This research ensured external validity through stratified random sampling which is a probability sampling method and allows inferences to be drawn from the sample to the population (Cooper & Schindler, 2014).

3.7.2 *Internal validity*

Internal validity refers to the research instrument's to measure what the designer claims it measures(Cooper & Schindler, 2014). Internal validity may be further split into content validity, criterion-related validity and construct validity (Cooper & Schindler, 2014). Construct validity applies to the constructs of entrepreneurial orientation, selection criteria , and value-adding activities as they consist of multiple indicators (Bryman & Bell, 2017).Convergent validity and discriminant validity are part of construct validity (Cooper & Schindler, 2014). The scales for entrepreneurial orientation, selection criteria , and value-adding activities have been reviewed by the relevant authors as stated in Table 5 above.

3.7.3 *Reliability*

Internal Reliability

According to Bryman and Bell(2017), "Internal Reliability applies to multiple-indicator measures" (p. 37). This is to ensure that when there is an aggregation of indicators – the indicators do not relate to the same thing i.e. there are mutually exclusive and collectively exhaustive (Bryman & Bell, 2017).

Internal Reliability applies to the measures of including entrepreneurial orientation, Value-adding Activities, and selection criteria. All the measures are taken from literature and have been tested for reliability before.

Since entrepreneurial orientation is a second-order latent factor, the Cronbach's alpha for each of the dimensions was tested and then followed by the composite reliability as measured by the Cronbach's alpha.

4 CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

This chapter will present results from Data Preparation and cleaning, Data coding and reshaping. It will present results starting with Descriptive Analysis. The following section will then test the measurement model and then proceed to present the results of the various hypotheses using Inferential Analysis. The last section provides a summary of hypotheses supported and those not supported.

4.1.1 *Data Preparation and cleaning:*

A total of 434 responses were received out of which 213 were completed responses. A CSV format file of responses was exported from the Survey platform and imported data into SPSS Software.

Data exploration was undertaken to ensure the data was fit for analysis as stated below:

1. Removed unnecessary identifiers in dataset e.g. IP address, start dates, and end dates.
2. Responses that had expressed consent in the survey and that were eligible to participate as per the selection criteria were filtered for. The remaining number of responses was 173.
3. Respondents that had more than 250 employees were removed and 168 responses remained.
4. A missing value analysis was performed which discovered 31 missing values for question 19 due to a faulty collector. The missing values were more than 10% of the total responses and were therefore discarded(Field, 2009). As a result, 137 responses were valid – which is the final sample used for the research in the proportions that fit the sample strata representation.
5. There was a great need to ensure that there were no missing values to guarantee the successful implementation of analysis algorithms on a

complete dataset. However, there was no need to impute any missing values as the deletion of missing values in the previous step left sufficient data to continue the analysis such as Factor Analysis(Field, 2009).

6. Variable types were checked to ensure that they are the required numerical and categorical data types for inferential statistics analysis(Field, 2009).
7. The researcher reclassified some data that were submitted as belonging to the other category to fit into listed categories where applicable.

Figure 7 below shows the missing value analysis performed after the data cleaning process had been completed. The Analyze Patterns function in SPSS was used to provide descriptive measures of the patterns of missing values in the data.

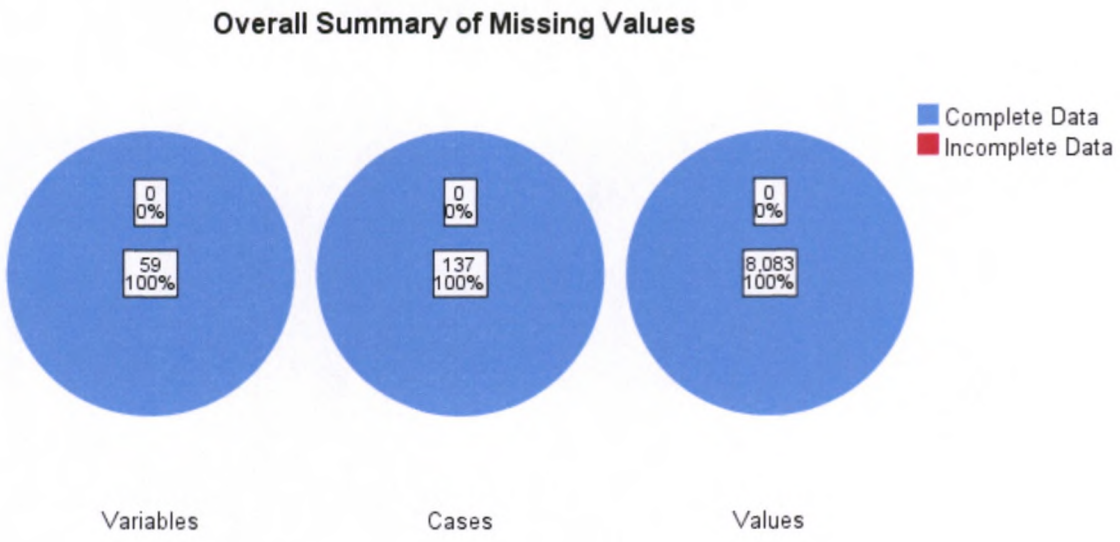


Figure 7: Missing Value Analysis

4.1.2 *Data Coding and Reshaping*

Data were coded by the researcher in the following ways:

1. Recoding the Likert Scale which reflected text in the rating scale into numbers.
2. Coding variables with acronyms instead of questions for ease of analysis.
3. The rest of the variables were already coded when exported from the Survey Monkey platform.
4. Extra columns were added as needed for the analysis. The new columns introduced were the logarithmic values of Annual revenue and employment, HGE classification based on the column "Percentage Revenue Growth". The condition applied was that for an SME to be considered an HGE it had to have achieved at least 20% revenue growth in the 3 years under analysis.
5. Another column of "employment growth" was added which was the average growth of employees over 3 years.

4.2 Descriptive Statistics

4.2.1 *Demographic profile of respondents*

Table 6 below shows that most respondents were founders. 79.6% were founders whilst directors who were not necessarily founders accounted for 9.5%. The remaining 10.9% were decision making executives in the companies surveyed. This was expected as these were the participants that were primarily targeted.

Table 6: Positions in the company of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I am part of the executive management team of the company.	15	10.9	10.9	10.9
	I am the director of the company	13	9.5	9.5	20.4
	I am the founder of the company.	109	79.6	79.6	100.0
	Total	137	100.0	100.0	

Chart 1 below shows that a total number of 83 enterprises met the definition of high growth enterprise (HGE) and 54 enterprises were classified as non-high growth enterprises (non-HGE). This shows that the 60.58% of respondents had an average year on year revenue growth of at least 20%.

Chart 1: Total number of HGEs versus non-HGEs

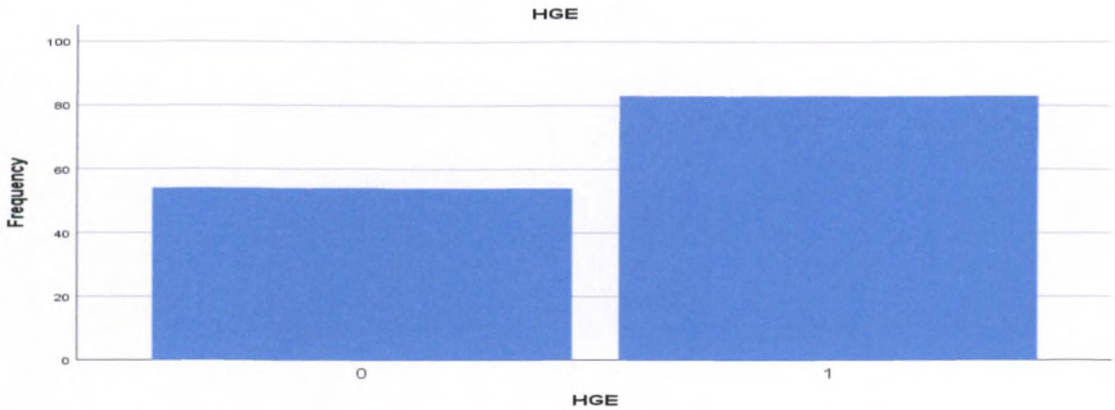


Chart 2 below shows that HGEs had an average employment growth of 84% over 3 years compared to non-HGEs with an average employment growth of 26% over 3 years. All enterprises had an average employment growth of 14.78% over 3 years.

HGEs had an average revenue growth of 118454% while non-HGEs had an average revenue growth of -47% over 3 years. All enterprises had an average revenue growth of 715%.

Chart 2: Average employment growth

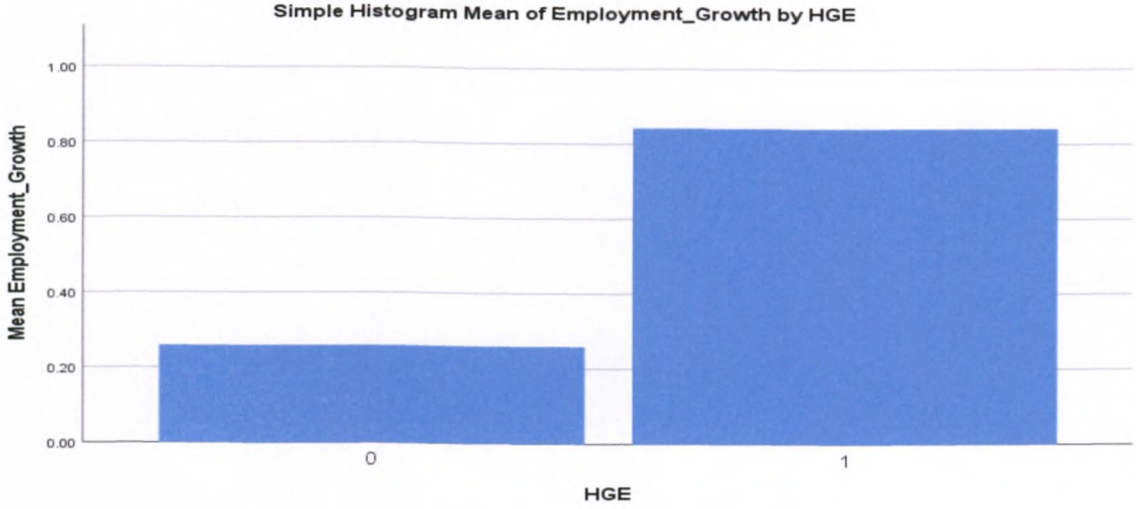


Chart 3 below shows that HGEs typically have an average age of 6 years in operation compared to non-HGEs with an average age of 8 years in operation.

Chart 3: Age by HGEs versus non-HGEs

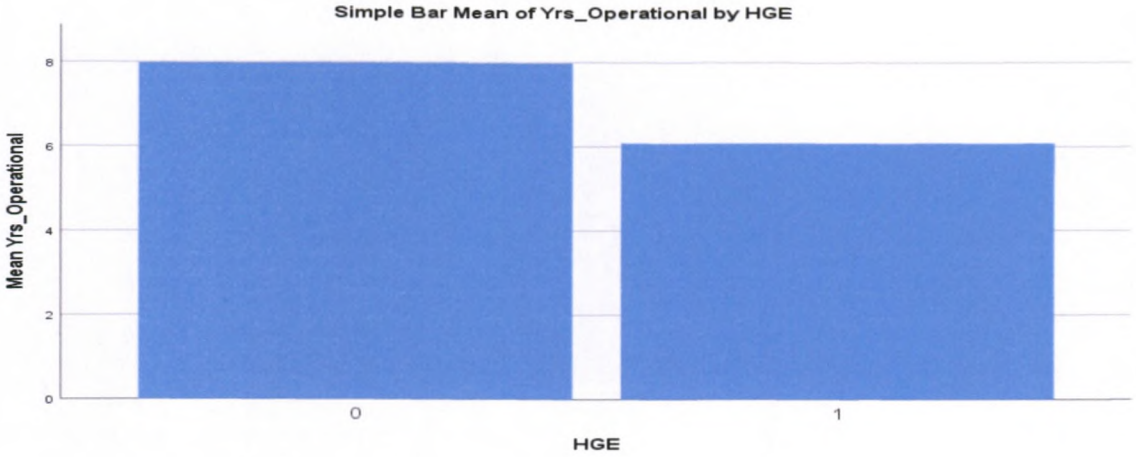


Chart 4 below shows that most enterprises have between 1 to 3 employees with the largest enterprise having 113 employees. The pattern shows that there are a higher number of HGEs with 1 to 3 employees than non-HGEs and that there also a higher number of HGEs with 113 employees than non-HGEs.

Chart 4: Size by non-HGE versus HGEs

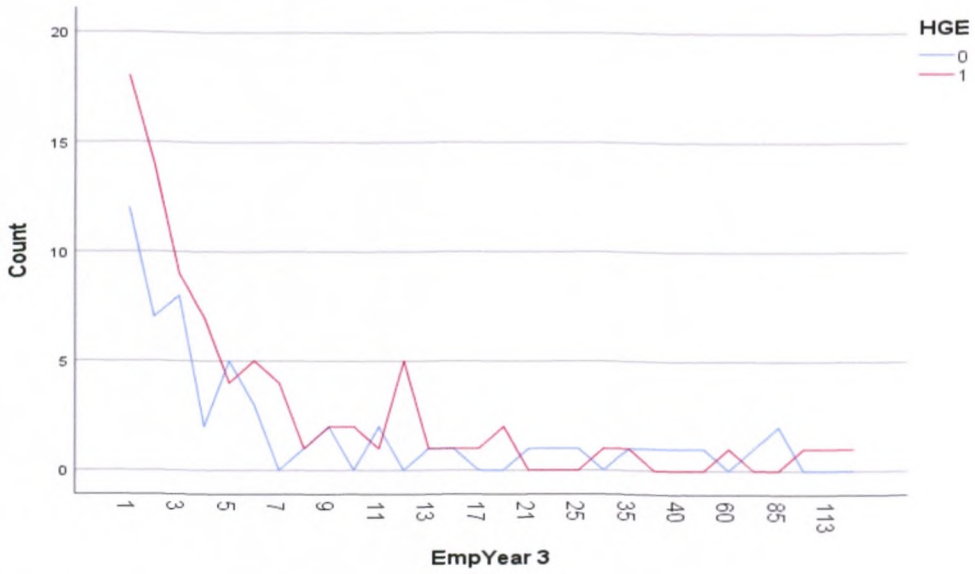


Table 7 below shows that the majority of respondents had 9 years and above experience in the industry of their current business before starting that business. This holds true for HGEs and non-HGEs.

Table 7: Founding Team Experience

		0 - 2 years	3 - 5 years	6 - 8 years	9 years and above	Total
HGE	0	10	13	9	22	54
	1	25	15	14	29	83
Total		35	28	23	51	137

Chart 5, however, shows that there are more HGE founders with 0-2 years' experience in the industry of their current business before starting that business.

Chart 5: Founding Team Experience by HGE versus non-HGE

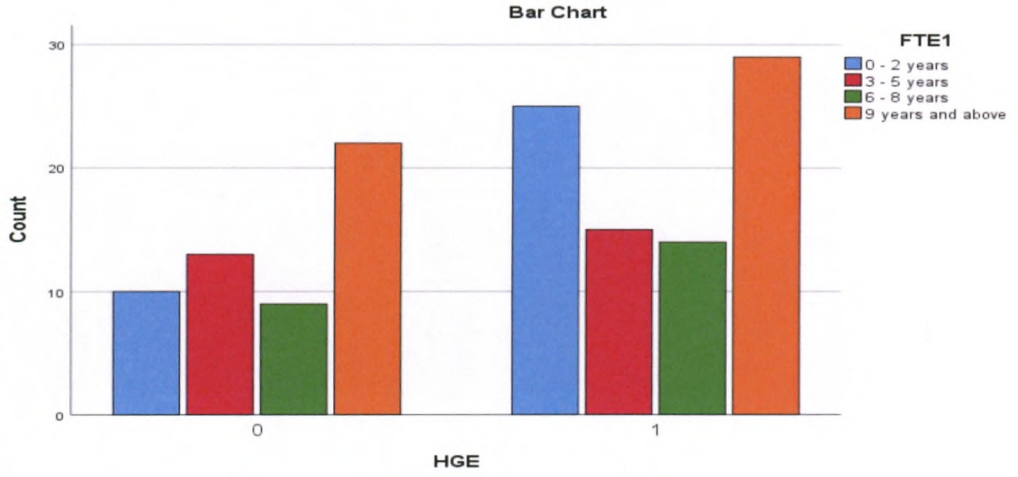
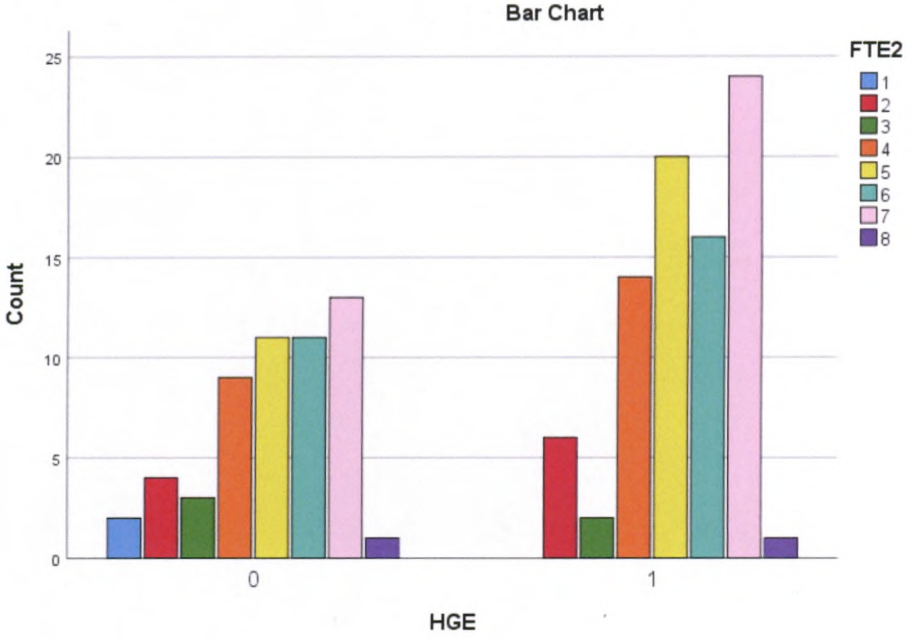


Chart 6 below shows that the founders of high growth enterprises are generally more educated than those of non-high growth enterprises . HGEs have 24 respondents with PhDs compared to only 13 of non-HGE founders with PhDs. The majority of HGE founders have a University Degree as a minimum qualification (74) compared to only 44 of non-HGE founders.

Chart 6: Founding Team Education level by HGE versus non-HGE



*Note: 1=Below Matric/Grade 12; 2=Matric/Grade 12; 3=Diploma; 4=Degree; 5=Honours; 6=Masters; 7=PhD; 8=Other

Table 9 below shows the rating of the respondents on a Likert Scale of 1 to 5: 1=Strongly Disagree; 3=Neutral 5=Strongly Agree. HGEs indicated that they started a business with the intent of penetrating international markets from the onset (4.24) which is higher than non-HGEs (3.76). HGEs indicated that they started the business based on new knowledge (4.75) which is higher than non-HGEs (4.56). HGEs rated access to financial capital as insufficient (4.72) which is higher than non-HGEs (4.41). HGEs did not agree that the current access to financial capital was sufficient (2.99) while non-HGEs leaned marginally to agreement (3.3).

Table 8: International Market Orientation, New Knowledge and Access to Financial Capital

HGE	IMO	NK	FA1	FA2
0	3.76	4.56	4.41	3.30
1	4.24	4.75	4.72	2.78
Total	4.05	4.67	4.60	2.99

*Note: IMO = Establishing business with intent to penetrate International Markets.

NK= Business solution was based on new knowledge

FA1= Financial Capital was perceived to be Insufficient

FA2 = Financial Capital was perceived to be Sufficient

Chart 7 shows that respondents were from diverse industries of the economy. Financial and Business Services was the most represented industry with 30 enterprises; Marketing and Events Management being second with 18 enterprises and Clothing supply, manufacturing and branding with 11 enterprises. The researcher aimed to target diverse industries.

Chart 7: Respondents by Sector

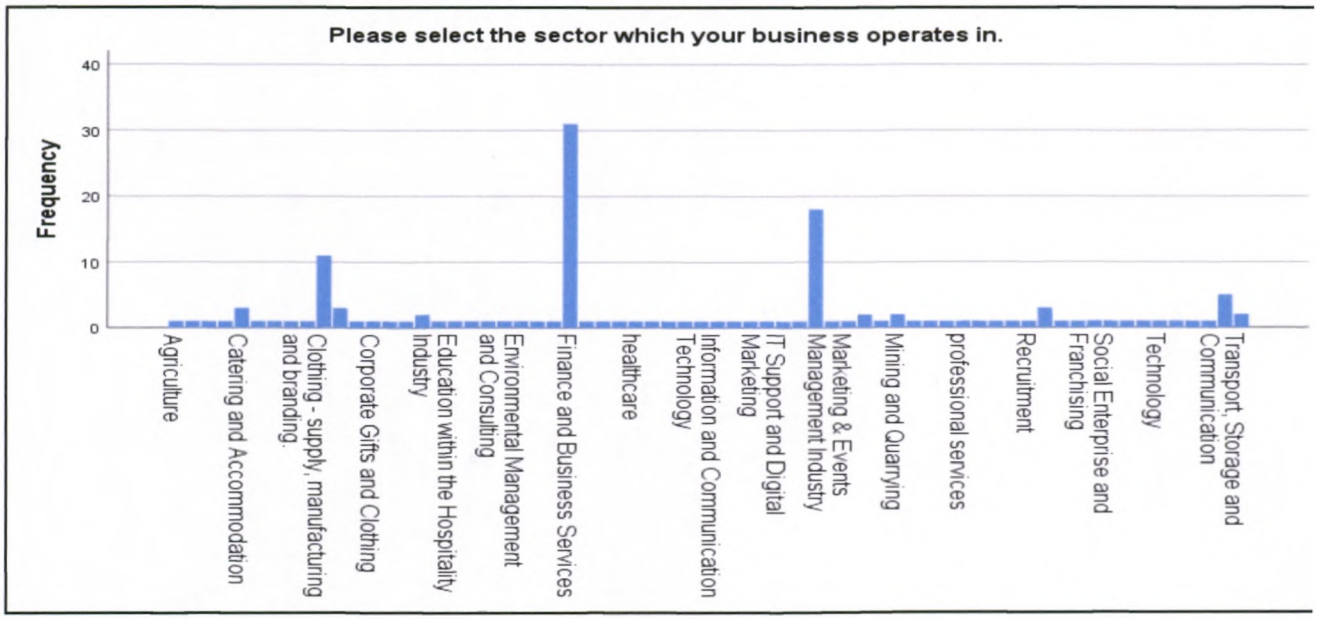


Chart 8 and Table 9 below show the total number of respondents who received an equity investment at any stage of their growth. A total number of 126 respondents indicated that they have never received an equity investment in their business, while only 11 respondents had received an equity investment. These are the same number of people who did not receive any value-adding activities (126) and those who received value-adding activities (11).

Chart 8: Respondents who received equity investments

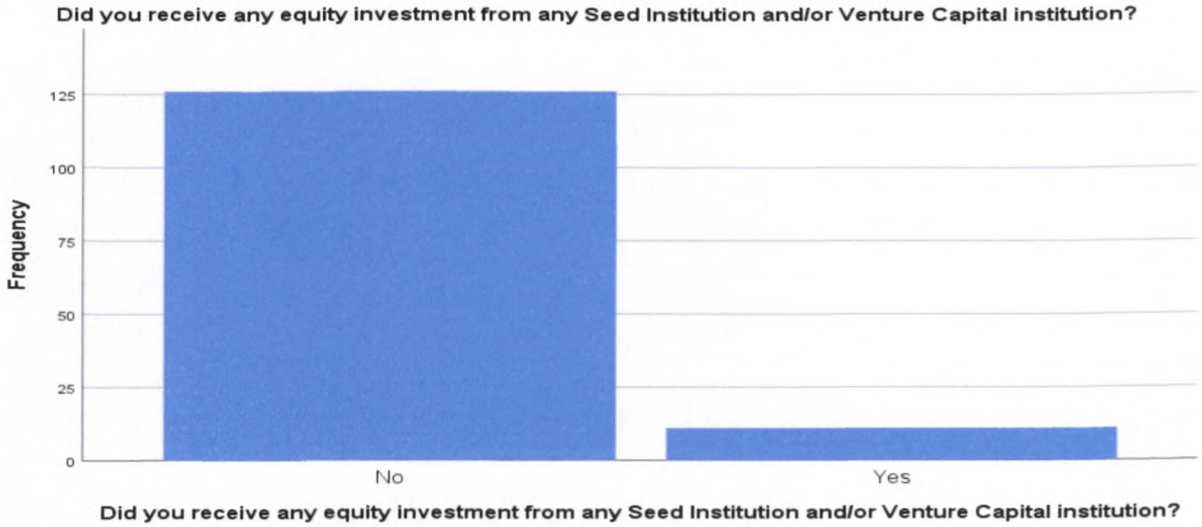


Table 9: Number of respondents who received equity investments

Did you receive any equity investment from any Seed Institution and/or Venture capital institution?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	126	92.0	92.0	92.0
	Yes	11	8.0	8.0	100.0
	Total	137	100.0	100.0	

Chart 9 below shows that most respondents funded their businesses themselves at Seed stage (from 42 – 62 enterprises). There was a much greater number of HGEs funding themselves at Seed stage than non-HGEs. Friends and family were the second source of finance.

Chart 9: Financing sources by HGEs versus non-HGE

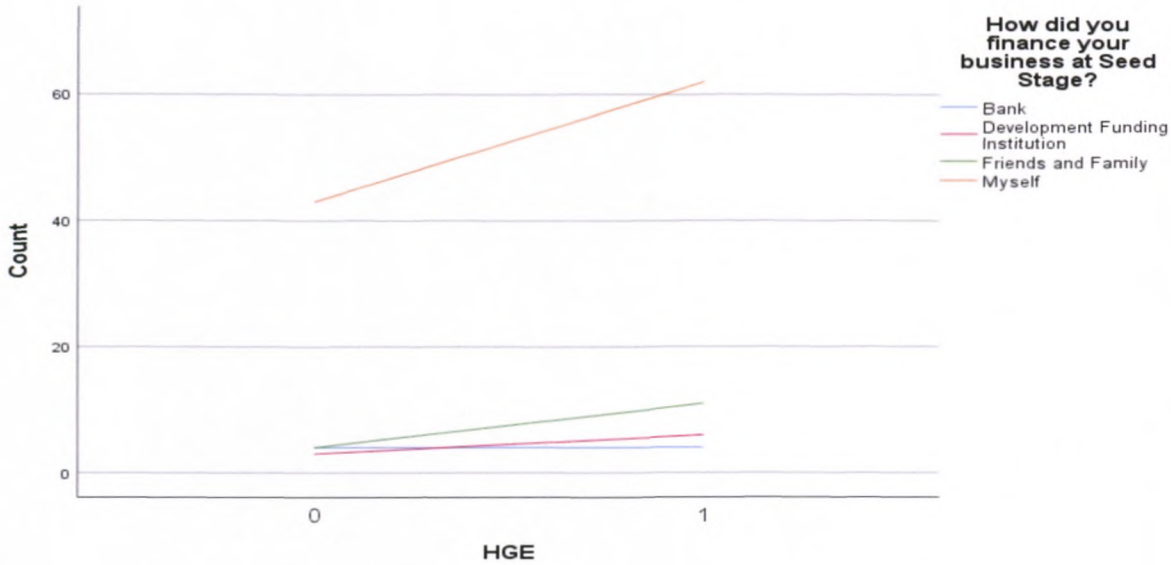


Table 10 below shows the total number of respondents and the sources of finance at Seed stage. The majority of respondents (105) funded their businesses themselves at Seed stage.

Table 10: Number of Respondents by Seed stage financing sources

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bank	8	5.8	5.8	5.8
	Development Funding Institution	9	6.6	6.6	12.4
	Friends and Family	15	10.9	10.9	23.4
	Myself	105	76.6	76.6	100.0
	Total	137	100.0	100.0	

Table 11 below shows that the financial instrument used for financing Seed stage by most respondents is Equity (56.2%), followed by loans (28.5%).

Table 11: Number of Respondents by Seed stage Financial Instruments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Equity	77	56.2	56.2	56.2
	Grant	16	11.7	11.7	67.9
	Loan	39	28.5	28.5	96.4
	Other (please specify)	5	3.6	3.6	100.0
	Total	137	100.0	100.0	

Chart 10 below shows that HGEs use more Equity to fund their businesses at Seed stage than non-HGEs.

Chart 10: Financial Instruments by HGE versus non-HGEs

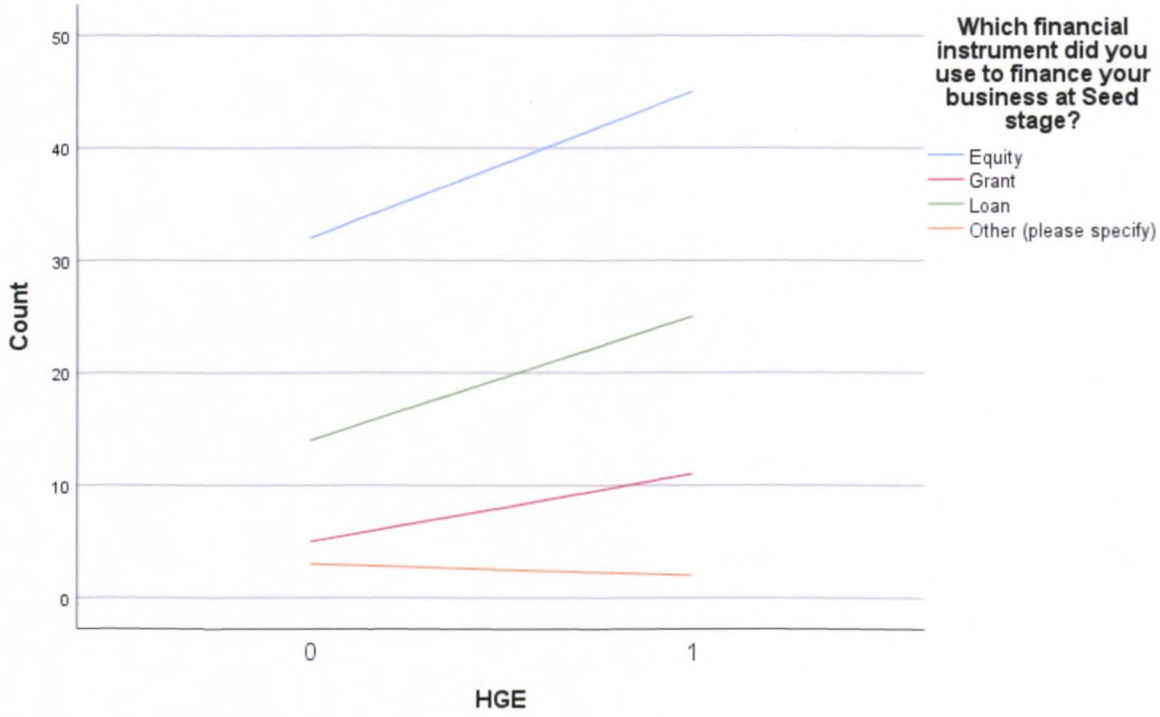


Table 12 below shows that most respondents (63.5%) still finance the business themselves at Growth Stage with Friends and Family(17.5%) being second and Development Funding Institutions being last (8%)

Table 12: Respondents by Growth Stage financing sources

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bank	15	10.9	10.9	10.9
	Development Funding Institution	11	8.0	8.0	19.0
	Friends and family	24	17.5	17.5	36.5
	Myself	87	63.5	63.5	100.0
	Total	137	100.0	100.0	

4.3 Testing of the Measurement Models

The factor loadings, composite reliability and average variance extracted (AVE) were used to assess convergence validity (Culbertson, 2013).

4.3.1 *Factor Loadings*

The measurement models used in the research of entrepreneurial orientation, venture capital selection criteria and value-adding activities were adopted from literature as per Table 5 in this paper.

The factor loadings of each of the factors in the research was recorded as can be seen below:

1. Entrepreneurial orientation Factors

Table 13: Entrepreneurial orientation Factor

	INN
LINN1	0.478
LINN2	0.435
LINN3	0.632

PRO

```
LPRO1 0.487
LPRO2 0.507
LPRO3 0.441


        RSK
LRSK1 0.745
LRSK2 0.661
LRSK3 0.627
```

From the Table 13 above it can be seen that factor loadings were generally low ranging from 0.435 to 0.745 with RSK having the highest loadings on average (Culbertson, 2013).

2. Venture capital selection criteria Factors

From the Table 14 below it can be seen that factor loadings of the VCE factor were generally medium to high ranging from 0.586 to 0.793.

Table 14: Venture capital selection criteria Factor

```
VCE1 0.666
VCE2 0.729
VCE3 0.787
VCE4 0.793
VCE5 0.715
VCE6 0.660
VCE7 0.586
```

3. Value-adding activities Factor

From the Table 15 below it can be seen that factor loadings of the value-adding activities factor (VA Factor) were generally very high ranging from 0.889 to 0.982.

Table 15: Value-adding activities Factor

```
VA1 0.918
VA2 0.942
VA3 0.889
VA4 0.917
VA5 0.937
VA6 0.966
VA7 0.948
```

VA8	0.982

4.3.2 *Internal Reliability*

In this study, the internal consistency (Cronbach's Alpha) of the measures was tested (table below) so as to ascertain the degree to which multiple attempts to measure the same concept are in agreement. It can be seen in Table 16 below that RSK had 0.716 which is above the recommended threshold, however, PRO and INN where 0.469 and 0.506 respectively, which are less than ideal but can still be used for the analysis (Culbertson, 2013). The Composite Reliability (CR) estimates the extent to which a set of latent construct indicators share in their measurement of a construct, whilst the average variance extracted is the amount of common variance among latent construct indicators (Hair et al., 1998). It can be seen that CR was good with an alpha value of 0.7737 which is above the minimum requirement of 0.7.

Table 16: entrepreneurial orientation Cronbach's Alpha

	INN	PRO	RSK	CR
Alpha	0.5063592	0.4687197	0.7164846	0.7737408

The Average Variance Extracted (AVE), which reflects the overall amount of variance in the indicators showed that PRO had 0.5269, INN had 0.5949 whilst RSK 0.565 which were all above the recommended value of 0.5 as shown in Table 17 below.

The Variance Extracted measure shows the total amount of variance in the indicators that the latent construct accounts for (Hair Jr., Black, Babin, & Anderson, 2010).

Table 17: Variance Extracted

```
INN        PRO        RSK
AveVar 0.5948782 0.5469166 0.5654371
```

Average variance extracted (AVE)

The bivariate correlations between the latent factors shown in Table 18 below exhibited a desirable trait whereby the inter-factor relationship was below the threshold of 0.85 (Culbertson, 2013). This shows that the constructs not too correlated which might have led to autocorrelation (Culbertson, 2013).

Discriminant validity

Factor Correlations

Table 18: Factor Correlations

```
INN   PRO   RSK
INN 1.000
PRO 0.676 1.000
RSK 0.708 0.661 1.000
```

A validity test was performed and passed to determine if each factor's square rooted average variance extracted (AVE) was greater than its correlations with the remaining constructs (Fornell & Larcker, 1981).

Table 19: Discriminant Validity of EO Factors

Factor	Square root of AVE
INN	0.77128347577

RSK	0.7519555173
PRO	0.73953809908

Table 19 above shows evidence that that model exhibits discriminant validity of all constructs.

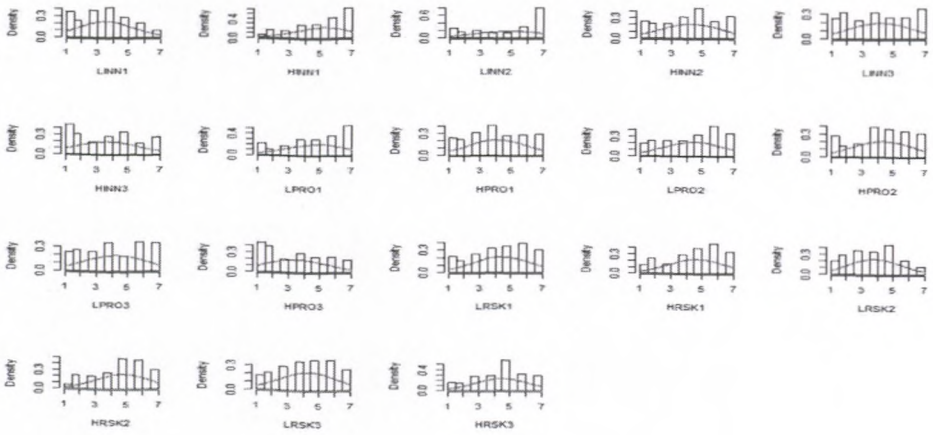
The tests for validity and reliability have shown that the measurement model is sufficiently reliable and valid with respect to the data collected.

4.3.3 *Confirmatory Factor Analysis*

a. ***Assumptions:***

In order to use the Confirmatory Factor Analysis (CFA), certain assumptions have to hold true. To make sure that CFA was an appropriate method to use for the dataset, the researcher checked to ascertain that there were no violations of the assumption of normality as it has a significant effect on covariance values in the model.

Figure 8: EO CFA Assumption Check



All the EO variables exhibited a sufficiently normal distribution justifying the use of CFA and Structural Equation Modelling (SEM) for the model.

4.3.4 *Outlining the Confirmatory Factor Analysis (CFA) model*

CFA: Entrepreneurial orientation

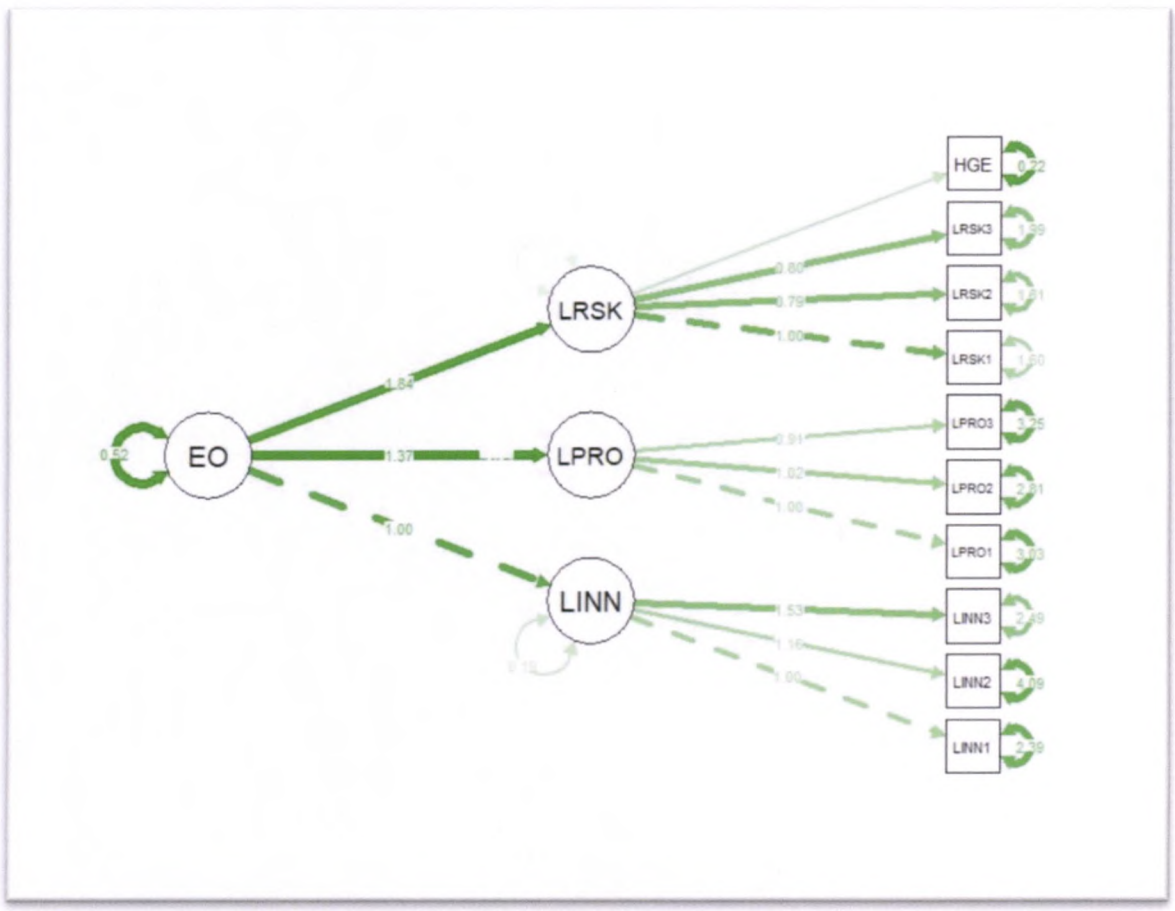


Figure 9: Entrepreneurial orientation Confirmatory Factor Analysis

LINN =~ LINN1 + LINN2 +LINN3

LPRO =~ LPRO1 + LPRO2 + LPRO3

LRSK =~ LRSK1 + LRSK2 + LRSK3

EO =~ LINN + LPRO + LRSK

HGE~ EO

The CFA model specified in Figure 9 above shows the relationship between each of the first order latent constructs with its constituent indicators.

The CFA model further shows the relationship between EO, a second order reflective factor with its constituent dimensions. The model also shows the regression equation where EO is the independent variable and HGE is the dependent variable. No modification indices were used to improve the model as EO is a reflective construct thus specifying covariance between indicators will violate the model (Jefferey G. Covin & Wales, 2012).

4.3.5 *Confirmatory Factor Analysis (CFA) Results*

Entrepreneurial orientation (EO)

The CFA results for EO are presented in Table 20 below. A maximum likelihood estimator was used and the Chi-square test produced a p-value of 0.037. The key indicators of model fit looked good with both the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) both above 0.8 with scores of 0.934 and 0.908 respectively. The other indicators of interest were the RMSEA and SRMR which ought to be equal to or below 0.06. Their results were 0.060 and 0.059 respectively. On the background of this information, it is clear that the model for EO fits the collected data and the researcher can proceed to do inferential statistics with respect to EO.

Table 20: entrepreneurial orientation Factor Results

lavaan (0.6-1.1188) converged normally after 46 iterations						
Number of observations				137		
Estimator				ML		
Minimum Function Test Statistic				47.636		
Degrees of freedom				32		
P-value (Chi-square)				0.037		
Model test baseline model:						
Minimum Function Test Statistic				283.300		
Degrees of freedom				45		
P-value				0.000		
User model versus baseline model:						
Comparative Fit Index (CFI)				0.934		
Tucker-Lewis Index (TLI)				0.908		
Loglikelihood and Information Criteria:						
Loglikelihood user model (H0)				NA		
Loglikelihood unrestricted model (H1)				NA		
Number of free parameters				23		
Akaike (AIC)				NA		
Bayesian (BIC)				NA		
Root Mean Square Error of Approximation:						
RMSEA				0.060		
90 Percent Confidence Interval			0.015	0.093		
P-value RMSEA <= 0.05				0.304		
Standardized Root Mean Square Residual:						
SRMR				0.059		
Parameter Estimates:						
Information				Expected		
Standard Errors				Standard		
Regressions:						
	Estimate	Std.Err	z-value	P(>|z|)	Std.lv	Std.all
HGE ~						
EO	0.199	0.076	2.613	0.009	0.143	0.293

Note. Source [adapted] from IBM SPSS Statistics for Windows (IBM Corp., 2013).

Table 20 above also shows the regression results between HGE and EO. From the regression, we can see that there is a weak positive relationship between EO and HGE. The relationship is statistically significant with a p-value 0.009 < 0.05. The coefficient of EO in the regression equation is 0.293 implying that one unit change in EO results in a 0.293 change in HGE.

The regression equation is as follows:

$$HGE = 0.293*EO$$

All factors of EO (innovativeness, risk-taking, and proactiveness) were retained.

4.4 Results pertaining to Research Question 1: Hypothesis 1

Research Question 1: Are there characteristics that can predict an enterprise being a high growth enterprise?

Null Hypothesis 1: There is no relationship between (a) Founding team experience and education, (b) access to Financial Capital, (c) international market orientation, and (d) new knowledge, and high growth enterprises.

Alternative Hypothesis 1: There is a positive relationship between (a) Founding team experience and education, (b) access to Financial Capital, (c) international market orientation, and (d) new knowledge, and high growth enterprises.

4.4.1 *Assumptions for Binary Logistic Regression*

1. **Assumption 1:** The dependent variable HGE is nominal and has two states (HGE=1 and HGE=0) based on percentage revenue growth (Laerd Statistics, 2013a).

2. **Assumption 2:** The binary logistic regressions had more than one independent variables, which were either continuous or categorical (Laerd Statistics, 2013a).
3. **Assumption 3:** There was independence of observations and the dependent variable had mutually exclusive and exhaustive categories. (HGE=1 and HGE=0) (Laerd Statistics, 2013a).
4. **Assumption 4:** There was a linear relationship between the continuous independent variables and the logit transformation of the dependent variable (Laerd Statistics, 2013a).

The Binary Logistic Regression is shown in the tables below (Laerd Statistics, 2013a).

4.4.2 *Variance explained*

The Table 21 below helps to understand how much variation in the dependent variable can be explained by the model (the equivalent of R^2 in multiple regressions) (Laerd Statistics, 2013a).

Table 21: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	177.915[a]	.042	.056

a. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.

The Model Summary shows the **Cox & Snell R Square** and **Nagelkerke R Square** (Laerd Statistics, 2013a). They can both be used to calculate the explained variation (Laerd Statistics, 2013a). The Cox & Snell R Square shows an explained variation of 4.2% while the Nagelkerke R Square shows a better-explained variation of 5.6% (Laerd Statistics, 2013a).

4.4.3 *Category prediction*

The researcher has used Binomial logistic regression to estimate the probability of an SMME being an HGE (Laerd Statistics, 2013a). The probability must at least be 0.05 in order for SPSS to deem it to occur - this is a classification problem using predictive methods (Laerd Statistics, 2013a).

The Classification Table (Table 22) shows the actual classified status against the prediction (Laerd Statistics, 2013a).

Table 22: Classification Table[a]

			Predicted		
			he		Percentage
	Observed		0	1	Correct
Step 1	HGE	0	8	46	14.8
		1	12	71	85.5
	Overall Percentage				57.7

a. The cut value is .500

Table 22 above information regarding the cases (number and percentage) that are classified as HGE(1) or non-HGE(0) given the independent variables i.e. Founding team experience and education, access to Financial Capital, international market orientation, and new knowledge(Laerd Statistics, 2013a).

4.4.4 *Variables in the equation*

The **Variables in the Equation** Table (Table 23 below) the independent variable with its weighting and its significance (Laerd Statistics, 2013a).

Table 23: Variables in the Equation

		B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	FTE1	-.166	.151	1.207	1	.272	.847	.630	1.139
	FTE2	.110	.117	.876	1	.349	1.116	.887	1.403
	FA1	.001	.089	.000	1	.993	1.001	.841	1.191
	FA2	-.120	.088	1.868	1	.172	.887	.747	1.053
	NK	.010	.090	.013	1	.910	1.010	.847	1.205
	IMO	.101	.084	1.428	1	.232	1.106	.938	1.305
	Constant	.210	.950	.049	1	.825	1.234		

a. Variable(s) entered on step 1: FTE1, FTE2, FA1, FA2, NK, IMO.

The results in the **Variables in the Equation** (Table 23) table shows that all the independent variables have an effect on the model but none of them is statistically significant as illustrated by high Sig values which are all greater than 0.05 (Laerd Statistics, 2013a).

Table 24: Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	13.228	8	.00104

The Binary Logistic Regression tested the influence of Founding Team Experience and Education (FTE), Access to Financial Capital (FA), New Knowledge (NK), International Markets (IMO) on the chance that SMMEs becoming HGEs (Laerd Statistics, 2013a). The model was statistically significant, $\chi2$ (8) = 13.228, $p < .005$ and it explained 5.6% of the variance in HGE status and correctly classified 57.7% of cases (Laerd Statistics, 2013a).

Result: Hypothesis 1 is not supported as the relationship is not statistically significant.

4.5 Results pertaining to Research Question 2: Hypothesis 2a and Hypothesis 2b

Research Question 2: What drives the employment growth of high growth enterprises?

4.5.1 *Hypothesis 2a results:*

Null Hypothesis 2a: Entrepreneurial orientation, in terms of innovativeness, risk-taking and proactiveness, does not impact the employment growth of high growth enterprises.

Alternative Hypothesis 2a: Entrepreneurial orientation, in terms of innovativeness, risk-taking and proactiveness, impacts the employment growth of high growth enterprises.

a. ***Simple Linear Regression Assumptions:***

1. **Assumption 1:** employment growth and EO are continuous variables (Laerd Statistics, 2014).
2. **Assumption 2:** The two variables must have a linear relationship (Laerd Statistics, 2014). Correlation tableware useful for checking linearity (Laerd Statistics, 2014).
3. **Assumption 3:** No significant outliers are present in that no point is far away from the regression line (Laerd Statistics, 2014)
4. **Assumption 4:** Observation has independence as shown in the Durbin-Watson Statistic (Laerd Statistics, 2014).
5. **Assumption 5:** Data shows homoscedasticity shown by the Scatter plots (Laerd Statistics, 2014).

6. **Assumption 6:** As the Histogram Charts and P-P Plots below, the residuals (errors) of the regression approximate normal distribution (Laerd Statistics, 2014).

Chart 11: Financial Instruments by HGE versus non-HGEs

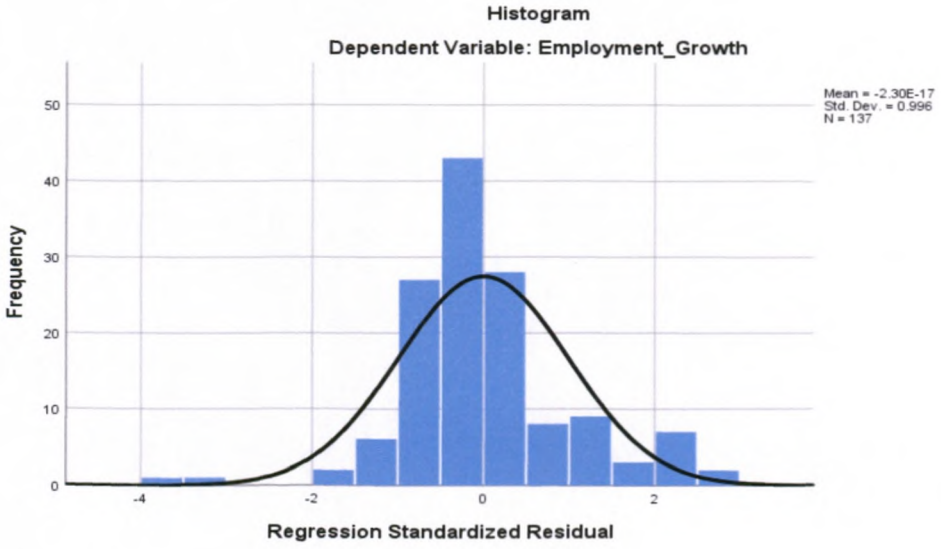


Chart 12: : P-P Plot of Regression Standardised Residual

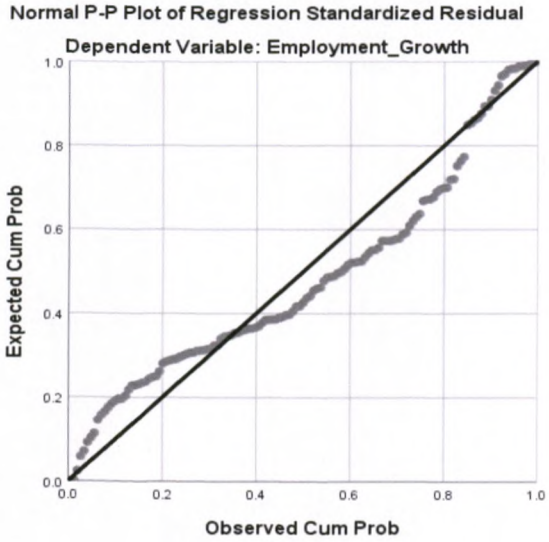
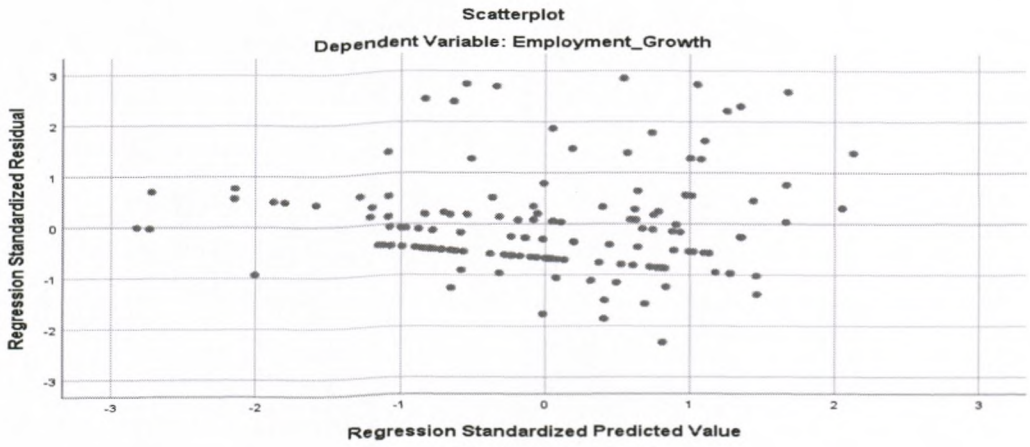


Chart 13: Scatterplot



b. ***Output of Simple Linear Regression***

Table 25: Correlations

		Employment Growth	EO
Pearson Correlation	employment growth	1.000	.234
	EO	.234	1.000
Sig. (1-tailed)	employment growth	.	.003
	EO	.003	.
N	employment growth	137	137
	EO	137	137

Table 25 above shows the correlation between EO and employment growth, which is 0.234. This is a very weak and positive correlation (Laerd Statistics, 2014)

Table 26: Model Summary[b]

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.230[a]	.053	.046	.91313	.053	7.533	1	135	.007	2.088

a. Predictors: (Constant), EO

b. Dependent Variable: employment growth

The Durbin Watson value was 2.088 which is between 1.5 and 2.5 which implies that there is no autocorrelation among the predictors(Laerd Statistics, 2014).

Table 27: Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	EO[b]	.	Enter

a. Dependent Variable: employment growth

b. All requested variables entered.

Note. Source [adapted] from IBM SPSS Statistics for Windows (IBM Corp., 2013).

Table 26 shows an R^2 value of 5.3%, this indicates how much of the variation in the dependent variable (employment growth in Table 27) can be explained by entrepreneurial orientation(Table 29) which in this case is small (Laerd Statistics, 2014).

Table 28: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	9.242	1	9.242	7.821	.006[b]
	Residual	159.527	135	1.182		
	Total	168.770	136			

a. Dependent Variable: employment growth

b. Predictors: (Constant), EO

The regression model is statistically significant at $p<0.05$ as shown in the ANOVA Table 28 above (Field, 2009; Laerd Statistics, 2014).

Table 29 Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Collinearity Statistics	
Model		B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.597	.093		6.426	.000	.413	.780		
	EO	.320	.114	.234	2.797	.006	.094	.546	1.000	1.000

a. Dependent Variable: employment growth

Table 29 above shows the coefficient statistics for the regression model(Laerd Statistics, 2014).

The R-squared is 0.053 and the adjusted R-squared is 0.046 ($p < 0.001$)(Laerd Statistics, 2014). This implies that EO accounts for 5.3% of the variance exhibited in employment growth (Cronk, 2012).

The ANOVA results table shows that the model is a statistically significant statistic, showing that the forecast of the dependent variable is not likely due to error (Field, 2009; Laerd Statistics, 2014).

The influence of EO on employment growth is 0.234 as exhibited by the coefficient value (Laerd Statistics, 2014).

The linear regression equation for the model is as follows:

$$Employment\ Growth = 0.597 + 0.234 * EO$$

To interpret the results above, we can conclude that EO has a weak positive influence on employment growth as represented by the coefficient value of 0.234 (Laerd Statistics, 2014).

Result: Hypothesis 2a is supported. Based on the results, employment growth of is driven by the elements of entrepreneurial orientation.

4.5.2 *Hypothesis 2b Results:*

Null Hypothesis 2b: There is no relationship between the elements of entrepreneurial orientation and high growth enterprises.

Hypothesis 2b: There is a positive relationship between the elements of entrepreneurial orientation and high growth enterprises.

a. ***Assumptions for Binary Logistic Regression***

Assumptions were tested and met in Section 4.4.1 above.

b. ***Variance explained***

The Table 30 below shows the variation in the dependent variable that can be explained by the model (Laerd Statistics, 2013a). The Nagelkerke R Square performs the same function as the R-Square in multiple regressions (Laerd Statistics, 2013a).

Table 30: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	173.998[a]	.069	.093

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

The Cox & Snell R Square shows an explained variation of 6.9% while the Nagelkerke R Square shows a better-explained variation of 9.3% (Laerd Statistics, 2013a).

c. ***Category prediction***

The researcher has used Binomial logistic regression to estimate the probability of an SMME being an HGE. An SMME will be an HGE if the probability is at least 0.5 (Laerd Statistics, 2013a).

The Classification Table (Table 31) below shows the actual classified status against the prediction (Laerd Statistics, 2013a).

Table 31: Classification Table[a]

			Predicted		
			HGE		Percentage
	Observed		0	1	Correct
Step 1	HGE	0	12	42	22.2
		1	17	66	79.5
	Overall Percentage				56.9

a. The cut value is .500

d. ***Variables in the equation***

The **Variables in the Equation** (Table 32 below) the independent variable with its weighting and its significance (Laerd Statistics, 2013a).

Table 32: Variables in the Equation

Variables in the Equation

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 0	Constant	.430	.175	6.045	1	.014	1.537

The results in the **Variables in the Equation** (Table 32) table shows that all the independent variables (entrepreneurial orientation in terms of innovativeness, risk-taking, and proactiveness) have an effect on the model but and are statistically significant (Sig = 0.014) as illustrated by a low Sig value below 0.05 (Laerd Statistics, 2013a).

Table 33: Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	20.315	8	.009

The Binary Logistic Regression tested the elements of entrepreneurial orientation: innovativeness, proactiveness, and risk-taking on the chance that SMMEs becoming HGEs (Laerd Statistics, 2013a). The model was statistically significant, $\chi 2$ (8) = 20.315, $p < .005$ and explained 9.3% (using Nagelkerke R2) of the variance in HGE status and accurately classified 56.9% of cases (Laerd Statistics, 2013a).

Result: Hypothesis 2b is therefore supported as the relationship is statistically significant. There is a relationship between the elements of entrepreneurial orientation and high growth enterprises .

4.6 Results pertaining to Research Question 3: Hypothesis 3a and Hypothesis 3b

Research Question 3: Can the selection criteria of venture capital firms predict high growth enterprises?

4.6.1 *Hypothesis 3a Results:*

Null Hypothesis 3a: The selection criteria of venture capital firms do not influence whether firms will become high growth enterprises.

Alternative Hypothesis 3a: The selection criteria of venture capital firms influence whether firms will become high growth enterprises.

a. ***Assumptions for Binary Logistic Regression***

Assumptions were tested and met in Section 4.4.1 above.

b. ***Variance explained***

The Table 34 below shows the variation in the dependent variable that can be explained by the model (Laerd Statistics, 2013a). The Nagelkerke R Square performs the same function as the R-Square in multiple regressions (Laerd Statistics, 2013a).

Table 34: Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.430	.175	6.045	1	.014	1.537

Table 35: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	183.168[a]	.004	.006

a. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.

The Model Summary shows the **Cox & Snell R Square** and **Nagelkerke R Square** output values (Laerd Statistics, 2013a). These methods may be both used for calculating the explained variation (Laerd Statistics, 2013a). According to Cox & Snell R^2 the explained variation is 0.4% and it is 0.6% according to Nagelkerke R^2 (Laerd Statistics, 2013a).

c. *Category prediction*

The researcher has used Binary Logistic Regression to determine the probability of an SMME being an HGE (Laerd Statistics, 2013a). An SMME will be an HGE if the probability is at least 0.5 and a non-HGE if the probability is less than 0.5 (Laerd Statistics, 2013a).

The Classification Table (Table 36) shows the actual classified status against the prediction (Laerd Statistics, 2013a).

Table 36: Classification Table[a]

	Observed		Predicted HGE 0	Predicted HGE 1	Percentage Correct
Step 1	HGE	0	1	53	1.9
		1	1	82	98.8
	Overall Percentage				60.6

a. The cut value is .500

d. ***Variables in the Equation***

Table 37: Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	VC_Selection	.132	.175	.568	1	.451	1.141	.810	1.607
	Constant	.431	.175	6.062	1	.014	1.540		

a. Variable(s) entered on step 1: VC_Selection.

The results in the **Variables in the Equation** (Table 37) table shows that all the independent variables (Venture capital selection criteria) do not have an effect on the model and all of them are statistically significant as illustrated by high Sig values (0.451) above 0.05 (Laerd Statistics, 2013a). Only as a constant is the Venture capital selection criteria constant (Sig = 0.014)(Laerd Statistics, 2013a).

Result: Hypothesis 3a is not supported as the relationship is not statistically significant. The selection criteria of Venture capital firms does not predict enterprises that will be high growth enterprises for investment

4.6.2 *Hypothesis 3b Results:*

Null Hypothesis 3b: The selection criteria of Venture capital firms are have no relation to employment creation.

Alternative Hypothesis 3b: The selection criteria of Venture capital firms are positively related to employment creation.

a. ***Simple Linear Regression Assumptions***

Assumptions were tested and met in Section 4.5.1 above.

Chart 13 and Chart 14 below show that the residuals (errors) are normally distributed (Laerd Statistics, 2014).

Chart 14: Histogram

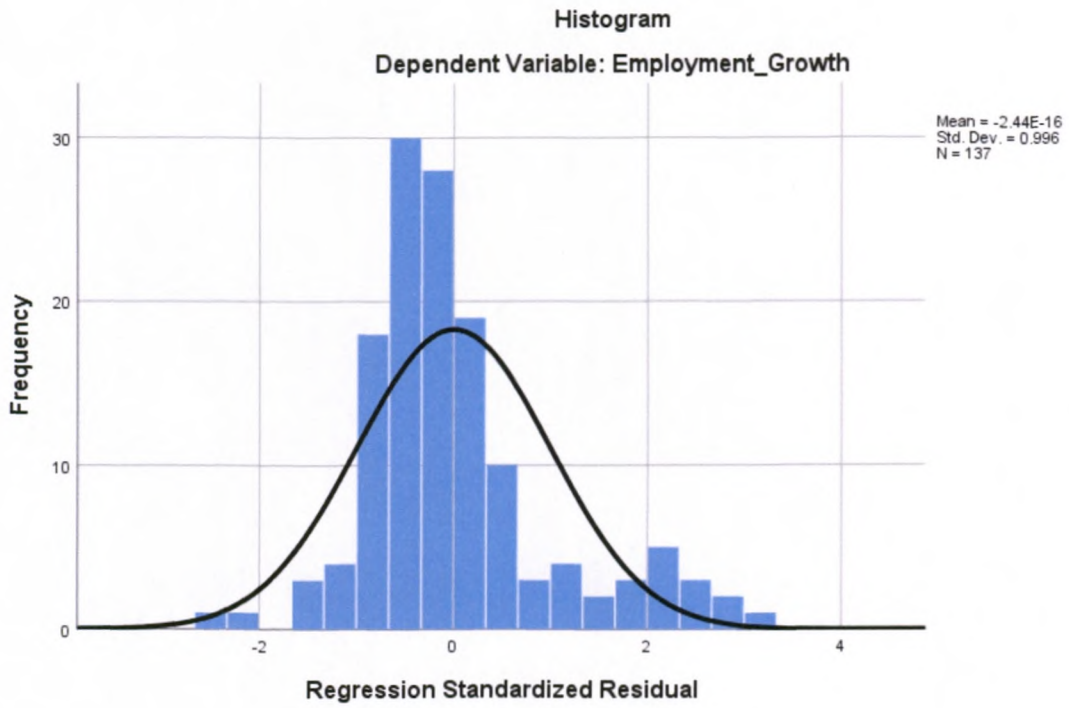
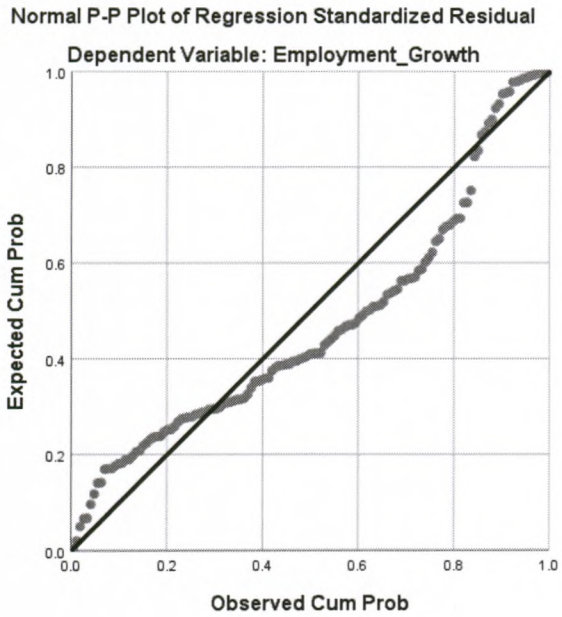


Chart 15: P-P Plot of Regression Standardised Residual



.

b. ***Output of Simple Linear Regression***

Table 38: Correlations

		employment growth	VC_Selection
Pearson Correlation	employment growth	1.000	.233
	VC_Selection	.233	1.000
Sig. (1-tailed)	employment growth	.	.003
	VC_Selection	.003	.
N	employment growth	137	137
	VC_Selection	137	137

Table 38 above shows the correlation between Venture capital selection criteria and employment growth is 0.233 (Laerd Statistics, 2014). This is a significant positive correlation as Sig value is below 0.05 (Field, 2009; Laerd Statistics, 2014)

Table 39: Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	VC_Selection	.	Enter

a. Dependent Variable: employment growth

b. All requested variables entered.

Table 40: Model Summary[b]

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.130[a]	.017	.010	.93028	.017	2.326	1	135	.130	1.984

a. Predictors: (Constant), VC_Selection

b. Dependent Variable: employment growth

Table 40 shows an R^2 value of 5.4%, this indicates how much of the variation in the dependent variable(Laerd Statistics, 2014). employment growth (in Table 40) can be explained by Venture capital selection criteria (Table 40) which in this case is small (Laerd Statistics, 2014).

Table 41: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	8.184	1	8.184	7.762	.006[b]
	Residual	142.326	135	1.054		
	Total	150.509	136			

a. Dependent Variable: employment growth

b. Predictors: (Constant), VC_Selection

The regression model is statistically significant at $p<0.05$ as shown in the ANOVA Table 41 above (Field, 2009; Laerd Statistics, 2014).

Table 42: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.630	.088		7.179	.000	.456	.803		
	VC_Selection	.245	.088	.233	2.786	.006	.071	.419	1.000	1.000

a. Dependent Variable: employment growth

Note. Source [adapted] from IBM SPSS Statistics for Windows (IBM Corp., 2013).

Table 42 above shows the coefficient statistics for the regression model.

The R-squared is 0.054 and the adjusted R-squared is 0.047 ($p < 0.001$) (Laerd Statistics, 2014). This implies that Venture capital selection criteria accounts for 5.7% of the variance exhibited in employment growth (Laerd Statistics, 2014). The ANOVA results table shows that the model is a statistically significant statistic, showing that the forecast of the dependent variable is not likely due to error (Field, 2009; Laerd Statistics, 2014).

The influence of Venture capital selection criteria on employment growth is 0.233 as exhibited by the coefficient value(Laerd Statistics, 2014).

The linear regression equation for the model is as follows:

$$Employment\ Growth = 0.630 + 0.245 * VC\ Selection$$

To interpret the results above, we can conclude that VC Selection has a statistically significant but weak positive influence on employment growth as represented by the coefficient value of 0.245 (Laerd Statistics, 2014). A unit increase in VC selection results in an increase of 0.245 in Employment growth(Laerd Statistics, 2014).

Result: Hypothesis 3b is supported.The selection criteria of venture capital firms is related to employment creation.

4.7 Results pertaining to Research Question 4: Hypothesis 4

Research Question 4: What is the impact of value-adding activities on the employee growth of enterprises?

Null Hypothesis 4: The employment growth of high growth enterprises is not influenced by the value-adding activities of venture capital firms.

Alternative Hypothesis 4: The employment growth of high growth enterprises is influenced by the value-adding activities of venture capital firms.

4.7.1 *Hypothesis 4 Results:*

a. ***Simple Linear Regression Assumptions***

Assumptions were tested and met in Section 4.5.1 above.

Chart 15 and Chart 16 below show that the residuals (errors) are normally distributed (Laerd Statistics, 2014).

Chart 16: Histogram

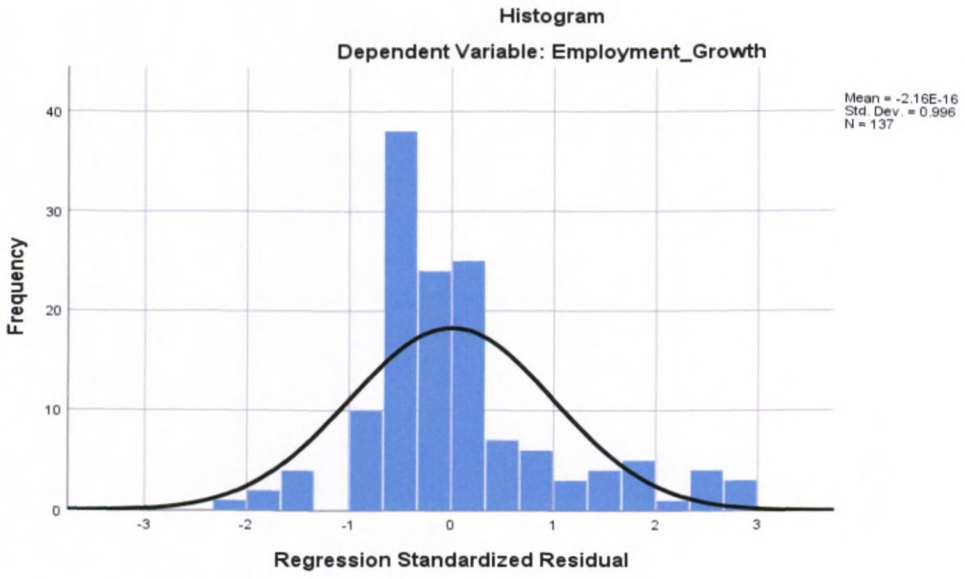
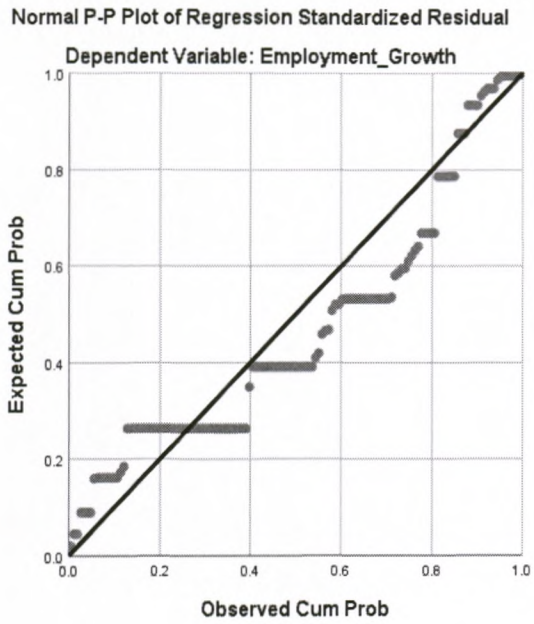


Chart 17: P-P Plot of Regression Standardised Residual



b. ***Output of Simple Linear Regression***

Table 43: Correlations

		employment growth	VAS
Pearson Correlation	employment growth	1.000	.084
	VAS	.084	1.000
Sig. (1-tailed)	employment growth	.	.166
	VAS	.166	.
N	employment growth	137	137
	VAS	137	137

Table 43 above shows the correlation between value-adding activities and employment growth is 0.166. This is not a significant positive correlation as Sig value is above 0.05 (Laerd Statistics, 2014).

Table 44: Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	VAS[b]	.	Enter

a. Dependent Variable: employment growth

b. All requested variables entered.

Note. Source [adapted] from IBM SPSS Statistics for Windows (IBM Corp., 2013).

Table 45: Model Summary[b]

				Std. Error of	Change Statistics					
Model	R	R Square	Adjusted R Square	the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.084[a]	.007	.000	.93498	.007	.949	1	135	.332	2.211

a. Predictors: (Constant), VAS

b. Dependent Variable: employment growth

Table 45 shows an R^2 value of 0.07%, this indicates how much of the variation in the dependent variable (Laerd Statistics, 2014). employment growth (in Table 44) can be explained by value-adding activities (Table 44) which in this case is small (Laerd Statistics, 2014).

Table 46: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.829	1	.829	.949	.332[b]
	Residual	118.016	135	.874		
	Total	118.845	136			

a. Dependent Variable: employment growth

b. Predictors: (Constant), VAS

The regression model is not statistically significant at p >0.05 as shown in the ANOVA Table 46 above (Laerd Statistics, 2014).

Table 47: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.612	.080		7.661	.000	.454	.770		
	VAS	.078	.080	.084	.974	.332	-.080	.237	1.000	1.000

a. Dependent Variable: employment growth

Table 47 above shows the coefficient statistics for the regression model.

The R-squared is 0.007 and the adjusted R-squared is 0.000 ($p < 0.001$) (Laerd Statistics, 2014). This implies that value-adding activities accounts for 0.07% of the variance exhibited in employment growth (Laerd Statistics, 2014). The ANOVA results table shows that the model is not a statistically significant statistic, showing that the forecast of the dependent variable is not likely due to error (Field, 2009; Laerd Statistics, 2014).

The influence of value-adding activities on employment growth is 0.084 as exhibited by the coefficient value (Laerd Statistics, 2014).

The linear regression equation for the model is as follows:

$$Employment\ Growth = 0.612 + 0.084 * VC\ Selection$$

To interpret the results above, we can conclude that value-adding activities have a weak positive influence on employment growth as represented by the coefficient value of 0.084 (Laerd Statistics, 2014). The relationship is not statistically significant (Laerd Statistics, 2014).

Result: Hypothesis 4 is not supported. The employment growth of high growth enterprises is not driven by the value-adding activities of venture capital firm

4.8 Summary of the results

Table 48: Summary of Results

Research Question	Hypotheses	Supported/Not Supported
Research Question 1: Are there characteristics that can predict an enterprise being a high growth enterprise?	**Hypothesis 1**: There is a positive relationship between (a) Founding team experience and education, (b) access to Financial Capital, (c) international market orientation, and (d) new knowledge, and high growth enterprises.	H1: Not Supported
Research Question 2: What drives the employment growth of high growth enterprises?	**Hypothesis 2a**: Entrepreneurial orientation in terms of innovativeness, risk-taking and proactiveness impact the employment growth of high growth enterprises. **Hypothesis 2b**: There is a positive relationship between the elements of entrepreneurial orientation and high growth enterprises.	H2a: Supported H 2b: Supported
Research Question 3: Can the selection criteria of venture capital firms predict high growth enterprises?	**Hypothesis 3a**: The selection criteria of Venture capital firms influence whether firms will become high growth enterprises. **Hypothesis 3b:** The selection criteria of venture capital firms are positively related to employment creation.	H3a: Not Supported H3b: Supported
Research Question 4: What is the impact of value-adding activities on the employee growth of enterprises?	**Hypothesis 4:** The employment growth of high growth enterprises is influenced by the value-adding activities of venture capital firms.	H4: Not Supported

5 CHAPTER 5: DISCUSSION OF THE RESULTS

5.1 Introduction

The research aimed to understand the properties of high growth enterprises in the South African context; their contribution to employment and whether there is a case for bridging the seed stage investment gap in South Africa such that a conducive environment is created for more high growth enterprises. As such, the structure of this paper will unpack the demographic profile of respondents with reference to literature. The next section will discuss the findings from the Inferential Statistics analyses of the hypotheses made in this research. The next section will then conclude on all findings.

5.2 Demographic profile of respondents

5.2.1 *High growth enterprises*

a. *Definition of high growth enterprises*

Chart 1 shows that a total number of 83 enterprises met the definition of high growth enterprise (HGE) and 54 enterprises were classified as non-high growth enterprises (non-HGE). This shows that the 60.58% of respondents had an average year on year revenue growth of at least 20%.

This was a surprising result as Henrekson and Johansson (2010) concluded that high growth enterprises are few in number.

This result may be due to the researcher only focusing on the revenue element of the definition of HGEs i.e. that an HGE is one with an average revenue of 20% per annum over 3 years. There are other researchers who have chosen to define HGEs with reference only to the revenue element which is annual growth of at least 20% (Henrekson & Johansson, 2010). However, these researchers introduced another variable to the definition of HGEs such as a minimum revenue threshold (Henrekson &

Johansson, 2010). Due to limited research of HGEs in the South African context, it is difficult to determine the exact definition.

Bassil, Gonzales, Goodwin and Morris (2013) defined a scale-up in the South African context as, "A firm that is more than 3 years old with an average annual employment growth rate greater than or equal to 20% during the previous three years."(p. 5). Bassil et al.(2013) show that Scale-ups account for 13% of South Africa's total firms.

Applying the definition by Bassil et al.(2013), the number of HGEs is 7.

Using the HGE definition proposed by Bassil et al. (2013) as it relates to employee growth together with this study's definition, the number of HGEs is 7 which would mean HGEs account for 5% of the sample.

Delmar et al. (2003) suggest that growth in itself is heterogeneous and that all high growth firms do not grow in the same way, therefore, researchers should aim to compute different forms of growth with different growth measures.

Given that this research could only collect the given sample size in a short amount of time, the HGE definition based on Bassil et al. (2013) would not have allowed a Confirmatory Factor Analysis to be done. As such, the definition of HGEs in the context of this research is sufficient. This is an opportunity for future research and empirical testing.

It is also possible that the high number of HGEs may be due to the erratic revenue growth of young firms given that the mean age of enterprises is 6.38 years (Audretsch, 2012). Small firms generally grow rapidly to reach the Minimum Efficiency Scale and have high growth variability (Goedhuys & Sleuwaegen, 2010).

b. ***The relationship between size, age, and growth***

1. **Age:** Chart 3 shows that HGEs typically have an average age of 6 years in operation compared to non-HGEs with an average age of 8 years in operation. The average age of all enterprises is 6.38 years.
2. **Size:** The average size of all enterprises is 11.8 employees. HGEs have an average size of 11.8 employees while non-HGEs have an average size of 12 employees.
3. **Employee Growth:** Chart 2 shows that HGEs had an average employment growth of 84% over 3 years compared to non-HGEs with an average employment growth of 26% over 3 years. All enterprises had an average employment growth of 14.78% over 3 years.
4. **Revenue Growth:** HGEs had an average revenue growth of 118454% while non-HGEs had an average revenue growth of -47% over 3 years. All enterprises had an average revenue growth of 715%

Literature shows that there is a negative relationship between size-age and growth (Audretsch, 2012; Goedhuys & Sleuwaegen, 2010).

It's clear that this relationship holds in this research as well. HGEs are on average smaller in size (11.8 employees) and younger in age (6.38 years) and yet growing exponentially in average revenue (118454%) and employee growth (84%) than non-HGEs (see Table 49 below).

Table 49: Average employment growth and Average Revenue Growth by HGEs versus non-HGEs.

Numbers in decimals (multiply by 100 for %)		
Mean		
he	Employment_Growth	_Revenue Growth
0	.2592	-4.7568
1	.8414	1184.5450
Total	.6119	715.7691

5.2.2 *Characteristics of high growth enterprises*

1. **Founders' years of experience**: Most respondents had 9 years and above experience in the industry of their current business before starting that business. This holds true for HGEs and non-HGEs. There is literature that supports founders of HGEs having extensive experience (Audretsch, 2012; Goedhuys & Sleuwaegen, 2010). Chart 5, however, shows that there are more HGE founders with 0-2 years' experience in the industry of their current business before starting that business. This could be due to New Knowledge Spillover effects which augment the learning process (Audretsch, 2012).
2. **Founders' Education:** Chart 6 shows that the founders of high growth enterprises are generally more educated than those of non-high growth enterprises. HGEs have 24 respondents with PhDs compared to only 13 of non-HGE founders with PhDs. The majority of HGE founders have a University Degree as a minimum qualification (74) compared to only 44 of non-HGE founders. There is literature that supports this observation (Audretsch, 2012).
3. **International Market Orientation and New Knowledge** HGEs indicated that they started a business with the intent of penetrating international markets from the onset (4.24) which is higher than non-HGEs (3.76). HGEs indicated that they started the business based on new knowledge (4.75) which is higher than non-HGEs (4.56). All of the above observations are supported by literature (Audretsch, 2012; Goedhuys & Sleuwaegen, 2010)
4. **Access to Financial Capital:** HGEs rated access to financial capital as insufficient (4.72) which is higher than non-HGEs (4.41). HGEs did not agree that the current access to financial capital was sufficient (2.99) while non-HGEs leaned marginally to agreement (3.3). This is an interesting observation as HGEs are said to depend heavily upon equity financing in the form of Venture capital, particularly at Seed stage. This rating of

financial capital by HGEs also serves to highlight the gap in Seed stage funding in South Africa (Aspen Network of Development Entrepreneurs, 2015).

5. **Industry:** Respondents were from diverse industries of the economy (Chart 9). This is in line with literature as it shows that the HGEs are spread across different industries (Audretsch, 2012).

5.2.3 *Funding of enterprises: high growth enterprises and non-high growth enterprises:*

A total number of 126 respondents indicated that they have never received an equity investment in their business, while only 11 respondents had received an equity investment from a seed institution or venture capital firm (Chart 8). This confirms the niche nature of equity funding at seed stage and nascent venture capital eco-system in South Africa (Southern African Venture capital and Private Equity Association, 2015).

Most respondents (105) funded their businesses themselves at seed stage. There was a much greater number of HGEs funding themselves at seed stage than non-HGEs. Friends and family were the second source of finance. It is worth noting that development funding institutions (DFIs) and Banks were the least funding sources used for Seed stage. It also worth noting that the HGES used banks as a source of Seed stage funding less than non-HGEs as shown by the downward-sloping lines for Banks. It also worth noting that the steepness of the DFI line is much flatter than for Self-funding and for Family and Friends. This means that while HGEs have access to DFI funding sources at Seed stage than non-HGEs, HGEs tend to use this source at a decreasing rate than Self-funding, and Family and friends (Chart 9).

The data confirms the seed stage funding gap in South Africa (Herrington & Kew, 2016).

5.2.4 *Financial Instrument used at Seed stage*

The financial instrument used for financing seed stage by most respondents is Equity (56.2%), followed by loans (28.5%). This is interesting as most respondents fund themselves at Seed stage and prefer to recognise that as equity.

HGEs use more equity to fund their businesses at Seed stage than non-HGEs (Chart 10). This is in line with previous literature (Audretsch, 2012; Goedhuys & Sleuwaegen, 2010).

Again, the above highlight the need for equity funding at Seed stage from Seed Institutions.

Most respondents (63.5%) still finance the business themselves at growth Stage with Friends and Family (17.5%) being second and development funding institutions being last (8%). This also highlights how access to finance is still a significant barrier in South Africa (Henrekson & Johansson, 2010).

5.3 Discussion pertaining to Research Question 1: Hypothesis

Table 50: Hypothesis 1 Result

Research Question 1: Are there characteristics that can predict an enterprise being a high growth enterprise?	**Hypothesis 1:** There is a positive relationship between (a) Founding team experience and education, (b) access to Financial Capital, (c) international market orientation, and (d) new knowledge, and high growth enterprises.	**H1: Not Supported**

The Binary Logistic Regression has shown that Founders' years of experience and Founders' Education, International Market Orientation, New Knowledge, and Access to Financial Capital have a positive influence on enterprises becoming HGEs. However, this relationship was not statistically significant and therefore Hypothesis 1 is not supported.

This simply means that more experience in an industry, new knowledge in an industry, qualifications and financial capital do not guarantee high growth.

High growth entrepreneurship is fundamentally concerned with growth and navigating a path through growth (Delmar et al, 2003). Penrose (1959) shows that in order for firms to grow, they need to navigate through the stages of growth and overcome each stage's challenges.

Penrose (1959) saw the firm or an enterprise as an administrative unit with internal activities that took place within it. Essentially, it is the unique combination of all the resources such as growth management experience, knowledge, financial and other resources that result in growth as the firm searches for new ways to grow profitably (Penrose, 1959). Garnsey (1998) adds on this model to say that it is essentially the problem-solving ability of all these resources that result in growth.

This is similar to the Resource-Based View (RBV) discussed in Section 1.2.2. Essentially, RBV states that firm is given competitive advantage through the combination of resources that are heterogeneous, have an ability to preserve their heterogeneity inimitable, and have imperfect factor mobility (Alvarez & Busenitz, 2001). The entrepreneur remains central to RBV in recognising the opportunity, assembling and organising resources into a firm to match the opportunity for exploitation and superior performance (Alvarez & Busenitz, 2001; Wiklund & Shepherd, 2003).

The researchers of high growth enterprises have aimed to see whether there are demographic related factors that allow HGEs to navigate through this growth process much quicker than their counterparts (Delmar et al., 2003; Audrestch, 2012; Goedhuys & Sleuwaegen, 2010).

The demographics that have seemed to hold true through empirical testing have been largely related to size and age with regards to growth. This research has also found that the negative relationship between size-age and growth holds true in the South African context. Therefore, the focus on SMMEs for growth is warranted due to size and age. However, identifying and developing all the resources mentioned in Hypothesis 1 such that they result in a unique value proposition of each firm and the ability to navigate through the growth stage and solve its challenges quickly could be more useful in just focusing on the presence of each element.

We can conclude by saying that it is the organisation of resources by entrepreneurs (founders' experience, founders' education, financial capital, new knowledge and international markets) into unique combinations that result in firm performance and growth (Alvarez & Busenitz, 2001; Wiklund & Shepherd, 2003).

5.4 Discussion pertaining to Research Question 2: Hypothesis 2a and Hypothesis 2b

Table 51: Hypothesis 2a and Hypothesis 2b result

Research Question 2: What drives the employment growth of high growth enterprises?	**Hypothesis 2a:** Entrepreneurial orientation, in terms of innovativeness, risk-taking and proactiveness, impacts the employment growth of high growth enterprises. **Hypothesis 2b:** There is a positive relationship between the elements of entrepreneurial orientation and high growth enterprises.	H2a: Supported H 2b: Supported

5.4.1 *Hypothesis 2a*

The Simple Linear Regression analysis showed that elements of entrepreneurial orientation (innovativeness, risk-taking, and proactiveness) have a significant and positive relationship with the employment growth of high growth enterprises . This finding is supported by the literature. Wiklund and Shepherd (2005) found that the dimensions of entrepreneurial orientation (innovativeness, risk-taking, and proactiveness) have a positive influence on small business performance. The small business performance was measured both using financial data and employee growth(Wiklund & Shepherd, 2005).

Specifically, Wiklund and Shepherd (2005) found that businesses that have limited access to financial capital, operating in a stable environment benefit most by adopting entrepreneurial orientation.

Kraus et al., (2012) found that firms that were proactive performed better in an economic crisis and those that were innovative performed better in turbulent

environments. However, firms that were innovative, had to minimise their risk-taking behaviour and avoid projects that are too risky (Kraus et al,2012).

While this research only looked at the relationship between entrepreneurial orientation (EO) employment growth (performance). Kraus et al. (2012), and Wiklund and Shepherd (2005) allude to how the adoption of EO as a strategy is particularly relevant in different contexts such as when there is limited financial capital, a stable environment, or an economic crisis. The constraint of financial capital is particularly relevant in the South African context(Henderson, 2002). Adopting an EO proclivity is useful in overcoming financial capital constraint and navigating a path to growth.

We can conclude that firms who entrepreneurial orientation proclivity in their strategy and decision-making perform better in terms of employment growth.

5.4.2 *Hypothesis 2b*

The Binary Logistic Regression analysis showed a positive relationship between entrepreneurial orientation (innovativeness, risk-taking, and proactiveness) and high growth enterprises.

The definition of HGEs inherently includes a performance measure which is specifically an average revenue growth of 20% per annum over a period of 3 years in this research. Therefore, the finding of a positive relationship between EO and HGEs is supported by many studies that have shown a positive relationship between EO and firm performance (Wiklund, 1999; Covin & Slevin, 1989; Kraus et al, 2012; Wiklund &Shepherd, 2005; Edmond & Wiklund, 2010).

Wiklund(1999) also found that the positive relationship between EO and firm performance is sustainable and actually increases over time. As Wiklund(1999) was longitudinal (over 2 years) and there was a time lag in measuring EO and performance outcomes, this study approximates causality closely.

Taking into account the limited access to financial capital in South Africa, the findings of Wiklund (2005) that EO is specifically beneficial where there is limited access to financial capital in a stable environment. This finding also coincides

with Wiklund (2003) , and Alvarez and Busenitz (2001) using the Resource-Based View. According to Alvarez and Busenitz (2001) for RBV to hold, the firm's resources must be heterogeneous; their heterogeneity must be preserved; be inimitable, and have imperfect factor mobility. Wiklund and Shepherd (2003) argue that EO is strongly related to organising these resources and that this relationship has a positive relationship with firm performance.

We can conclude that EO behaviours a positively related to HGEs and that literature shows this to be beneficial where there is limited access to financial capital (Wiklund & Shepherd, 2005). We can also argue that literature shows the positive relationship between EO and firm performance to be sustainable and increase over time (Wiklund 1999). As firm performance is inherently in the HGE definition (through revenue growth). We can conclude that the positive relationship between EO and HGE is sustainable and increases over time (Wiklund, 1999). Given that Wiklund (1999) approximated causality between EO and firm performance, the same may be inferred about the positive relationship between EO and HGEs.

5.5 Discussion pertaining to Research Question 3: Hypothesis 3a and Hypothesis 3b

Research Question 3: Can the selection criteria of venture capital firms predict high growth enterprises?	**Hypothesis 3a:** The selection criteria of venture capital firms influence whether firms will become high growth enterprises.	H3a: Not Supported
	Hypothesis 3b: The selection criteria of venture capital firms are positively related to employment creation.	H3b: Supported

5.5.1 *Hypothesis 3a*

The Binary Logistic Regression analysis showed that the selection criteria of venture capital firms do not predict high growth enterprises.

This research used the measurement model proposed Elango et al, (1995) to measure the selection criteria of venture capitalists at all stages. The selection criteria assesses the characteristics of the entrepreneur, the product, and the market (Elango et al., 1995).The entrepreneur is assessed in terms of being capable of intense sustained effort; evaluating risk and reacting to risk; articulate in discussing the venture; demonstrated leadership; a track record; familiarity to the market and ingenuity (Elango et al., 1995). The product is assessed in terms of being proprietary and unique while the market has to demonstrate a significant growth rate (Elango et al., 1995). There is no significant difference between investors at an early stage through to late-stage investing in the selection criteria (Elango et. al, 1995).

Research shows that these criteria are able to determine enterprises that will ultimately attain high growth (Streletzki & Schulte, 2012; Elango et al., 1995; Dimov & De Clercq, 2006). However, venture capital firms still experience failure rates in their portfolios meaning that not all selected enterprises ultimately become HGEs (Dimov & De Clercq, 2006). Many researchers have done studies to determine factors that influence portfolio failure. A significant research to note is a 12-year longitudinal study by Dimov & De Clercq (2006) examining 200 Venture capital firms in the US. Specifically they found that the more specialised a Venture capital firm was in terms of competence, this reduced failure of selected ventures (Dimov & De Clercq, 2006). They also found that co-operating with other investors for deal syndication actually increased failure (Dimov & De Clercq, 2006).

We can conclude that the selection criteria of venture capitalists cannot predict high growth enterprises as they are many other factors within venture capital firms themselves that influence the growth of selected enterprises.

5.5.2 *Hypothesis 3b*

The Simple Linear Regression analysis showed that there is a significant relationship between the selection criteria of venture capital firms and the employment creation of high growth enterprises.

Davila, Foster, and Gupta (2003) using Signalling Theory found that the receipt of a firm of venture capital funding increases the number of employees employed by that firm in months prior and after the funding event. The evidence of a relationship between employment growth and funding events may suggest that start-ups delay growth due to lack of financial capital (Davila et al., 2003). New ventures face significant legitimacy constraints due to their newness (Zimmerman & Zeitz, 2002). The overcoming of legitimacy constraint is essential in order for the new venture to obtain more resources (Zimmerman & Zeitz, 2002). Davila et al. (2003) also argue that due to the rigorous selection criteria of Venture capital Firms, a selected enterprise is given legitimacy and is then able to attract more resources that include appropriately skilled employees. Employee growth is then the effect of the Signalling of venture capital firms through their selection criteria .

We can conclude that the selection criteria of venture capital firms is positively related to employment creation of enterprises that may be HGEs through based on Signalling Theory and overcoming legitimacy constraints (Davila et al., 2003; Zimmerman & Zeitz, 2002).

5.6 Discussion pertaining to Research Question 4: Hypothesis 4

Research Question 4: What is the impact of value-adding activities on the employee growth of enterprises?	**Hypothesis 4:** The employment growth of high growth enterprises is influenced by the value-adding activities of venture capital firms.	H4: Not Supported

The Simple Linear Regression analysis showed that there is no significant relationship between the value-adding activities of venture capital firms.

In this research, this is primarily due to only 11 respondents out of 137 respondents having received an equity investment from Seed institutions and/or venture capitalists and therefore being the only respondents to experience the value-adding activities of venture capital firms or equity seed institution investors. This again highlights the nascent nature of venture capital and equity investment as well as a gap in seed stage investment in South Africa.

We can conclude that due to very few enterprises having received equity investments from venture capital firms or seed institutions, we cannot determine the impact that value-adding activities of these institutions on employment growth of HGEs.

5.7 Conclusion

From Descriptive analysis and the demographic profile of respondents in this research, we can conclude that:

- There are still many definitions of HGEs in literature and very few tested definitions of HGEs in the South African context. This research has defined HGEs as growing above 20% on average per annum over 3 years. Many of the findings coincided with previous literature showing that this definition was appropriate for the sample size of 137 respondents.
- This research has shown the negative relationship between size-age and growth to hold in the South African context as well affirming previous global research.
- HGEs in the South African context significantly create more employment than their non-HGE counterparts affirming previous research.
- HGEs use more equity to fund their businesses at Seed stage than non-HGEs and find access to financial capital more insufficient than non-HGEs. Again, this highlights the need for equity investment (rather than debt) at Seed stage to facilitate potential non-HGEs to HGEs.

From Hypothesis 1, we concluded that it is the organisation of resources by entrepreneurs (founders' experience, founders' education, financial capital, new knowledge and international markets) into unique combinations that result in firm performance and growth rather than the presence of individual elements (Alvarez & Busenitz, 2001; Wiklund & Shepherd, 2003). We stated that this conclusion emphasised the theory of the growth of the firm by Penrose (1959) in that firms follow a growth path in stages and that each stage presents challenges that need to be overcome in order to proceed to the next stage. It is the unique combination of these resources (with reference to Resource Based View) that allow the firm to build specific competencies to navigate a growth path (Garnsey, 1998).

In Hypothesis 2a and 2b, we concluded that entrepreneurial orientation (EO) is positively related to firms becoming high growth enterprises and that EO drives the employment growth of HGEs close to the point of causality (Wiklund, 1999). This is a significant finding that fills a gap in research regarding the prediction of which enterprises will ultimately become high growth enterprises . Furthermore, EO seems to be particularly beneficial when there is limited access to financial capital as is the case in South Africa. Wiklund (1999) also found that the relationship between EO and superior performance is sustainable and actually increases over time. This again emphasises the relationship between EO and the high growth of enterprises in terms of revenue growth and employment growth.

In Hypothesis 3a and 3b, we found that the selection criteria of Venture capital firms (at all stages) alone is not sufficient to predict high growth enterprises due to other factors that influence venture capital firms themselves (Dimov & De Clercq, 2006). However, we found that the selection criteria of venture capital firms is positively related to the employment growth of high growth enterprises . Mainly due to the effect of Signalling Theory and the overcoming of legitimacy constraints, selected ventures are able to attract and retain appropriately skilled employees (Davilla et al., 2003; Zimmerman & Zeitz, 2002).

6 CHAPTER 6: CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter summarises the overall conclusions of the study. It then proceeds to provide implications and recommendations for policy-makers and other stakeholders. Limitations of the study and suggestions for future research are provided.

6.2 Conclusions of the study

Overall, we can conclude that high growth enterprises (HGEs) in South Africa create a significant amount of jobs than those that are not (non-HGEs). This is in line with previous research (Audretsch, 2012; Goedhuys & Sleuwaegen, 2010). entrepreneurial orientation significantly determines whether enterprises will become HGEs or not and significantly drives the employment growth of HGEs. This study significantly fills a gap in HGE research through this finding. Previous researchers have confirmed a positive relationship between entrepreneurial orientation and firm performance (Wiklund, 1999; Covin & Slevin, 1989; Kraus et al, 2012; Wiklund &Shepherd, 2005; Edmond & Wiklund, 2010) Other factors such as founders' years of experience in a particular industry and education do influence HGEs, however not significantly. It is rather the problem-solving ability of enterprises through the unique combination of resources that are beneficial for growth. This finding is in line with research regarding the growth stages of the firm as well as the Resource-Based View (Alvarez & Busenitz, 2001; Garnsey, 1998).

Most HGEs in South Africa have funded themselves and use equity instruments at seed stage showing that there is a need to bridge the equity seed capital gap in South Africa.The gap in seed stage in South Africa has been found by previous researchers (Aspen Network of Development Entrepreneurs, 2015; Herrington & Kew, 2016). venture capitalists through their selection criteria are able to add

more credibility to HGEs resulting in increased access to resources and employment creation as found in this study and in previous research (Davilla et al., 2003; Zimmerman & Zeitz, 2002). However, the selection criteria of venture capitalists alone cannot predict which enterprises will be HGEs due to the constraints that exist in venture capitalists themselves (Dimov & De Clercq, 2006).

Finally, South African enterprises are yet to fully benefit from the value-adding activities of venture capital firms due to the niche and nascent nature of the venture capital eco-system in South Africa (Aspen Network of Development Entrepreneurs, 2015). Research shows that in a nascent venture capital market, the government can play a role in developing seed stage venture capital and therefore the entire venture capital eco-system (Balazs, 2014).

6.3 Implications and Recommendations

The implications for policy-makers concerned with creating a conducive environment for high growth enterprises are as follows:

- There is a need to rethink the identification of high growth enterprises (HGEs) as being related to founders' experience, industry knowledge, and market acceptance. entrepreneurial orientation must begin to take centre stage in the identification of high growth enterprises.
- The implication of entrepreneurial orientation taking centre stage in the identification of HGEs means that policy-makers and other stakeholders need to embrace the innovativeness, risk-taking and proactiveness behaviours of entrepreneurs instead of shying away from them.
- The heavy reliance on debt funding through Development Funding Institutions is not appropriate for HGEs; equity instruments are more appropriate.

The implications on South African venture capital firms that are concerned with identifying and funding high growth enterprises are as follows:

- There is a greater need to add legitimacy at seed stage for HGEs; therefore more venture capital firms should be involved at this stage of financing.
- The entrepreneurial orientation of potential investees should begin to take centre stage particularly at seed stage where the enterprise would not have yet proved market acceptance.

The implications on researchers are to find a unified definition of HGEs or in its absence to contribute to the typology of HGEs.

6.4 Limitations of the study

This research was subject to time constraints which affected the sample size and the re-iteration of the HGE definition. The relationship between value-adding activities and high growth enterprises could not be unpacked as the only 11 respondents had received value-adding activities.

The sample size of the study is statistically significant; however, a larger sample size would greatly benefit future research in this area.

The study is limited in terms of explaining causality due to its cross-sectional research design. However, the study builds on literature review of a longitudinal nature to explain relationships between variables.

6.5 Suggestions for further research

Understanding the definition of HGEs within the South African context warrants more empirical research. Continuing the work of Wiklund (2003) that places entrepreneurial orientation within the Resource Based View will be a potentially good research. A longitudinal study to examine the impact of entrepreneurial orientation on performance within the South African context is also important in approximating causality. Finally, a longitudinal study on the impact of value-adding activities of enterprises will be good to determine which activities seed institutions and venture capitalists as a whole should focus on to further support high growth enterprises .

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APPENDIX A

Research Instrument

Final_Research: Master of Management in Entrepreneurship and New Venture Creation

Masters Survey: High Growth Entrepreneurship & Seed Capital

* 1. Please indicate your position in the company.

- ◯ I am the founder of the company.
- ◯ I am part of the executive management team of the company.
- ◯ I am the director of the company
- ◯ Other (please specify)

* 2. The business has been operating for 3 years or more and is registered with the Companies and Intellectual Property Commission (CIPC).

- ◯ Yes
- ◯ No

2

Final_Research: Master of Management in Entrepreneurship and New Venture Creation

Continue with Survey

* 3. Please select the sector which your business operates in.

- ◯ Agriculture
- ◯ Mining and Quarrying
- ◯ Manufacturing
- ◯ Electricity, gas and water supply
- ◯ Construction
- ◯ Retail and Motor Trade and Repair Services
- ◯ Other (please specify)
- ◯ Wholesale Trade, Commercial Agents and Allied Services
- ◯ Catering and Accommodation
- ◯ Transport, Storage and Communication
- ◯ Finance and Business Services
- ◯ Community, Social and Personal Services

* 4. How many years did you work in the field of your current business before starting/joining this business?

- ◯ 0 - 2 years
- ◯ 3 - 5 years
- ◯ 6 - 8 years
- ◯ 9 years and above

* 5. What is the highest level of education you have completed?

- ◯ Below Matric/Grade 12
- ◯ Matric/Grade 12
- ◯ Diploma
- ◯ Degree
- ◯ Other (please specify)
- ◯ Honours
- ◯ Masters
- ◯ PhD

* 6. How much annual revenue, in Rands, did you generate in each year for the past 3 years?

Revenue Year 1:

Revenue Year 2:

Revenue Year 3:

* 7. How many employees were employed on a full-time basis in your business each year for the past 3 years?

Year 1:

Year 2:

Year 3:

* 8. Please enter the following information in numbers

Total number of years in operation:

Total Assets Excluding Fixed Assets (Property):

* 9. Are you satisfied or dissatisfied with your business' access to capital?

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
Access to capital is insufficient and a great impediment for our development							
Access to capital is fully satisfactory for the firm's development							

* 10. Your business was founded...

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
Based on new knowledge, invention or discovery							
With the intention of penetrating international markets from the onset							

EO, Access to Capital and Environment

* 11. In general, the top managers of my firm favor...

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
A strong emphasis on the marketing of tried-and-true products or services	○	○	○	○	○	○	○
A strong emphasis on R&D, technological leadership, and innovations	○	○	○	○	○	○	○

* 12. How many new lines of products or services has your firm marketed in the past five years (or since its establishment)?

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
No new lines of products or services	○	○	○	○	○	○	○
Very many new lines of products or services	○	○	○	○	○	○	○
Changes in product or service lines have been mostly of a minor nature	○	○	○	○	○	○	○
Changes in product or service lines have usually been quite dramatic	○	○	○	○	○	○	○

* 13. In dealing with its competitors, my firm . . .

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
Typically responds to actions which competitors initiate	○	○	○	○	○	○	○
Typically initiates actions to which competitors then respond	○	○	○	○	○	○	○
Is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc.	○	○	○	○	○	○	○
Is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.	○	○	○	○	○	○	○
Typically seeks to avoid competitive clashes, preferring a "live-and-let-live" posture	○	○	○	○	○	○	○
Typically adopts a very competitive, "undo-the-competitors" posture	○	○	○	○	○	○	○

* 14. In general, the top managers of my firm have . . .

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
A strong proclivity for low-risk projects (with normal and certain rates of return)	○	○	○	○	○	○	○
A strong proclivity for high-risk projects (with chances of very high returns)	○	○	○	○	○	○	○

* 15. In general, the top managers of my firm believe that . . .

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
Owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behavior	○	○	○	○	○	○	○
Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives	○	○	○	○	○	○	○

* 16. When confronted with decision-making situations involving uncertainty, my firm . . .

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
Typically adopts a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions	○	○	○	○	○	○	○
Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities	○	○	○	○	○	○	○

* 17. Please rate the extent to which you as the entrepreneur of executive manager:

	Strongly Disagree 1	2	3	4	Strongly Agree 5
is capable of sustained intense effort	○	○	○	○	○
is able to evaluate and react well to risk	○	○	○	○	○
articulate in discussing the venture	○	○	○	○	○
has demonstrated leadership ability	○	○	○	○	○
is thoroughly familiar with the market	○	○	○	○	○
has a track record relative to the venture	○	○	○	○	○
is ingenious	○	○	○	○	○

* 18. Please rate the extent to which your product:

	Strongly Disagree 1	2	3	4	Strongly Agree 5
is proprietary	○	○	○	○	○
is unique	○	○	○	○	○
has demonstrated market acceptance	○	○	○	○	○

* 19. Please rate the extent to which the market:

	Strongly Disagree 1	2	3	4	Strongly Agree 5
will be free of significant competition for the next three years	○	○	○	○	○
enjoys a significant growth rate	○	○	○	○	○

* 20. Did you receive any equity investment from any Seed Institution and/or Venture Capital institution?

○ Yes

○ No

Receipt of Equity Investment

* 21. Which type of equity investor did you receive an investment from?

- ◯ Seed Institution: This an institution that provides Seed Capital and Value-Adding Activities to a business at the seed stage.
- ◯ Follow on Investor: This is capital injected by Venture Capital fund managers in the form of Start-up Capital, Developmental Capital, and Growth Capital.
- ◯ Both

* 22. The following Value Adding Activities from my Seed Institution or Venture Capital investor resulted in the growth of my business.

	Strongly Disagree 1	2	3	4	Strongly Agree 5
Evaluate Management	◯	◯	◯	◯	◯
Make Introductions to potential customers and suppliers	◯	◯	◯	◯	◯
Seek additional financing	◯	◯	◯	◯	◯
Serve as entrepreneur's confidant	◯	◯	◯	◯	◯
Make introductions to potential service providers	◯	◯	◯	◯	◯
Recruit Management	◯	◯	◯	◯	◯
Assist with Strategic Planning	◯	◯	◯	◯	◯
Assist with Operational Planing	◯	◯	◯	◯	◯

No equity investment

* 23. How did you finance your business at Seed Stage?

- ◯ Myself
- ◯ Friends and Family
- ◯ Bank
- ◯ Development Funding Institution
- ◯ Other (please specify)

* 24. How did you finance at Growth Stage?

- ◯ Myself
- ◯ Friends and family
- ◯ Bank
- ◯ Development Funding Instituition
- ◯ Other (please specify)

* 25. Which financial instrument did you use to finance your business at Seed stage?

- ◯ Grant
- ◯ Loan
- ◯ Equity
- ◯ Other (please specify)

APPENDIX B – CONSISTENCY MATRIX

Research problem stated here: The Seed Capital funding gap may result in Potential HGEs not transitioning to HGEs					
Sub-problem	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
HGEs hold a large potential for job creation in any economy which South Africa could fail to unlock.	• (Audrestch, 2012)(Goedhuys & Sleuwaegen, 2010) • (Ayyagari et al., 2011) • (Henrekson & Johansson, 2010) • (Bassil et al., 2013) • (Wiklund & Shepherd, 2005)	**Research Question 1**: Are there characteristics that can predict an enterprise being a high growth enterprise? **Hypothesis 1**: There is a positive relationship between (a) Founding team experience and education, (b) access to Financial Capital, (c) international market orientation, and (d) new knowledge, and high growth enterprises . **Research Question 2:** What drives the employment growth of high growth enterprises ? **Hypothesis 2a**: entrepreneurial orientation, in terms of innovativeness, risk-taking and proactiveness, impacts the employment growth of high growth enterprises .	Quantitative Research Instrument	Nominal	Inferential Statistics

		Hypothesis 2b: There is a positive relationship between the elements of entrepreneurial orientation and high growth enterprises .			
There is a Seed Capital gap in South Africa. Government can play a role in bridging this gap.	▪ (Southern African Venture capital and Private Equity Association, 2015) ▪ (Balazs, 2014) ▪ (Lerner, 2010) ▪ (Marsh Africa, 2013) ▪ (Elango et al., 1995) ▪ (Kumar, 2015) ▪ (Soo, 2017)	**Research Question 3:** Can the selection criteria of venture capitalists predict high growth enterprises ? **Hypothesis 3a:** The selection criteria of Venture capital firms influence whether firms will become high growth enterprises . **Hypothesis 3b:** The selection criteria of Venture capital firms are positively related to employment creation. **Research Question 4:** What is the impact of Value-Adding Activities on the employee growth of enterprises? **Hypothesis 4:** The employment growth of high growth enterprises is influenced by the value-adding activities of Venture capital firms.	Quantitative Research Instrument	Nominal	Inferential Statistics

APPENDIX C – SCHEDULE CLASSIFYING SMMES

Table 52: Schedule Classifying SMMEs

Column 1	Column 2	Column 3	Column 4	Column 5
Sector or Subsector in accordance with the Standard Industrial Classification	Size of Class	The total full time equivalent of paid employees	Total turn-over	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	R10m	Rm
	Small	50	R4m	Rm
	Very Small	20	R0.20m	Rm
	Micro	5	R0.20m	R0.10m
	Medium	200	R51m	R19m

(National Small Business Amendement Act, 2003, 2003, p. 8)