The influence of human capital elements on job creation by small and medium enterprises in South Africa

Research Article

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A research article 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 Business Administration
Johannesburg, 2019

DECLARATION

I, Dieketseng Tsepuoe Meletse, declare that this research article 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 Business Administration in the Graduate School of Business Administration, University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

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Signed at ……

On the …….. day of …… 20…..

SUPPLEMENTARY INFORMATION

Nominated journal:	Southern African Journal of Entrepreneurship and Small Business Management
Supervisor / Co-author:	Dr Jabulile Galawe
Word count †: 13 691	
Supplementary files:	Research instrument

† Including abstract, references, etc.

ABSTRACT

Background: There is a significant body of research supporting a narrative that small and medium sized enterprises (SMEs) play a key role in promoting economic development and enhancing job creation. However, SMEs are also characterised by high failure rates. Given their potential to create jobs, SMEs in South Africa do not yield the much needed jobs despite government programmes to enhance SME job creation. The importance of determining which entrepreneuship capital elements foster SME success the most cannot be overemphasised; human capital being the focus of this study.

Aim: Human capital is broad, and this study aims to determine which of its elements influence job creation the most. The study therefore contributes to existing research by assisting government to prioritise limited resources to areas which will yield job creation the most in the SME cluster.

Setting: The scope of this research is limited to entrepreneurs who own SMEs that employ fewer than 201 employees and are based in South Africa. The sample is across all stages of entrepreneurship.

Methods: The study used secondary data of a survey which was initially conducted for another study. In an attempt to determine the influence of different human capital elements on SME job creation, a correlation and logistical regression analysis were conducted on various elements of human capital.

Results: The findings suggest that general human capital influences SME job creation the most. Additionally, no statistically significant evidence was found to suggest that entrepreneurship specific human capital influences SME job creation.

Conclusion: The study concludes that general human capital (formal general education and work experience) are preconditions of SMEs' ability to create jobs and serves as a basic building block of entrepreneur trainability on other forms of human capital.

INTRODUCTION

Entrepreneurship, particularly in the small and medium enterprises (SMEs) environment has drawn the attention of many, being regarded as a driver of economic growth and job creation. One of the characteristics of a growing and flourishing economy is a booming SME sector (Kongolo, 2010). SMEs contribute to economic development in a number of ways: by creating employment for the rural and urban labour force, enhancing and fostering innovation (Fida, 2008). There is a significant body of research supporting a narrative that SMEs play a key role in promoting economic development and enhancing job creation (Abor & Quartey, 2010; Galindo & Méndez, 2014; Hunjra, Rehman, Azam, & Khan, 2011).

Studies have found an inherent positive relationship between entrepreneurship and forces that shape economic prosperity (Galindo & Méndez, 2014). SMEs continue to play a vital role in growing economies, given their flexible nature to respond to systemic changes when compared with their large established counterparts. Furthermore, SMEs tend to have a large propensity for being labour intensive with low capital requirements and they are seen as the engines for job creation (Jasra et al., 2011; Kongolo, 2010).

Despite the positive commendation on the contribution of SMEs to economic development and job creation, they are also characterised by high failure rates (Fatoki, 2011; Rogerson, 2008), rendering their potential as just a far-fetched, unrealistic pipe dream. Unemployment remains a challenge in many countries globally, and this picture is even more prevalent in South Africa. Unemployment rates in South Africa reached a record high of 27% in 2016 (StatisticsSA, 2016) and to date, there has not been much improvement.

Although SMEs in South Africa have been reported to be employing half of the working population and contributing significantly to the gross domestic product (GDP), their failure rate has been estimated to range between 70% and 80% (Brink, Cant, & Ligthelm, 2003; Mutyenyoka & Madzivhandila, 2014).

South Africa's main social challenges remain high income inequality, high levels of poverty and high levels of unemployment (Herrington, Kew, & Mwanga, 2017). The unemployment rate continues to remain stubbornly high, and so does the SME failure rate; both which are among the highest in the world.

The country's unemployment problem is structural in nature, part of which emanates from the legacy of its past on access to land, capital, education and skills for the majority of the population. This is also evident in the labour force statistics of Quarter 1 (StatsSA, 2016) where 48% of employed white people have a tertiary education, a group that only represents a small proportion of the labour force. This is followed by 32% and 15.5% of the Indian and coloured workforce respectively. At the tail end lies black Africans, a group which represents the largest proportion of the workforce, with only 15% of the employed workforce having tertiary qualifications (StatsSA, 2016, p. xii).

Since the dawn of democracy, the South African government has crafted a number of strategic policies to improve the lives of the people through improved economic performance and job creation. This gave birth to the reconstruction and development plan (RDP), which emphasised support for SMEs as a vehicle to create jobs and sustainable skills. A few years later, the RDP was replaced by GEAR (Growth, Employment and Redistribution), a policy which paradoxically focused on a market-friendly and non-interventionist set of economic policies (Ponte, Roberts, & van Sittert, 2007).

Lastly, in 2013, the National Development Plan 2013 (NDP) was released by the National Planning Commission appointed by the presidency of the Republic of South Africa. The plan outlines a number of objectives which include the creation of 11 million new jobs, thus reducing the unemployment rate to 6% by 2030 (National Planning Commission, 2013). While the challenges of unemployment in South Africa may be linked to many factors, the South African government seems to have most of its hopes on SMEs as the NDP foresees 90% of new jobs coming from this sector (National Planning Commission, 2013).

To deliver this ambition, the government plans to focus on enablers or levers, such as public and private procurement, improved access to finance, equity capital, simplified regulatory environment and support services. Are these the correct focus areas given the limited resources? In order to assess whether or not the South African government is on the right track towards realising its 2030 ambition, it is important to understand what factors will enable SME job creation.

Despite the efforts made by the South African government to promote small and medium enterprises, this seems to have borne little to no fruit in reducing unemployment levels. This problem attracted the attention of many researchers who hold diverse views on how the unemployment problem in South Africa should be resolved. The focus of this study was on SMEs and their ability to create the much-needed jobs in South Africa.

While small businesses account for the majority of jobs created, they also hold a large share in the number of jobs lost in South Africa. Therefore large firms remain better net job creators than small firms (Kerr, Wittenberg, & Arrow, 2014). The majority of unemployed people are comprised of either young entrants who have never had a job, or long-term unemployed people with non-transferable skills (Chandra, Moorty, Nganou, Rajaratnam, & Schaefer, 2001). Consequently, this pattern suggests that the SME cluster in its current state may not provide such a strong engine of job creation for poor and unemployed people. Linking this to the profile of the unemployed in South Africa, indeed, an overwhelming majority do not possess the necessary human capital to contribute positively to SME survival, success and ultimately the ability to grow and create jobs.

The competitive nature of the global economy also requires optimum productivity, which implies that SMEs in their current state cannot accommodate the unskilled labour force in their operations (Mutyenyoka & Madzivhandila, 2014). The majority of new jobs are created by high quality, high growth firms, the characteristics of which are innovation, human capital, growth ambition and market orientation (Ngek & van Aardt Smit, 2013).

The challenge facing South Africa is the inability of the economy to absorb the unemployed due to a mismatch between the skills required by the economy and the skills offered by the unemployed. This has drawn the attention of many scholars in the field of entrepreneurship, an overwhelming majority of whom are finding human capital as one of the key determinants of SME success (Guerrero, Urbano, & Fayolle, 2016; Hashi & Krasniqi, 2011; Islam, Mian, & Ali, 2009; Jasra et al., 2011). A strong correlation has been found between human capital and SME performance (Fatoki, 2011; Islam et al., 2009; Lopa & Bose, 2014; Man, 2001), the absence of which is, unfortunately, prevalent among unemployed South Africans (StatisticsSA, 2016).

Taking note of these positive commendations on the effect of human capital on SME performance, it is important also to note that human capital on its own is broad as it comprises a number of dimensions or elements, such as formal education, entrepreneurial education, experience, business-related training, etc. While other studies attempted to determine factors affecting SME performance at a broader level, including social, financial and human capital (Islam et al., 2009), others have attempted to assess the effect of various entrepreneurial competencies on SME performance. (Lopa & Bose, 2014; Man, 2001).

Some studies have assessed the effect of human capital elements on opportunity identification and pursuit (Ucbasaran, Westhead, & Wright, 2008); however, critics argue that opportunity identification and pursuit are by no means sufficient and reliable indicators of SME performance (Dimov, 2010). His study on the other hand focused only on the nascent phase of entrepreneurship and assessed the impact of various human capital elements on venture creation and emergence (Dimov, 2010), however, this does not give an indication of whether these human capital elements will result in SME performance beyond the venture creation and emergence phase.

This study attempts to close this gap and contribute to existing research by exploring which of the human capital elements have the most influence on SMEs' ability to create jobs. Following a narrative by Baptista, Karaöz, and Mendonça (2014), the study hypothesises that SMEs that have

high levels of performance are those that will be able to create sustainable jobs; and those that do not perform, run the risk of failure and will ultimately shed jobs.

Human capital theory (Becker, 1962, 1994) has been linked with entrepreneurship theory (Casson, 2005) which suggests that the entrepreneur must have organisational skills and professional qualifications for decision making related to the strategic direction of the firm. This study follows the human capital theory in categorising the phenomenon into general human capital and entrepreneurship specific human capital; in an attempt to answer the following research questions:

1. What is the influence of various human capital elements on SME ability to create jobs?
2. Which of these elements influence SME ability to create jobs the most?

Given the tight fiscal budget, slow economic growth increased structural unemployment and income inequality, it is vital that the South African government channels its limited resources to aspects that will yield the most results. This study is therefore envisaged to contribute further to the existing research with the aim of assisting policy makers, entrepreneurs and other stakeholders to prioritise resources on human capital elements that will yield the most results on improving SME ability to create jobs.

The scope of the study is limited to SMEs in South Africa, in all the provinces irrespective of whether in rural, semi-developed or developed areas. The size of the SMEs in this study is limited to businesses employing fewer than 201 employees.

LITERATURE REVIEW

This section defines the key constructs, highlights theoretical concepts underpinning the approach of the study and provides a review of existing literature that formed the basis of the variables used and the proposed hypotheses. This also includes the conceptual framework and development of the hypotheses.

Small, Medium and micro enterprises

Small, medium and micro enterprises are abbreviated and mostly referred to as SMMEs. According to the National Small Business Act 102 of 1996, as amended in 2004, small business means:

"A separate and distinct business entity, including cooperative 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 I 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;"

Table 2.1: Categorisation of SMEs in South Africa

Type of enterprise	Employees	Turnover	Gross asset value
Small, very small and micro	1-50	Less than 15MZAR	Less than 4,5MZAR
Medium	51-200	15MZAR-50MZAR	4,5MZAR-18MZAR

Source: Adapted from National Small Business Act 102 of 1996 (South Africa, 1996)

The act classifies SMMEs by the sector, number of employees, total gross asset value, and turnover, as indicated in table 2.1. The phrase SMME is used in South Africa; however, given that the literature reviewed emanates from various countries which use the phrase SME, this study uses the latter only as a phrase, although the definition applicable is that of the National Small Business Act 102 of 1996 (2004).

Entrepreneurship

There is no single accepted definition of entrepreneurship (Hattab, 2014; Tustin, 2015); and a point of departure is to explore literature on the definition of entrepreneurship. Entrepreneurship has been defined by some as the process of assuming the risk of establishing a business, developing winning strategies and executing them with all the passion and persistence needed to win any game (McClelland, 1987).

Hattab (2014) defined the term as a process of converting an idea into a value-added product or service, while Shane and Venkataraman (2000) defined it as discovery, evaluation and exploitation of opportunity. Lopa and Bose (2014) explained that an entrepreneur is one who assumes risks and is likely to adopt innovation. Based on the above, one can reconcile that an entrepreneur is a person who has a moderate risk appetite and who is willing to take risks to see an idea develop into a commercialised product or service while continuously developing winning strategies.

Human capital

Human capital is defined by Vargas, Lloria, and Roig-Dobón (2016) as the sum of knowledge of the members within an organisation, which forms part of the intellectual capital of the organisation. Other forms of intellectual capital are structural capital (physical, organisational structure) and customer capital (knowledge about an organisation's relationship with business partners, clients, strategic alliances, etc.). Being the intangible part of the organisation's intellectual capital, human capital has been found to be the most influential and the most difficult to encode. Human capital has also been associated with innovation and has been depicted as an indispensable source of value creation (Alegre, Pla-Barber, Chiva, & Villar, 2012). Some defined human capital as a combination of all capabilities, knowledge and experience of employees (Edvinsson & Malone, 1997).

Theoretical concepts

One of the most influential theoretical concepts of human capital is that of Becker (1962, 1993) who distinguished between general and specific human capital and argued that general human capital encompasses knowledge and skills that are easily transferrable among different economic settings whereas specific human capital involves knowledge and skills that are less transferrable and that have a narrower scope of applicability.

The theory of human also suggests that the expansion of scientific and technical knowledge increases productivity of labour and other inputs of production capital (Becker, 1964, 1994). Additionally, it goes on to assert that countries that have managed persistent growth have also had large increases in the education and training of their labour forces (Becker, 1964, 1994). This theory has stimulated considerable interest and has been adopted by a number of researchers in the field of entrepreneurship (Frese et al., 2007; Mamabolo, Kerrin, & Kele, 2017; Unger, Rauch, Frese, & Rosenbusch, 2011).

Ganotakis (2012) linked the human capital theory and the theory of entrepreneurship which states that the responsibility of decision making and speciality related to a firm's strategic direction rests with the entrepreneur (Casson, 2005). Furthermore, entrepreneurs should have appropriate organisational skills that encompass both professional qualifications and experience. These capabilities are what will define firm performance (Casson, 2005). It has also been argued that technical and business education will be expected to have a positive effect on the performance of high technology firms (Ganotakis, 2012).

Human capital and SME job creation

The motives of venture start-up vary from entrepreneur to entrepreneur, and these can include but are not limited to those who leave employment to start their own businesses in search for independence, and those who start businesses in order to escape unemployment and poverty

(Baptista et al., 2014). The former group tends to be opportunity driven entrepreneurs who possess some level of human capital, including work experience, while the latter tends to be necessity-driven entrepreneurs who possess minimal human capital if any.

Although some small businesses start employing from as early as the start-up phase, at this stage business is vulnerable to possible failures. Wong, Ho, and Autio (2005) inferred that low survival rates of small firms could mean that their contribution to employment is limited, and their study found that having a higher degree of entrepreneurship activity does not guarantee job creation. SMEs in South Africa are generally young start-ups, suggesting that many businesses either never progress or graduate beyond the start-up phase or close down, given the high failure rates (Baptista et al., 2014; Tustin, 2015).

While small businesses account for the majority of jobs created, they also hold a large share in the number of jobs lost in South Africa (Kerr et al., 2014). The first three years post business start-up is regarded as the most critical for survival and success (Santarelli & Vivarelli, 2007), and newly formed firms are less likely to cope with environmental turbulence than their large counterparts (Baptista et al., 2014). Consequently, as important as new business start-ups are to economic development, innovation and productivity; survival beyond the start-up phase is more important for the creation of sustainable jobs; therefore, making an effort to cultivate SME performance and ultimately, survival, will enable the sector to contribute positively to job creation.

Some of the top challenges impeding SMEs ability to create jobs in South Africa are severe skills shortages among other factors; placing significant constraints on SME development (Tustin, 2015). While broad entrepreneurship interventions are important, Tustin (2015) argues that the key to SME job creation is more about entrepreneurial capacity than entrepreneurial opportunities and this sentiment is also shared by a number of authors (Fatoki, 2011; Islam et al., 2009; Lopa & Bose, 2014; Olawale & Garwe, 2010).

Kongolo (2010) argues that the environment in South Africa is also not conducive for SMEs to thrive and create jobs. Although he recommends that government and the private sector provide technical and financial assistance while eliminating bureaucratic inefficiencies and burdensome regulations, he also acknowledges that the aforementioned development can only be achieved through increased productive capacity; human capital being its precondition.

In their study to examine the determinants of SME performance, Jasra et al. (2011) found that entrepreneur skills, financial resources, government support, technological resources and marketing strategies have a positive and significant impact on business success. Following up on this narrative, this study argues that sound marketing strategies and technological resources depend on a certain level of human capital, such as knowledge, experience, etc. Therefore, the entrepreneur profile of the country will determine the success rate of SMEs; and different types of entrepreneurs have different implications for economic growth. Necessity driven entrepreneurs who have been found to be possessing the least human capital may not contribute significantly to job creation when compared with their opportunity driven counterparts because escaping poverty and unemployment is more of a priority to them than growth (Hashi & Krasniqi, 2011).

Tustin (2015) suggests an expansion of the education curriculum to improve the capabilities and motivate learners to engage in entrepreneurial activities. Additionally, he recommends that practical programmes be implemented with qualified and credible educators. This will not only improve the self-efficacy of the young entrepreneurs, but it will also enhance the entrepreneurial culture which was also found to be enhancing SMME growth (Hechavarría, 2016). Leveraging on entrepreneurial competencies is key to entrepreneurs who aim for high performance (Lopa & Bose, 2014).

According to Hashi and Krasniqi (2011), the quality of human capital reflected in education, training and experience of employees and business owners, is expected to have a positive effect on SME growth. This is also seen in the work of Hoxha (2008), who argued that human capital

complements technology and innovation, positively influencing productivity and growth. The cognitive process by which the individual discovers an opportunity, as well as decides to act on it, has been the focal point of entrepreneurship research (Audretsch & Keilbach, 2007). Therefore, opportunity exploitation depends on personal attributes such as self-efficacy, prior knowledge and experience (Shane & Venkataraman, 2000).

Many economists traditionally consider knowledge diffusion as a vital element in the innovation process – a key factor in encouraging entrepreneurial activity and economic growth. Other traditional literature, however, warns that innovation has a negative impact on employment, given that unemployment rates will reduce due to technology taking the place of humans (Mortensen & Pissarides, 1998 as cited in Galindo & Méndez, 2014). In reconciling the two narratives, what remains as a common denominator is that either way, this gives rise to the need for continuous investment in human capital to ensure that humans keep up with the changes in the environment and stay relevant as innovation and artificial intelligence, among others, continue to change the traditional operation of the business world.

This study has drawn important lessons from the work of Mamabolo et al. (2017), who argued that different stages of a business use different human capital elements, which were categorised following Ucbasaran et al. (2008). Mamabolo et al. (2017) specifically looked at the prevalence of human capital elements at different stages of entrepreneurship. Their study found that entrepreneurship experience was used across all phases, with the nascent and new business stage showing more prevalence. Entrepreneurship education was found to be used more by established businesses than those at other stages.

Many studies which examined the role of human capital on SME performance have predominantly looked at the Nascent stage (Davidsson & Honig, 2003; Dimov, 2010; Ucbasaran

et al., 2008; Unger et al., 2011). Becker (1962); Ucbasaran et al. (2008) regarded an entrepreneur's general education and work experience as a surrogate measure of general human capital while the variables associated with prior business ownership experience and self-efficacy are regarded as measures of entrepreneurship specific human capital. The authors found that higher levels of education, work experience, business ownership experience and managerial capability were significantly associated with an increased probability of opportunity identification and pursuit. Dimov (2010) however, advocates differently and argues that before a venture starts, an opportunity remains just an idea. He argues that pursuing an opportunity is by no means a sufficient and reliable predictor that a venture will emerge, and his study found that entrepreneurial experience does not necessarily influence nascent entrepreneurs' persistence beyond the start-up phase.

Following Ucbasaran et al. (2008), human capital is categorised into general human capital and entrepreneurship specific human capital. General human capital usually comprises formal general education and past employment experience. General human capital can be applied anywhere and is not necessarily industry specific (Mamabolo et al., 2017). Entrepreneurship specific human capital may include specific experiences such as past business ownership, industry experience, specific technical experience and managerial, business and commercial experience. Formal business education, managerial and commercial education also forms part of specific human capital (Ganotakis, 2012).

General human capital

Formal general education: Formal general education refers to basic education and tertiary education that is not business specific, and that can be applied almost everywhere.

Entrepreneurs who possess high levels of formal general education were found to be better positioned to deal with complex problems. In addition, formal general education has been seen as a conduit for social capital in that entrepreneurs may also leverage their social capital acquired through the education system to exploit opportunities (Shane & Khurana, 2003). Furthermore, the ability to solve complex problems is key for entrepreneurs to withstand challenges, such as adverse economic conditions, and still continue to grow and create jobs and formal general education enhances those abilities. Ucbasaran et al. (2008) found formal education has a positive effect on opportunity identification and pursuit; similarly, entrepreneurs endowed with high levels of formal education tend to command higher earnings, enabling them to access funding for their businesses (Baptista et al., 2014).

There is, however, a caution against an overemphasis of formal education as this can have unintended consequences. Entrepreneurs with high levels of formal general education tend to overrate it and hold a narrative that their formal education is all they need for their businesses to perform, thus preventing them from gathering the necessary information from other sources that could have improved their decision making. This could lead to their failure to adapt to the changes in the environment (Ganotakis, 2012). Formal general education was found to be more prevalent at the nascent stage than at the established business stage of entrepreneurship (Mamabolo et al., 2017). This is, however, just prevalence and does not translate into a determination of an influence on the SME's ability to perform and create jobs.

Other studies have found that nascent entrepreneurs with high education levels were more likely to identify opportunities, but not likely to pursue those identified opportunities (Davidsson & Honig, 2003). Therefore, it is critical to understand whether or not formal education remains a key element beyond these stages for SMEs to grow and ultimately create

jobs. Despite some drawbacks of formal general education endowment, this study hypothesises that the benefits far outweigh the drawbacks. Furthermore, additionally, the absence of formal general education is more detrimental to SME job creation than its drawbacks. This is consistent with the findings of Oforegbunam and Okorafor (2010) who found that a unit increase in the level of formal education explains a 31% increase in SME performance. Formal education also enhances trainability and entrepreneur skills development.

H1: Formal general education influences SMEs job creation

General work experience: Entrepreneurs with managerial experience or who have held managerial positions during employment may be endowed with superior levels of general human capital which will enable them to identify and pursue business opportunities (Ucbasaran et al., 2008). However, other studies linked to experience with age and found an inverse U relationship between age and business performance (Ganotakis, 2012) as older age has been found to be reducing entrepreneurial success. That said, people with more work experience and who have performed managerial duties are in a position to not only identify opportunities but are also likely to be able to raise capital, thus setting up larger and better-equipped businesses (Gabrielsson & Politis, 2012). The authors also found that functional work experience positively influenced the generation of business ideas.

Entrepreneurs who have work experience in the same industry in which an SME operates have an advantage, given that industry insiders are likely to be privy to important cost structures, pricing, etc. (Dimov, 2010). This sentiment is also shared by Soriano and Castrogiovanni (2012) who found that experience as a result of having previously worked in a firm in the same industry before starting a business was related to productivity. Business ownership has inherent uncertainties that are often faced by entrepreneurs; these can be related to the value of the goods

or services they plan to offer. Thus, industry experience may enable a better understanding on how to navigate through these challenges to meet demand conditions (Gabrielsson & Politis, 2012).

Baptista et al. (2014) enhance this notion with caution that timing is of great importance if one wants to leverage from industry related work experience. Their narrative is that the longer the time is spent away from industry, the higher the depreciation of industry-specific human capital; hence start-ups whose founders were employed in the same industry right before start-up will draw more benefits from industry-specific human capital. Their study also found that entrepreneurs who have previous work experience tend to be opportunity driven and this increases their probability of survival in the first three years after start-up. They finally argue that there are high opportunity costs (i.e. loss of employment) for entrepreneurs who left work to start businesses and this fuels perseverance; therefore, these entrepreneurs are those who are likely to grow their businesses, create jobs and contribute positively to economic growth (Baptista et al., 2014).

In addition, formal employment experience, in many instances, inherently encompasses cognitive skills and experience required to run a business, such as people management, financial management, planning skills, conflict management, etc., which are more valuable than just classroom courses. Lastly, employees who leave the formal employment environment do not only leave with financial resources and self-efficacy to start a business, they also leave with networks, with colleagues who can assist them with specialised tasks at a low cost. On the job training enhances self-efficacy, ability to identify and pursue opportunities, among other benefits. This study, therefore, expects work experience to have a significant positive impact on SME's ability to create jobs and thus the following hypotheses is developed:

H2: General work experience influences SMEs job creation

- **H2(a):** Past experience status in management position influences SME job creation

- **H2(b):** past experience status in similar work influences SME job creation
- **H2(c):** past experience status-with some work applied influences SME job creation

Entrepreneurial education: Education specific to entrepreneurship may include formal business education, management and commercial education possessed by entrepreneurs. Causal linkages were found between entrepreneurship education relating to managerial skills, social competence and venture effectiveness (Elmuti, Khoury, & Omran, 2012). Unger et al. (2011) argue that entrepreneurs should focus on the acquisition of task-related knowledge because knowledge is more important than past experience. Entrepreneurial education has been found to have a significant impact on SME performance, managerial ability and self-efficacy which in turn, increases the probability of people choosing to be self-employed (Van der Sluis, Van Praag, & Vijverberg, 2008).

A study conducted by Ganotakis (2012) found that a high level of technical education does not necessarily have a positive effect on performance; instead, a combination of technical education and formal business education were found to enhance firm performance. In fact, for even better performance, technical education has to be complemented by managerial capabilities in order to yield positive business performance results (Ganotakis, 2012).

Entrepreneurs with high technical education are likely to retain the majority of the firm's control, and this can impede commercial awareness and competence, threatening its long term survival (Oakey, 2003). Interestingly, none of the entrepreneurial human capital elements, such as business education and pre-start-up experience, were found to be predictors of first sales nor the profitability of the new enterprise (Davidsson & Honig, 2003). In reconciling the above, entrepreneurship education serves as a conduit for SME performance, however, its impact on SME growth and job creation is expected to be limited given its drawbacks and dependence on

other human capital elements; the absence of which may render entrepreneurship education irrelevant.

H3 (a): Entrepreneurial education has a weak influence on SMEs job creation

H3(b): Current business-related training in business has a weak influence on SMEs job creation

H3(c): Current business-related training in finance management has a weak influence on SMEs job creation

Entrepreneurial experience: Specific experience involves business ownership experience, industry related experience, managerial and commercial experience (Ganotakis, 2012). The basic premise of specific experience is that it begins with starting and managing entrepreneurial ventures and can provide expertise to navigate through the uncertainties of starting a new venture (Dimov, 2010). A study conducted by Samuelsson and Davidsson (2009) found that while entrepreneurial experience is associated with higher venture start-up progress, it however has no impact on subsequent progress.

Bosma, Van Praag, Thurik, and De Wit (2004) also found that entrepreneurial experience effects on new venture survival have been consistently lacking. Cassar (2014) also found no significant evidence supporting that start-up experience improves entrepreneurial forecast performance. One would classify attendance at seminars in entrepreneurship, as well as exhibitions and trade fairs, as forming part of specific human capital, particularly experience. These variables were found to have no impact on SME performance (Oforegbunam & Okorafor, 2010). On the other hand, Ucbasaran et al. (2008) shared a different point of view, referring to entrepreneurship experience as episodic knowledge of entrepreneurship. They argue that episodic knowledge of entrepreneurship can only be acquired through business ownership experience. Episodic entrepreneurship knowledge includes managerial experience, social and business networks and it is this knowledge that can enable entrepreneurs to handle complex problems (Shane &

Khurana, 2003). Experienced entrepreneurs can leverage their experience from previous ventures into their current start-up efforts, particularly industry experience (Dimov, 2010). Furthermore, habitual entrepreneurs, i.e. those who have started more than one business at a time, started a business soon after closing another or sold a business in order to start another one (serial entrepreneurs) are individuals who have accrued valuable business experience; and this increases the probability of early survival (Baptista et al., 2014). Industry experience is seen by many as a competitive advantage which enables entrepreneurs to capitalise on critical relationships, networks and stakeholders (Kor, Mahoney, & Michael, 2007). That said, it is acknowledged that industry related experience could emanate from past work experience and not necessarily business ownership.

Unger et al. (2011) found a high correlation between human capital related to entrepreneurial tasks and SME performance; and found the opposite for human capital related to non-entrepreneurial tasks. While entrepreneurs at nascent and new business stages contribute to innovation and dynamism, entrepreneurs running established businesses and their owner-managers were found to provide stable employment through the exploitation of social capital accumulated from their past experience (Amros & Bosma, 2014). Therefore, human capital emanating from entrepreneurship experience also carries social capital; a phenomenon which was found to be a determinant of first sales and new enterprise profits (Davidsson & Honig, 2003).

The role of entrepreneurship experience was found to be more prevalent in established businesses than in nascent and new businesses (Mamabolo et al., 2017). On the other hand, Dimov (2010) found entrepreneurial experience being associated with entrepreneurs' ability to successfully start new ventures, but not necessarily influencing persistence beyond the start-up phase. In reconciling the above, it is argued that nascent businesses could also be started by

experienced entrepreneurs who own other established businesses. Therefore, the data on human capital possessed by entrepreneurs who own businesses at a nascent stage could be contaminated with entrepreneurs who own other established businesses and decided to open second, third or more businesses.

Past business experience has also been associated with the entrepreneur's self-efficacy (Dimov, 2010). He argues that the process of venture creation entails milestones, such as customer attraction, competitive strategies, acquisition of financial, physical and human capital and the extent to which these are deemed achievable by the entrepreneurs will determine whether or not venture creation succeeds. Past failure of businesses, which one links with entrepreneurial experience, has also been seen as a valuable element of entrepreneurship specific human capital and was found to be prevalent in nascent businesses (Mamabolo et al., 2017).

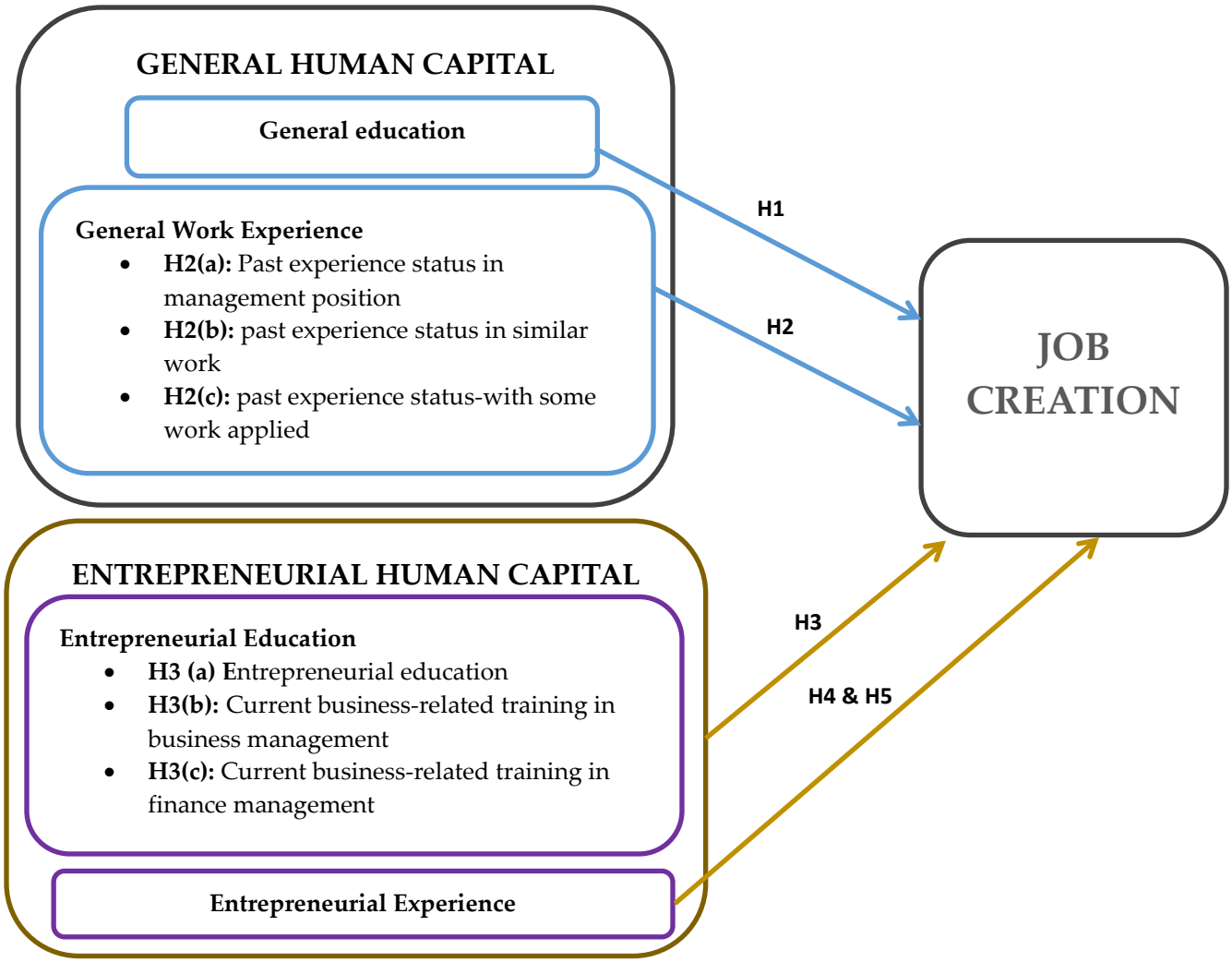
The coexistence of managerial-technical experience and managerial-commercial experience was found to exert positive effects on firm performance; therefore, while technical skills are necessary for fostering innovation, especially in technology-based firms, this is a short term advantage which needs to be complemented by business, managerial and commercial experience to sustain long term performance (Ganotakis, 2012). This sentiment is also shared by McGuirk, Lenihan, and Hart (2015) whose findings showed that firms that employ managers who participate in training and are willing to change, tend to be superior in innovation. In reconciling the above, this study expects the managerial, business, commercial and past business ownership to be key enhancers of SME's ability to create sustainable jobs.

H4: Entrepreneurial experience influences SMEs job creation

H5: Entrepreneurial experience as a dimension of entrepreneurial human capital influences SME job creation the most

Conceptual framework

The conceptual framework illustrates the influence of various human capital elements, both general and entrepreneurial on job creation represented by number of employees in an SME. The study objective is to determine which of these human capital elements influences an SME's ability to create most jobs and determining the influence of each human capital element on SME job creation is envisaged to enable this determination.



H5: Entrepreneurial work experience influences job creation the most

Source: researcher's own model developed based on the literature reviewed

(Baptista et al., 2014; Dimov, 2010; Ganotakis, 2012; Mamabolo et al., 2017; Ucbasaran et al., 2008; Unger et al., 2011; Van der Sluis et al., 2008)

RESEARCH METHOD AND DESIGN

This section outlines the methodology this research followed, including the philosophies and paradigms that guided the study to answer the proposed research questions. Moreover, the research instrument, sampling procedure, the sampling method, type of data and data analysis techniques are discussed. Lastly, the validity and reliability of the data are also addressed.

The methodology selected depends on what one is trying to do as opposed to a commitment to a particular paradigm (Cavaye, 1996). In addition, the methodology employed must be aligned with the particular phenomenon of interest (Krauss, 2005). This study has adopted a quantitative method of analysis.

Study design

The research design refers to the type of analysis within the quantitative method which was adopted in this study (Creswell, 2013). The approach is the use of quantitative methods of research which are linked with the positivist paradigm. Positivists separate themselves from the world they study, unlike other paradigms where the researcher has to be part of the world being studied (Krauss, 2005). In addition, positivists hold the notion that observation and measurement are at the core of the scientific endeavour (Krauss, 2005). One of the main advantages of this approach is its objectivity during data analysis and interpretation (Creswell, 2013).

Secondary data used in this study was initially collected for a PhD thesis. Data was collected using a survey through an online, self-administered questionnaire. Surveys have been found to be the most used methods for quantitative analysis and online questionnaires in particular, have been found to be cost effective and less time consuming (Field, 2009). Although there are a few drawbacks with this type of data collection, such as limited in-depth insight or lack thereof on the constructs being used in the study (Creswell, 2013), available techniques were used to ensure that these effects are minimised.

Quantitative research is the numerical representation and manipulation of observations to describe and explain the phenomena that those observations reflect (Sukamolson, 2007). Creswell (2013) defines quantitative research as a type of research that explains phenomena by collecting numerical data which are analysed using mathematically-based methods. Given that the study is aimed at making an analysis based on past activities to understand relationships between constructs and the influence of the independent variables on the outcome variable, it is therefore deduced that quantitative data analysis is appropriate.

Study population and sampling strategy

The sample of this study comprised South African SMEs that have been in existence for more than one year, who keep financial records and who employ fewer than 201 employees. The study population is across all nine provinces of South Africa, at all levels of development (urban, semi-urban and rural) The data collector received 500 responses, representing a response rate of approximately 10%; 182 of which had missing values. Therefore, the sample remained with 318. It should, however, be noted that of the 318, there were some incomplete questionnaires which did not necessarily affect the variables in question, explaining a slight difference between the total on the demographics and that on the regression and correlation matrix which had a sample of 290.

The minimum sample size required depends on the choice or the type of analysis to be conducted (Creswell, 2013). Given that the dependent variable is categorical, ordered logit regression analysis was used in this study. It is therefore important to consider the minimum sample for this type of analysis. A minimum sample size for regression analysis is 50 observations (VanVoorhis & Morgan, 2007). Following this, Field (2009) also recommended that for each predictor model, there need to be 10 cases. However his simplest rule of thumb is that the bigger the sample size, the better. This study has four predictor variables, meaning that the sample size is appropriate for this type of analysis.

The questionnaires were distributed to five business organisations using emails and were also posted on social networks, with the unit of analysis being the individual entrepreneur, who employs fewer than 201 people and is in any stage of entrepreneurship (nascent, new business and established business).

Research Instrument and Variables

Following Becker (1962, 1994), human capital is categorised into general human capital and entrepreneurial human capital for dependent variables. Under general human capital, the study examines the level of formal education possessed by respondents which include basic education and post-school tertiary education. Work experience forms part of general human capital and comprises of general work experience unrelated to current business, work experience related to current business, work experience with some work applied in current business and work experience in management positions.

Entrepreneurial human capital includes entrepreneurial education, which consists of formal entrepreneurial education and entrepreneurship training related to the current business. The last element of specific human capital is entrepreneurial experience possessed by the respondents measured in years.

Finally, SME job creation as the only dependent variable, is operationalised by using the growth rate of the number of employees employed by SMEs as a determining factor of SMEs ability to create more jobs

Independent variables

This study has four constructs, under which independent variables were derived. The choice for these constructs and variables was based on the existing literature and availability of data.

Table 3.1 Summary of variables

Variables	Type		Variable description
Independent variables	**GENERAL HUMAN CAPITAL**		
	Education	Fge	Formal general education
	Work Experience	pesmp	past experience status in management position
		pessw	past experience status in similar work
		pesswa	past experience status-with some work applied
		pesunr	past experience unrelated to current work
	ENTREPRENURIAL HUMAN CAPITAL		
	Entrepreneurial Experience	cbrtbm	current business-related training in business management
		cbrtfm	current business-related training in finance management
		Noy	general business experience in years
		cbtech	current business-related training in technical skills).
	Education	Fee	Formal entrepreneurial education
Dependent variable		Eg	Employee growth (representing job creation)

Formal general education: In the context of this study, formal education refers to basic and tertiary education, that is general, non-task specific and will easily apply to other industries (Unger et al., 2011). According to the questionnaire, the respondents were asked the following question for this variable: "*what is your highest level of education, this refers to qualifications that are not relevant to your current business or entrepreneurship*". The answers to this question are categorical in nature and meet the requirements of the type of data analysis to be used (Field, 2009). These levels of formal education range from primary, secondary, secondary with no matric, matric, diploma or certificate, degree, honours, masters and PhD.

Work experience: This refers to experience in formal employment and the question which was posed to the respondents was as follows: "*Before starting a business, were you ever in an environment of formal employment as an employee for more than 1 year?*". There were variables under work

experience, all of which had a 5-point Likert scale question. The respondents had an option to select either strongly disagree, disagree, neutral, agree or strongly agree. Work experience was broken into the following variables: Past experience status in management position (Pes-mp); past experience status similar work (Pes-sw), past experience status unrelated work (Pes-unr) and past experience status some work applied (Pes-swa).

Entrepreneurial education: Entrepreneurial education has been broken into formal education and informal education (business related training), formal entrepreneurial education refers to education acquired through academic courses in business management, entrepreneurship, etc. These courses include, but are not limited to finance, business management, human resources, operational or technical qualifications related to the business in question. The question posed to the respondents was as follows: "*What is your highest level of formal entrepreneurial education?"* To ensure that there is no misinterpretation, the question also had an explanation of entrepreneurial education as noted above. These levels of formal entrepreneurial education also range from primary, secondary, secondary with no matric, matric, diploma or certificate, degree, honours, masters and PhD.

The second aspect of entrepreneurial education is informal education, which relates to non-academic business-related training such as short courses, on the job training, etc. This aspect has been broken into the following variables: Current business-related training – technical (Cbrt-tech); current business-related training in business management (Cbrtbm) and current business-related training in finance management.

Entrepreneurial experience: This variable refers to the level of entrepreneurial experience possessed by the entrepreneurs and has been operationalised with general business experience in years (Noy). The respondents were asked to select the number of years they were involved in business.

Dependent variable

The study has only one dependent variable; that is the growth rate of the number of employees in each SME. There are various ways in which researchers have measured SME performance, and thus, its ability to create jobs. The most common measures are financial, i.e., an increase in revenue or sales and profitability; the effectiveness of which is defined through measures such as the number of clients, locations or number of employees (Elmuti et al., 2012).

The respondents were asked to select the employee growth between the following possible answers: Decline (<0%), no growth (0%), minimal growth (5%-10%), growth (11%-49%), average growth (50%-99%) and significant growth (>99%).

Given that some businesses are naturally labour intensive, such as construction, among others, the number of employees do not necessarily imply growth, particularly employment growth. Therefore, employee growth rate is a better indicator of an SME's propensity to create more jobs as it is linked to the growth of the business.

According to Field (2009), it is crucial to screen data for violation of assumptions to prevent the results from being misleading. If data meets the requirements of these assumptions, it means that it is reliable and valid. Given that the purpose of the study is to test the level of influence, existence, direction and significance of the relationship between the four human capital elements (independent variables) and job creation by SMEs (dependent variable), for this cross-sectional data, for the dependent variable which is ordinal, an ordered logistic regression analysis was used. Ordered logit regression model is the appropriate measure to explain the effect of the change in the independent variable on the change in the dependent variable (multivariate regression). Prior to running the regression model, data was tested for reliability and other diagnostic tests.

Data Analysis

The statistical software that was used for this analysis is Stata software for data science version 13. Given that, it was raw data, so it needed to be checked for data incompleteness and missing

values as a precaution before being uploaded on Stata for analysis; following which tests for compliance with regression assumptions were conducted.

Reliability

In quantitative research, reliability refers to the consistency, stability and repeatability of results; this means that the result of a researcher is considered reliable if results have been obtained consistently in identical situations but under different circumstances (Mohajan, 2018). In other words, reliability indicates the extent to which the instrument is without bias, hence it ensures consistency in measurement across time and across the various items in the instrument (Bajpai & Bajpai, 2014). Pearson goodness of fit test (some refer to it as a goodness of measure) was used to test the reliability of the research instrument, the results of which are shown in table 3.2.

Table 3.2: Goodness of fit test

	Chi-Square	**df**	**P-value**
Pearson	274.316	217	0.314
Deviance	124.032	213	1.000

Pearson goodness of fit assesses the discrepancy between the current model and the full model. It tests if the predicted probabilities deviate from the observed probabilities in a way that the model does not predict. If the p-value for the goodness of fit test is lower than the chosen level, it means that the predicted probabilities deviate from the observed probabilities in such a way that the model does not predict (Zhang, 2002). If the p-value is not significant at 5%, it means that the model has enough prediction power to yield reliable coefficients. Table 3.2 above shows that the p-value for the Pearson goodness of fit is not significant at 5% (0.05), a value that meets the requirement, indicating that the model is correctly fitted. It is important to note that the research instrument did not have multi-items scale, therefore there was no need to test for scale reliability and for this study, goodness of fit tests is sufficient.

Table 3.3: Heteroscedasticity test

Ho: Constant variance	
Variables: fitted values of eg	
Chi2(1)	7.43
Prob> chi2 =	0.0064

In the case of multivariate analysis, this means that the variance of the error term does not increase or decrease with any of the explanatory variables. In short, there is constant variance of the error term. If the P-value of our Breusch-Pegan test is significant or is below 0.05 then that indicates a problem of heteroscedasticity (Maddala & Lahiri, 2009). The p-value of our data is 0.0064 which is below 5%. It is therefore inferred that the data has passed the test for heteroscedasticity and it is appropriate for this study.

Table 3.4: Omitted variable test

Ho: model has no omitted variables	
F(3, 277)=	0.63
Prob > F =	0.5986

The RESET Test Results are interpreted at 5% significance level. The null hypothesis states that the model has no omitted variables (Barreto & Howland, 2005; Gujarati, 2009). Given the results above, the study fails to reject the null hypothesis of correct specification. The implication is that the functional form is correct and the model does not suffer from omitted variable bias. It can therefore be concluded that the model was correctly specified.

Normality test

Table 3.5: Doornik-Hansen test for multivariate normality

Doornik-Hansen	
Chi2(4)=	11.208
Prob > chi2 =	0.0523

The Doornik-Hansen test for multivariate normality is based on the skewness and kurtosis of multivariate data that is transformed to ensure independence (Doornik & Hansen, 2008). As with all inferential normality tests, the null hypothesis is that the underlying population is normal, in this case, multivariate normal. The Doornik-Hansen test fails to reject the null hypothesis of normality in the data at 5%, given that the p-value of (0.0583) is more than 5% and we can therefore conclude that normality is attained.

Validity

External validity refers to generisability of the research findings to the population, the purpose of which is to ensure that the findings of the sample will apply in real life and other contexts (Mohajan, 2018). The sample represents all nine provinces of South Africa and it also represents areas in all levels of development (Rural, semi-rural, townships, cities). It can therefore be inferred that the sample is diverse enough to represent SMMEs in South Africa. Internal validity relates to the accuracy and consistency of the use of the research instrument used (Weiner, 2007) and that the research instrument tests what is intended for it to measure (Thatcher, 2010). Given that this is secondary data, and that its collection was done electronically through a self-administered survey, it is assumed that the same questionnaire was used for all respondents, thereby yielding consistency. Furthermore, the sample size being this big contributes positively to the validity of the research instrument. Others define validity as a measure of how well the results obtained from the use of the measure fit the theories around which the test is designed (Bajpai & Bajpai, 2014). This validity requirement is met, given that the choice of the independent variables of this study was underpinned by the human capital theory (Becker, 1962, 1994), and

other literature which supported the use of this theory for this type of approach (Ganotakis, 2012; Mamabolo et al., 2017; Ucbasaran et al., 2008). Lastly, for the dependent variable, the entrepreneurship theory (Casson, 2005) links human capital to business performance; a phenomenon which this study argues is linked with SME ability to create jobs.

Ethical considerations

The primary data collector ensured that the data was collected in an ethical manner and received ethics clearance from the institution within which the PhD thesis was done. In addition, a written consent was received from the primary data collector on the use of the data as secondary data for this study.

RESULTS

This section presents the characteristics of the sample and the results of the data analysis in comparison with the hypotheses that were proposed in the literature review section.

Sample characteristics

Demographics

Figure 4.1: Age group

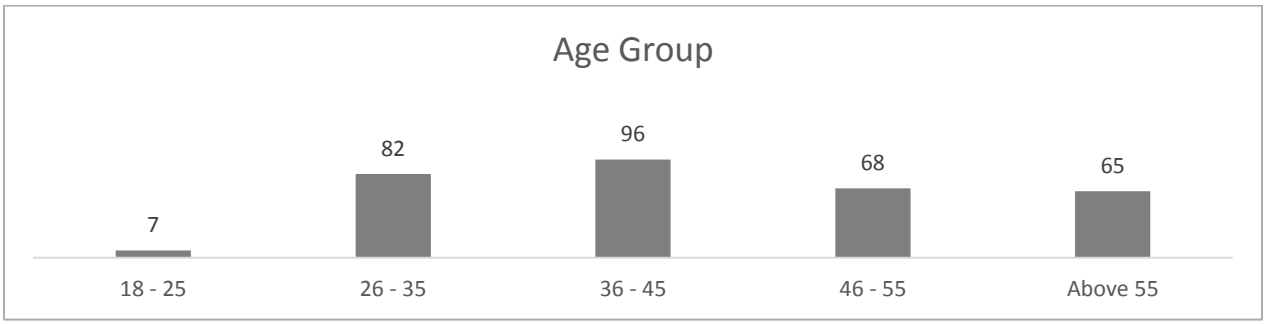
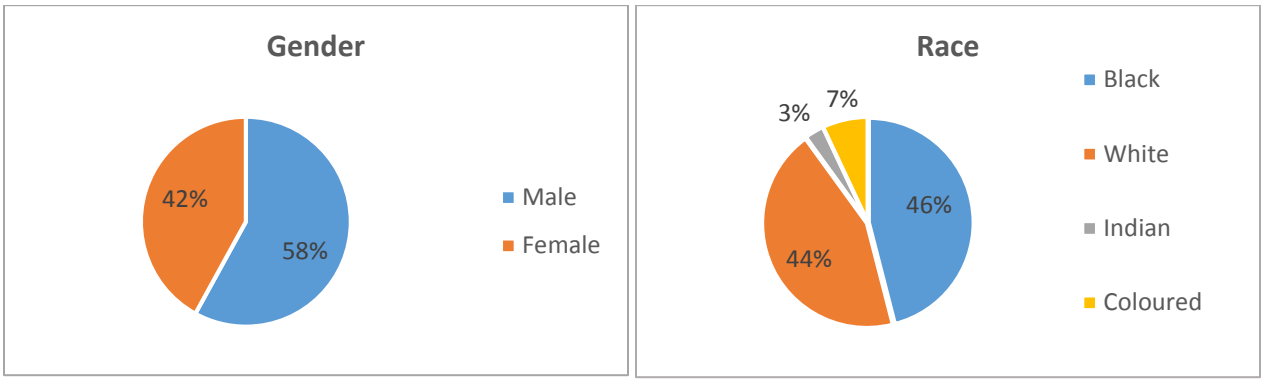


Figure 4.1 shows that out of the 318 respondents, the largest group is that of owners aged 36-45 followed by those who are aged between 26 and 35. The lowest category is that of respondents ages between 18 and 25, representing only 7 of the 318. This is probably due to the fact that at the age of 18 to 25, one has not acquired some education and experience to run a business.

Figure 4.2: Gender and race



Of the 318 respondents, 58% of them are male, and 42% is female. On the race end, a large proportion of the respondents are black representing 46%, followed by white entrepreneurs representing 44%. At the tail end lies Indians and coloureds representing 3% and 7% respectively.

Figure 4.3: Business location

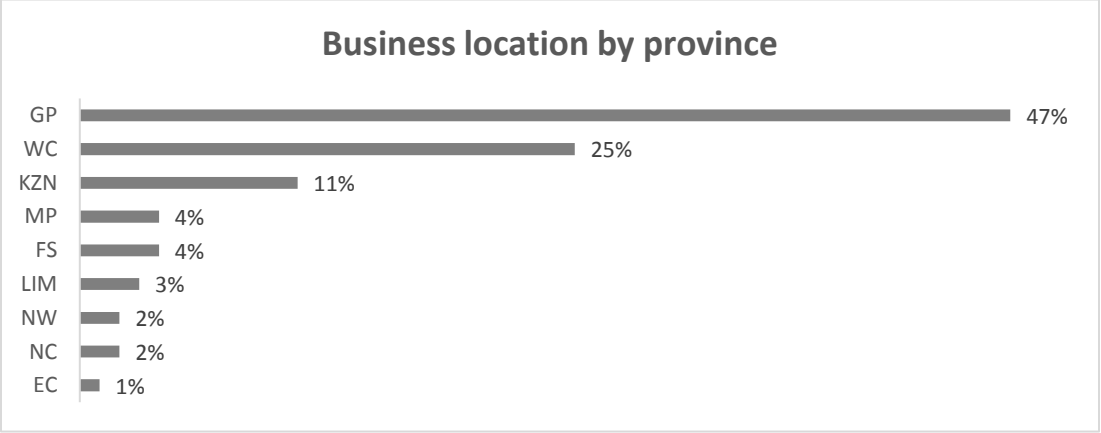


Figure 4.3 shows that Gauteng province dominates as a location where the largest proportion of business are located. It is also noted that some businesses have an office in more than one location, therefore the total of the percentages is 357, instead of 318; therefore 12% of the SMMEs in this sample have offices in more than one province.

Figure 4.4: Formal Education

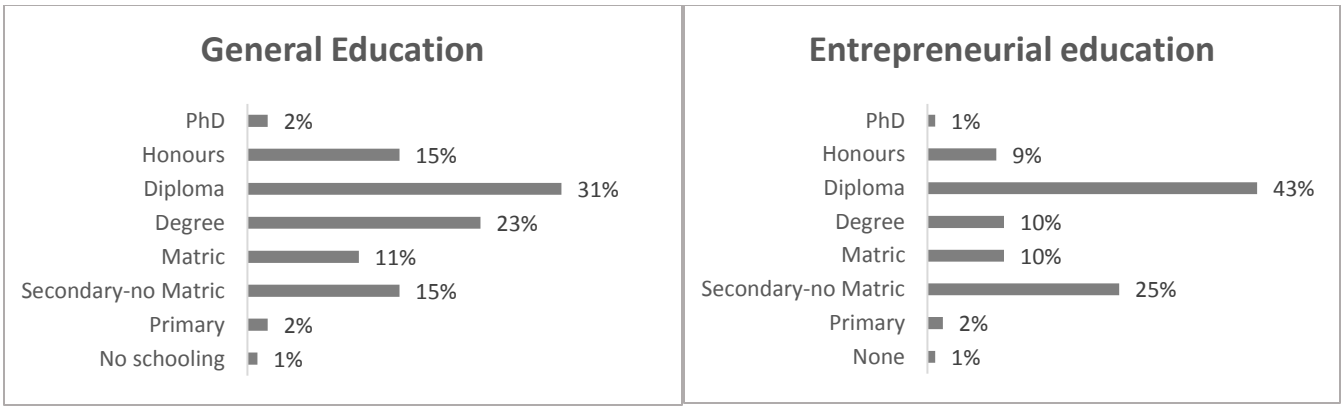


Figure 4.4 shows that under general education, the largest proportion of respondents hold a diploma or certificate as their highest qualification, while 11% have matriculated and 3% have a lower than matriculation qualification. 23% of the respondents are graduates while 32% have a post-graduate qualification. Under entrepreneurial education, respondents who have no entrepreneurial qualification represent 16%, those with a diploma/certificate represent the largest proportion (43%). Graduates represent 10% while those who have a post-graduate qualification represent 21%.

Table 4.1: Correlation matrix and descriptive statistics

	Mean	Std. Deviation	eg	cbrtbm	cbrtfm	fge	fee	pesmp	noy	pessw	pesswa	*pesunr*	cbtech
eg	2.53	.961	1.0000										
cbrtbm	3.44	1.503	0.0347	1.0000									
cbrtfm	3.29	1.442	0.0520	0.4833	1.0000								
fge	5.89	1.417	0.1211	0.2210	0.2113	1.0000							
fee	5.49	2.000	0.1072	0.3420	0.3893	0.3309	1.0000						
pesmp	3.87	1.505	0.1782	0.0673	0.0709	0.0436	0.0756	1.0000					
noy	5.49	2.000	0.1397	0.0683	0.0875	0.0224	0.0927	0.6368	1.0000				
pessw	2.95	1.555	0.2458	0.2500	0.3598	0.1456	0.3116	0.2327	0.2029	1.0000			
pesswa	4.16	1.102	0.2591	0.2096	0.1454	0.1258	0.1491	0.1963	0.1819	0.3963	1.0000		
pesunr	2.67	1.640	-0.0663	-0.0570	0.0436	0.0754	0.0177	0.0465	0.0377	0.0122	0.1435	1.0000	
cbtech	**3.03**	**1.614**	**0.2122**	**0.2933**	**0.3217**	**0.2223**	**0.2880**	**0.1706**	**0.0736**	**0.3938**	**0.2708**	**0.0872**	**1.0000**

The correlation matrix in table 4.1 indicates the existence of a relationship between the dependent variable and all the independent variables, although nine out of 10 independent

variables show a positive relationship and past experience unrelated to current work (pesunr) shows a negative correlation with employment growth (eg). When observing the statistical significance of each independent variable with employment growth (eg), current business-related training in business management (cbrtbm) and current business-related training in finance management (cbrtfm) have the highest level of significance; 0,0347 and 0,0520 respectively. The two independent variables which have the least level of significance are past experience status-with some work applied (pesswa) and past experience status in similar work (pessw); 0,2591 and 0,2458 respectively. Lastly, only past experience status in unrelated work (pesnur) was founf to have an inverse relationship with employment growth with a significance of -0,0663. The significant variables, pessw and pesswa are significant at 5% and 1% respectively. Given that all independent variables have a significant relationship with the dependent variable (eg), they are all considered for regression analysis.

Regression analysis

Table 4.2.1: ordered logistic regression - Experience

. ologit eg pesmp noy pessw pesswa pesunr

Iteration 0: log likelihood = -382.03927
Iteration 1: log likelihood = -381.12708
Iteration 2: log likelihood = -381.12639
Iteration 3: log likelihood = -381.12639

Ordered logistic regression — Number of obs = 290
LR chi2(5) = 33.31
Prob > chi2 = 0.0000
Log likelihood = -381.12639 — Pseudo R2 = 0.0379

eg	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
pesmp	.901755	.0697255	1.29	0.196	-.0464841	.226835
noy	.0174012	.0580385	0.30	0.764	-.0963522	.1311546
pessw	.242143	1030383	2.35	0.019	.0401917	.4440943
pesswa	.3959203	1304684	3.03	0.002	.1402069	.6516337
pesunr	-.0354816	.0672644	-.053	0.598	-.1673175	.0963542
/cut1	-1.705148	.7517104			-3.178473	-.2318227
/cut2	1.089938	.7408386			-.3620795	2.541955
/cut3	2.593082	.7546713			1.113953	4.07221
/cut4	3.958692	.7937547			2.402962	5.514423

Following the use of the *ologit* command of stata 13, the results presented in table 4.2.1 were obtained which suggest the following: The model suggests that at 5% significance, a 1% increase in pesswa (past experience status with some work applied to the current work) increases the odds of SME ability to create more jobs by 39%. The model also shows that a 1% increase in pessw (past experience status with similar work) increases the odds of SME ability to create more jobs by 24%. Interestingly, the result for past experience status in management position (pesmp) is not statistically significant to suggest that its increase will influence job creation by SMEs. Additionally, general business experience in years (noy) is not significant in explaining the increase in employee growth (eg)

Table 4.2.2: ordered logistic regression – formal education

. ologit eg fge fee

Iteration 0: log likelihood = -467.33696
Iteration 1: log likelihood = -411.03143
Iteration 2: log likelihood = -409.73819
Iteration 3: log likelihood = -409.73735
Iteration 4: log likelihood = -409.73735

Ordered logistic regression	Number of obs	=	297
	LR chi2(2)	=	6.63
	Prob > chi2	=	0.0363
Log likelihood = -409.73735	Pseudo R2	=	0.00074

eg	**Coef.**	**Std. Err.**	**z**	**P>|z|**	**[95% Conf. Interval]**	
fge	.1312712	.0791592	1.66	0.097	-.023878	.2864204
fee	.0692738	.0535843	1.29	0.196	- .0357495	.1742972
/cut1	-.5540581	.3180793			-1.177482	.0693658
/cut2	2.270852	.2838323			1.714551	2.827153
/cut3	3.4902	.329186			2.845007	4.135392
/cut4	6.896388	.4962703			5.923716	7.86906

Although Fge (formal general education) and fee (formal entrepreneurial education) were found to have a positive relationship with the dependent variable (eg), the ordered logit regression analysis shows that only formal general education (fge) presents an increase which is statistically significant in influencing employee growth (eg). The variable is significant at 10% with a p-value of 0.097 and a z-value of 1.66. The results imply that the odds of employee growth increase by 13% when formal general education increases by 1%. Conversely, a statistically significant influence could not be found between entrepreneurial education (Fee) on SME job creation.

Table 4.2.3: Ordered logistic regression – current business-related training

. ologit eg cbrttech cbrtbm cbrtfm

Iteration 0: log likelihood = -382.03927
Iteration 1: log likelihood = -380.29644
Iteration 2: log likelihood = -380.29434
Iteration 3: log likelihood = -380.29434

Ordered logistic regression	Number of obs	=	290
	LR chi2(3)	=	14.99
	Prob > chi2	=	0.0018
Log likelihood = -380.29434	Pseudo R2	=	0.0170

eg	**Coef.**	**Std. Err.**	**z**	**P>|z|**	**[95% Conf. Interval]**	
cbrtbm	-.0607872	.1297231	-0.47	0.639	-.3150398	.1934654
cbrtfm	.0247112	.1352481	0.18	0.855	-.2403701	.2897925
cbtech	-.4575824	.1219148	3.75	0.000	.2186339	.696531
/cut1	-2.391744	.3610267			-3.099343	-1.684145
/cut2	.4154843	.3184193			-.2086061	1.039575
/cut3	1.929888	.3418504			1.259874	2.599903
/cut4	3.297253	.4180738			2.477843	4.116662

Table 4.2.3 has three independent variables which are cbrtbm (current business-related training in business management, cbrtfm (current business-related training in finance management and cbtech (current business-related training in technical skills). Of the three variables, only those owners who have training in technical management have statistical significance in influencing the growth of employees among small businesses. The significant variable, Cbtech is significant

at 1% significance level with a z-value of 3.75. The implication of the results is that, when training in technical management increases by 1%, employee growth responds positively by 45%.

DISCUSSION

A summary of the key findings including a comparison, a contrast and/or a complement of the study's findings with findings from other studies is addressed in this section. This includes the recommendations and/or implications, strengths and limitations.

Key findings

H1: Formal general education influences SMEs job creation

The finding of the study fails to reject the hypothesis which says that formal general education (fge) influences SMEs job creation (eg). The results support the hypothesis and show that formal general education has a significant influence on SMEs job creation.

H2: General work experience influences SMEs job creation

The study fails to reject the hypothesis as results show that general work experience influences SMEs job creation.

H2(a): Past experience status in management position influences SME job creation
The study rejects the hypothesis given that past experience in management positions (pesmp) was found to be having no influence on SME job creation (eg)

H2(b): Past experience status in similar work influences SME job creation
The study fails to reject the hypothesis given that past experience in similar work (pessw) was found to be having a significant influence on SME job creation (eg).

H2(c): Past experience status-with some work applied influences SME job creation

The study fails to reject the hypothesis given that past experience with some work applied to current business (pesswa) was found to be having a significant influence on SME job creation (eg).

H3 (a): Entrepreneurial education has a weak influence SMEs job creation

The findings of the study fail to reject the hypothesis which proposed a weak influence of entrepreneurship education(fee) on SMEs job creation (eg). No statistically significant evidence was found suggesting that entrepreneurship education has an influence on SME job creation.

H3(b): Current business-related training in business management (cbrtm) has a weak influence on SMEs job creation

The findings of the study fail to reject the hypothesis which proposed a weak influence of (cbrtm) on SME job creation. No statistically significant evidence was found suggesting that (cbrtm) has an influence on SME job creation.

H3(c): Current business-related training in finance management (cbrtfm) has a weak influence on SME job (eg) creation

The findings of the study fail to reject the hypothesis which proposed a weak influence of (cbrtfm) on (eg). No statistically significant evidence was found suggesting that (cbrtfm) has an influence on (eg).

H4: Entrepreneurial experience (noy) influences SMEs job creation (eg).

The results reject the hypothesis since there is no evidence found which suggests that (noy) influences (eg).

H5: Entrepreneurial work experience (noy) as a dimension of entrepreneurial human capital influences SME job creation (eg) the most

The results of the study reject the hypotheses as no influence was found for **H4**.

Implications and recommendations

This study sought to contribute to solutions put forward by other researchers to address the problem of unemployment in South Africa by breaking down human capital elements into parts which can enable a specific focus on those which influence SMEs ability to create jobs the most. The key findings of this study suggest that general human capital (formal general education and past work experience) plays a significant role in improving SMEs ability to perform and ultimately create jobs. The study proposes that general human capital is a precondition of SME success and it enhances trainability for subsequent business competencies.

These findings are consistent with those of Oforegbunam and Okorafor (2010) who found formal education and on-the-job training to the human capital elements which yield SME performance and ultimately, job creation the most. Similarly, Ngek (2014) also found that formal education, in particular, played a significant role in influencing SME performance. Although other authors found no evidence suggesting that formal education enhances SME performance (Ganotakis, 2012); This study however, argues that trainability depends on formal education and as a result, it becomes the foundation for other elements of human capital. In addition, work experience provides practical human capital experience for many people, enhancing their ability to identify opportunities and to pursue them.

Mamabolo et al. (2017) found that formal education is more prevalent at nascent and new business stages than at the established business stage. Although this only referred to prevalence, it is consistent with the finding of Dimov (2010) who found that formal education has a significant influence on venture creation and the emergence of nascent entrepreneurs. It is therefore important that concerted efforts be made to equip South Africans with formal education as it serves as building blocks for other elements of human capital which cannot necessarily be attained without it.

Although entrepreneurship education has a positive relationship with job creation, its influence on job creation is weak, supporting the proposed hypothesis. However, an interesting and

unexpected outcome is that of entrepreneurial experience. The study found no significant evidence which suggests that entrepreneurial experience influences SMEs ability to create jobs. This rubberstamps the researcher's argument that formal education and work experience are pre-conditions of job creation. The study proposes that SMEs may survive and even perform with their personnel and/or managers not having entrepreneurial education, however SMEs will not perform if general education, as a bare minimum, is not in place. This is consistent with the findings of Amros and Bosma (2014), who found the main inhibitor of SME experience is a lack of formal education and work experience.

The study attempted to contribute to existing research in South Africa by seeking to understand which are the specific areas under human capital that can be focused on without neglecting others; there were some limitations in that secondary data (or primary data which was collected for the purpose of another research) was used, given the time constraints. Questions were asked in the context of a particular study and had this been a primary data collection, these questions could have been phrased in such a manner that could have improved the robustness in answering the research questions.

Additionally, in the regression specifications, the study did not not control for standard measures such as age, gender, geography and/or race that may affect the relationship between human capital elements and these demographic elements. It is therefore recommended that future research looks into controlling for demographics such as age, gender, province and/or race which may have had a certain impact on the outcome of this study.

The findings of this study point to general human capital as an element which influences job creation the most, the implication of which is that the current profile of the unemployed will not necessarily yield positive results towards SMEs' ability to create jobs. This confirms a narrative by Chandra et al. (2001); Herrington et al. (2017) who pointed to formal education as the most important focus point by government to promote SME success and job creation.

This study proposes that work experience can be a by-product of business education, even better than classroom concepts of formal entrepreneurial education which have little practical exposure for learners. Additionally, work experience inherently provides certain business skills such as planning, organising, interpersonal skills, conflict management, and other cognitive skills, even for those who were not in management positions as they see how their superiors conduct themselves in business related matters. Work experience is therefore a source of valuable experience which cannot be replaced by a classroom course in business management or equivalent. Lastly, the employment process involves a process of screening for adequate competencies including education; therefore, human capital from the workplace holds credibility.

The study therefore recommends that policy makers focus more effort on funding formal general education, without which other elements of human capital are not achievable. The South African government should enhance incentives for companies to hire more people and enforce company funded training programmes in the workplace that enhance entrepreneurship-specific human capital. Although this study did not find any evidence suggesting that entrepreneurship-specific human capital influences job creation, this does not necessarily imply that these human capital elements are not important. Borrowing a concept from the work of Mamabolo et al. (2017), the outcome could have been related to the profile of the entrepreneurs, a majority of which could be those at a certain stage which leverages more on general human capital.

It is further proposed that future research examines the influence of each human capital aspect at each stage of entrepreneurship. It is also possible that human capital has diminishing effects as businesses grow and other forms of capital, such as social capital, influence job creation more at later stages. Other forms of entrepreneurial capital be considered at different stages of the entrepreneurship which may explain why entrepreneurship specific human capital does not yield positive results in SME job creation.

CONCLUSION

Instead of funding SMEs whose owners do not possess the necessary human capital to grow them; the focus should be the enhancement of formal education. This will improve employability and in turn, give people the necessary experience and self-efficacy to start and sustain their own businesses. A new criterion for funding businesses can be developed to optimise the very limited financial resources used to support businesses, thus increasing probability of SME success. This study concludes that general human capital remains a pre-condition for job creation and other elements will not be attained if the foundation is not in place.

Entrepreneurship requires certain building blocks and specific human capital is an enhancement, but not necessarily a basic, without which SMEs will not exist. While a narrative of including entrepreneurship at basic education level to enhance self-efficacy is supported, the study also supports the findings of Davidsson and Honig (2003) who found that specific human capital was not a significant predictor of SME profitability and Dimov (2010) who found that entrepreneurship experience does not necessarily influence nascent phase persistence beyond the start-up phase.

ACKNOWLEDGEMENTS

Competing interests

There is no financial benefit expected out of this study and it is purely for academic reasons. This study has been conducted solely for the purpose of the degree being pursued.

Author contributions

The researcher sourced secondary data, however, the conceptual and theoretical framework and literature review was conducted by the researcher. The researcher also defined the methodology for the data analysis. The services of a statistician were utilised to run models for the study, the outcome of which was analysed by the researcher.

Appendices

Appendix 1: Research instrument

1. The entrepreneur

1.1 Please confirm that you are a current or former entrepreneur

Yes	No

2. Demographics

2.1Are you male or female

Male	Female
Female	

2.2 What is your race?

	Black	Colored	Indian	White	Other
Race					

2.3 Please select your age

	18-25	**26-35**	**36-45**	**46-55**	**>55**
Age					

2.4 Which if the following best describes your business?

	< 6	**6 - 20**	**21 - 49**	**50 - 200**	**>200**
Number of employees					

2.5 Please select the provinces where your offices are located and where you operate

	GP	**KZN**	**FS**	**NC**	**WC**	**EC**	**MP**	**Limpopo**
Located								
Operate & service								

3. Employment growth – Dependent variable

3.1 What has been the average growth in your business in the past three or few years?

	Decline (<0%)	**No growth (0%)**	**Minimal growth (5% - 10%)**	**Growth (11% - 49%)**	**Average growth (50% - 99%)**	**Significant growth (> 90%)**
Number of employees						

4. Entrepreneurial Human Capital – Independent variable

4.1 What is your level of formal education? General formal education refers to qualifications which are not related to your current business or entrepreneurship.

4.2 What is your level of entrepreneurial formal education? Entrepreneurial formal education refers to qualifications which are related to your current business or entrepreneurship.

4.1 General education Highest qualification		**4.2 Entrepreneurial education Highest Qualification**	
No schooling		No schooling	
Primary		Primary	
Secondary (No matric)		Secondary (No matric)	
Matric		Matric	
Diploma		Diploma	
Degree		Degree	
Honors		Honors	
Masters		Masters	
PHD		PHD	

4.3 Before starting this business, have you ever been in an environment of formal employment as an employee for more than a year?

	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
I was in managerial position					
I was doing similar work as my current business					
My former work is not related to my current business at all					
I apply some of my previous knowledge in my business					
I was unemployed					

4.4 Have you ever received the following training in relation to your business?

	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
Business Management					
Financial Management					

Appendix 2: Summary of variables

Summary of variables

Variables	Type		Variable description
Independent variables	**GENERAL HUMAN CAPITAL**		
	Education	Fge	Formal general education
	Work Experience	pesmp	past experience status in management position
		pessw	past_experience status in similar work
		pesswa	past experience status-with some work applied
		pesunr	past experience unrelated to current work
	ENTREPRENURIAL HUMAN CAPITAL		
	Entrepreneurial Experience	cbrtbm	current business-related training in business management
		cbrtfm	current business-related training in finance management
		Noy	general business experience in years
		cbtech	current business-related training in technical skills).
	Education	Fee	Formal entrepreneurial education
Dependent variable		Eg	Employee growth (representing job creation)

REFERENCES

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

Alegre, J., Pla-Barber, J., Chiva, R., & Villar, C. (2012). Organisational learning capability, product innovation performance and export intensity. *Technology Analysis & Strategic Management, 24*(5), 511-526.

Amros, J. E., & Bosma, N. (2014). GEM 2013 global entrepremeurship report *Global Report* (2014 ed.). Wesley, MA: Global Entreprenurship Research Assosiation.

Audretsch, D. B., & Keilbach, M. (2007). The Theory of Knowledge Spillover Entrepreneurship*. *Journal of Management Studies, 44*(7), 1242-1254. doi:10.1111/j.1467-6486.2007.00722.x

Bajpai, S., & Bajpai, R. (2014). Goodness of measurement: Reliability and validity. *International Journal of Medical Science and Public Health, 3*(2), 112-115.

Baptista, R., Karaöz, M., & Mendonça, J. (2014). The impact of human capital on the early success of necessity versus opportunity-based entrepreneurs. *Small business economics, 42*(4), 831-847.

Barreto, H., & Howland, F. (2005). *Introductory econometrics: using Monte Carlo simulation with Microsoft excel*: Cambridge University Press.

Becker, G. S. (1962). Investment in human capital: A theoretical analysis. *Journal of political economy, 70*(5, Part 2), 9-49.

Becker, G. S. (1964). Human capital: New York: Columbia University Press.

Becker, G. S. (1993). Nobel lecture: The economic way of looking at behavior. *Journal of political economy, 101*(3), 385-409.

Becker, G. S. (1994). Human capital revisited *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education (3rd Edition)* (pp. 15-28): The university of Chicago press.

Bosma, N., Van Praag, M., Thurik, R., & De Wit, G. (2004). The value of human and social capital investments for the business performance of startups. *Small business economics, 23*(3), 227-236.

Brink, A., Cant, M., & Ligthelm, A. (2003). *Problems experienced by small businesses in South Africa.* Paper presented at the 16th Annual Conference of Small Enterprise Association of Australia and New Zealand.

Cassar, G. (2014). Industry and startup experience on entrepreneur forecast performance in new firms. *Journal of business venturing, 29*(1), 137-151.

Casson, M. (2005). Entrepreneurship and the theory of the firm. *Journal of Economic Behavior & Organization, 58*(2), 327-348.

Cavaye, A. L. (1996). Case study research: a multi-faceted research approach for IS. *Information systems journal, 6*(3), 227-242.

Chandra, V., Moorty, L., Nganou, J.-P., Rajaratnam, B., & Schaefer, K. (2001). Constraints to growth and employment in South Africa. *Report No2, World Bank*.

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches.* Thousand Oaks, CA.: Sage publications.

Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of business venturing, 18*(3), 301-331.

Dimov, D. (2010). Nascent entrepreneurs and venture emergence: Opportunity confidence, human capital, and early planning. *Journal of Management Studies, 47*(6), 1123-1153.

Doornik, J. A., & Hansen, H. (2008). An omnibus test for univariate and multivariate normality. *Oxford Bulletin of Economics and Statistics, 70*, 927-939.

Edvinsson, L., & Malone, M. S. (1997). Intellectual capital: realizing your company\'s true value by finding its hidden brainpower.

Elmuti, D., Khoury, G., & Omran, O. (2012). Does entrepreneurship education have a role in developing entrepreneurial skills and ventures' effectiveness? *Journal of Entrepreneurship Education, 15*, 83.

Fatoki, O., Olawale. (2011). <The impact of human, social and financial capital on the Performance of Small and Medium-Sized Enterprises (SMEs)

in South Africapdf>. *Journal of social sciences, 29*(3), 193-204.

Fida, B. (2008). The Role of Small and Medium Enterprises (SMEs) in Economic Development. *Enterprise Development, Free Online Library*.

Field, A. (2009). *Discovering statistics using spss third edition 2009* (3rd edition ed.). London: Sage Publications.

Frese, M., Krauss, S. I., Keith, N., Escher, S., Grabarkiewicz, R., Luneng, S. T., . . . Friedrich, C. (2007). Business owners' action planning and its relationship to business success in three African countries. *Journal of Applied Psychology, 92*(6), 1481.

Gabrielsson, J., & Politis, D. (2012). Work experience and the generation of new business ideas among entrepreneurs: An integrated learning framework. *International Journal of Entrepreneurial Behavior & Research, 18*(1), 48-74.

Galindo, M.-Á., & Méndez, M. T. (2014). Entrepreneurship, economic growth, and innovation: Are feedback effects at work? *Journal of Business Research, 67*(5), 825-829.

Ganotakis, P. (2012). Founders' human capital and the performance of UK new technology based firms. *Small business economics, 39*(2), 495-515.

Guerrero, M., Urbano, D., & Fayolle, A. (2016). Entrepreneurial activity and regional competitiveness: evidence from European entrepreneurial universities. *The Journal of Technology Transfer, 41*(1), 105-131.

Gujarati, D. N. (2009). *Basic econometrics*: Tata McGraw-Hill Education.

Hashi, I., & Krasniqi, B. A. (2011). Entrepreneurship and SME growth: evidence from advanced and laggard transition economies. *International Journal of Entrepreneurial Behavior & Research, 17*(5), 456-487. doi:doi:10.1108/13552551111158817

Hattab, H. W. (2014). Impact of entrepreneurship education on entrepreneurial intentions of university students in Egypt. *The Journal of Entrepreneurship, 23*(1), 1-18.

Hechavarría, D. M. (2016). The impact of culture on national prevalence rates of social and commercial entrepreneurship. *International entrepreneurship and management journal, 12*(4), 1025-1052.

Herrington, M., Kew, P., & Mwanga, A. (2017). *GEM South Africa*. Retrieved from http://www.gemconsortium.org/wiki/665

Hoxha, D. (2008). The performance of micro firms in Kosova: size, age and educational implications. *International Journal of Globalisation and Small Business, 3*(1), 25-40.

Islam, M. A., Mian, E. A., & Ali, M. H. (2009). Factors Affecting Business Success of Small and Medium Enterprises (SMEs) in Bangladesh. *RESEARCH JOURNAL of THE INSTITUTE OF BUSINESS ADMINISTRATION KARACHI-PAKISTAN, 4*(2), 123.

Jasra, J., Hunjra, A. I., Rehman, A. U., Azam, R. I., & Khan, M. A. (2011). Determinants of business success of small and medium enterprises. *International Journal of Business and Social Science, 2*(20).

Kerr, A., Wittenberg, M., & Arrow, J. (2014). Job Creation and Destruction in S outh A frica. *South African Journal of Economics, 82*(1), 1-18.

Kongolo, M. (2010). Job creation versus job shedding and the role of SMEs in economic development. *African Journal of Business Management, 4*(11), 2288-2295.

Kor, Y. Y., Mahoney, J. T., & Michael, S. C. (2007). Resources, capabilities and entrepreneurial perceptions. *Journal of Management Studies, 44*(7), 1187-1212.

Krauss, S. E. (2005). Research Paradigms and Meaning Making A Primer.pdf>. *The Qualitative report, 10*(4), 758-770.

Lopa, Z. L., & Bose, K. T. (2014). Relationship between Entrepreneurial Competencies

of SME Owners/Managers and Firm Performance:

A Study on Manufacturing SMEs in Khulna City. *Journal of Entrepreneurship and Management, 3*(3).

Maddala, G. S., & Lahiri, K. (2009). *Introduction to econometrics*: Wiley.

Mamabolo, M. A., Kerrin, M., & Kele, T. (2017). Entrepreneurship management skills requirements in an emerging economy: A South African outlook. *The*

Southern African Journal of Entrepreneurship and Small Business Management, 9(1), 1-10.

Man, W.-y. T. (2001). *Entrepreneurial competencies and the performance of small and medium enterprises in the Hong Kong services sector.* The Hong Kong Polytechnic University.

McClelland, D. C. (1987). Characteristics of successful entrepreneurs. *The journal of creative behavior, 21*(3), 219-233.

McGuirk, H., Lenihan, H., & Hart, M. (2015). Measuring the impact of innovative human capital on small firms' propensity to innovate. *Research Policy, 44*(4), 965-976.

Mohajan, H. (2018). Two Criteria for Good Measurements in Research: Validity and Reliability*17*(3), 58-82. Retrieved from https://mpra.ub.uni-muenchen.de/83458/

Mortensen, D. T., & Pissarides, C. A. (1998). Technological progress, job creation, and job destruction. *Review of Economic dynamics, 1*(4), 733-753.

Mutyenyoka, E. M., & Madzivhandila, T. S. (2014). Employment Creation Through Small, Medium and Micro Enterprises (SMMEs) in South Africa: Challenges, Progress and Sustainability. *Mediterranean Journal of Social Sciences, 5*(25), 65.

Ngek, N. B., & van Aardt Smit, A. (2013). Will promoting more typical SME start-ups increase job creation in South Africa? *African Journal of Business Management, 7*(31), 3043.

Oakey, R. P. (2003). Technical entreprenenurship in high technology small firms: some observations on the implications for management. *Technovation, 23*(8), 679-688.

Oforegbunam, T. E., & Okorafor, G. (2010). Effects of human capital development on the performance of small and medium scaled enterprises in the southeastern region of nigeria. *Journal od sustainable development in Africs, 12*(8), 49-58.

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

Ponte, S., Roberts, S., & van Sittert, L. (2007, August). To BEE or not to BEE? 'Black Economic Empowerment', Business and the state in South Africa. *Development nd change*, 1-30.

Rogerson, C. M. (2008). *Tracking SMME development in South Africa: Issues of finance, training and the regulatory environment.* Paper presented at the Urban Forum.

Samuelsson, M., & Davidsson, P. (2009). Does venture opportunity variation matter? Investigating systematic process differences between innovative and imitative new ventures. *Small business economics, 33*(2), 229-255.

Santarelli, E., & Vivarelli, M. (2007). Entrepreneurship and the process of firms' entry, survival and growth. *Industrial and corporate Change, 16*(3), 455-488.

Shane, S., & Khurana, R. (2003). Bringing individuals back in: the effects of career experience on new firm founding. *Industrial and corporate Change, 12*(3), 519-543.

Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of management review, 25*(1), 217-226.

South Africa (1996). National Small Business Act 102 of 1996. Retrieved from https://www.gov.za/sites/default/files/gcis_document/201409/act102of1996.pdf

Soriano, D. R., & Castrogiovanni, G. J. (2012). The impact of education, experience and inner circle advisors on SME performance: insights from a study of public development centers. *Small business economics, 38*(3), 333-349.

StatsSA. (2016). *Quarterly Labour Force Survey, Quarter 1, 2016*. Retrieved from Pretoria:

Sukamolson, S. (2007). Fundamentals of quantitative research. *Language Institute Chulalongkorn University*, 1-20.

Thatcher, R. W. (2010). Validity and reliability of quantitative electroencephalography. *Journal of Neurotherapy, 14*(2), 122-152.

Tustin, D. (2015). The physiognomy of SMMEs in South Africa and consequential national strategy reinforcement. *The Retail and Marketing Review, 11*(1), 77-91.

Ucbasaran, D., Westhead, P., & Wright, M. (2008). Opportunity identification and pursuit: does an entrepreneur's human capital matter? *Small business economics, 30*(2), 153-173.

Unger, J. M., Rauch, A., Frese, M., & Rosenbusch, N. (2011). Human capital and entrepreneurial success: A meta-analytical review. *Journal of business venturing, 26*(3), 341-358.

Van der Sluis, J., Van Praag, M., & Vijverberg, W. (2008). Education and entrepreneurship selection and performance: A review of the empirical literature. *Journal of economic surveys, 22*(5), 795-841.

VanVoorhis, C. W., & Morgan, B. L. (2007). Understanding power and rules of thumb for determining sample sizes. *Tutorials in Quantitative Methods for Psychology, 3*(2), 43-50.

Vargas, N., Lloria, M. B., & Roig-Dobón, S. (2016). Main drivers of human capital, learning and performance. *The Journal of Technology Transfer, 41*(5), 961-978.

Weiner, J. (2007). Measurement: Reliability and validity measures. *Measurement: Reliability and validity measures (powerpoint presentation).* Retrieved from http://ocw.jhsph.edu/courses/hsre/PDFs/HSRE_lect7_weiner.pdf

Wong, P. K., Ho, Y. P., & Autio, E. (2005). Entrepreneurship, innovation and economic growth: Evidence from GEM data. *Small business economics*, *24*(3), 335-350.

Zhang, J. (2002). Powerful goodness-of-fit tests based on the likelihood ratio.

Journal of the Royal Statistical Society: Series B (Statistical Methodology), 64(2),

281-294.