

Human capital elements influencing job creation in small- and medium-sized enterprises



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Background: A substantial body of research supports the notion that small- and medium-sized enterprises (SMEs) play a crucial role in promoting job creation. Small- and medium-sized enterprises in South Africa, however, do not create as many jobs as expected despite several government programmes and interventions aimed at assisting them in achieving this national goal.

Aim: This study aimed to determine which elements of human capital—general or specific—have the most influence on SME job creation.

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.

Methods: This study employed a quantitative cross-sectional design. Data were collected through an online survey using random sampling, resulting in a sample size of 297. Ordered logistic regression analysis was conducted to test the study hypotheses.

Results: The findings showed that applied prior work experience and experience similar with the current business have the most influence on SME job creation. Conversely, technical training and prior experience in unrelated work negatively influence job creation.

Conclusion: These insights underscore the importance of intentional career planning during employment to ensure that accumulated experience supports future entrepreneurial ventures and enhances job creation potential.

Contribution: The study contributes to entrepreneurial development by highlighting the practical value of gaining relevant work or industry experience through employment before starting a business, as a means to enhance job creation outcomes.

Keywords: entrepreneurship; small- and medium-sized enterprises; human capital; job creation; small business; business experience.

Introduction

Entrepreneurship is a key driver of future prosperity, including job creation as a source of economic growth through small- and medium-sized enterprises (SME) (GEM 2025). Although many countries expect the SME sector to create jobs, it has not consistently met this expectation. Moreover, the GEM (2025) report suggests that it might not happen in the next 5 years as most start-ups do not plan to employ anyone besides themselves within the next 5 years. This is one of the reasons for the low rate of job creation (GEM 2025). According to the National Development Plan, South Africa plans to create 11 million jobs by 2030, and 90% of those jobs are expected to come from SMEs. However, the rate at which jobs have been created, combined with the current high unemployment rate, suggests that this goal may not be achieved by 2030 unless something changes significantly (Msimango-Galawe & Hlatshwayo 2021; StatsSA 2024). This highlights the crucial role SMEs can play in addressing South Africa's challenges. It also underscores the need for entrepreneurship research to continue investigating how this sector can contribute and meet the expectations, as its impact to date has not been as significant as desired.

The South African economy faces structural constraints – including electricity shortages, high inequality and poverty rates, rising unemployment rates, weak net export performance and slow economic growth – which hinder its potential for economic development (World Bank 2022). As of 2015, South Africa had a Gini coefficient of 0.65 (StatsSA 2024), which has been forecasted to reduce to 0.63 in 2025 (Statista 2025). Although a slight improvement, this still indicates a high level of income inequality in the country. According to the recent StatsSA figures, South Africa's unemployment rate was 32.9% in Q4 2024.

This does not paint a good picture, which presents the need for new solutions and a better understanding of this problem (StatsSA 2024). In the face of numerous challenges, SMEs remain essential to the nation's economy. They are instrumental in job creation, with estimates indicating that SMEs contribute a remarkable 60% to South Africa's employment and account for 34% of its gross domestic product (GDP) (Rens 2021; Retail Capital 2024). Therefore, supporting and nurturing these businesses are crucial for driving economic growth and solving the unemployment issue.

A relationship has been established between human capital (HC) and the performance of SMEs (Fatoki & Olawale 2011; Islam, Mian & Ali 2009; Lopa & Bose 2014; Man 2001). As HC is arguably the most vital intangible asset a business possesses, it serves as a crucial foundation for sustained growth and long-term success (Chiganze & Sağsan 2022). Human capital is vital for enhancing productivity, driving innovation and enabling the adoption of advanced manufacturing methods and technologies. Investing in HC not only improves efficiency but also positions organisations for sustained success in a rapidly evolving market (Dhobha & Madondo 2024). In today's dynamic knowledge economy, where digital advancements occur at an unprecedented pace, HC quality within organisations is vital for sustaining a competitive edge (Dhobha & Madondo 2024). Existing research tends to investigate HC at a higher level, and therefore it is important to understand HC more deeply by examining the different elements it comprises of.

The failure rates of SME remain high, estimated at more than 50% in the 1st year and increasing to up to 90% by the 10th year (Msimango-Galawe & Hlatshwayo 2021; Mutenyoka & Madzivhandila 2014; Otto 2025). Despite the efforts undertaken by the South African government to promote SMEs, these initiatives appear to have had minimal success in alleviating unemployment. The issue of structural unemployment in South Africa, however, has garnered significant interest from scholars in the field of entrepreneurship (GEM 2024).

In this context, this study categorises the phenomenon into two distinct types of HC: general human capital (GHC) and specific human capital (SHC), where SHC refers to entrepreneurial human capital (EHC), which can be both task and firm specific.

The objective is to answer the primary research question of which HC elements influence job creation the most. To answer this, the study will respond to the following four sub-research questions of which the first two fall under GHC and the last two under EHC that represent SHC:

- To what extent does general formal education influence SME job creation?
- To what extent does general work experience influence SME job creation?

- To what extent does entrepreneurship education influence SME job creation?
- To what extent does entrepreneurial work experience influence SME job creation?

Literature review

This study departs from the concept of the theory of investment in HC, as outlined in a seminal paper by Becker (1962), which argues that HC can be categorised into GHC and SHC (firm or task). Building on Becker's paper, the study investigates the influence of different elements of HC to determine which one has the most influence on job creation. Although Becker's paper focused on performance, this study uses the same model to test the hypothesis on job creation.

Human capital theory and its origin

The seminal work of Becker on investment in HC created a lot of interest in HC research, and many studies have been published on the topic since then. It has also expanded to the entrepreneurship discipline, where scholars argue that HC plays a significant role in the success of SMEs (Becker 1962; Gimeno et al. 1997). Schultz (1961), one of the early academic theorists of Human Capital Theory, viewed HC as a key factor influencing the economic growth of modern national economies (Abas, Pardiman & Supriyanto 2024; Kwon 2009). Schultz (1961) viewed HC as similar to property regarding the labour force in the classical sense, positing that the productive capacity of individuals dwarfs all other forms of wealth put together. Based on this view, most HC scholars have come to accept that HC can be defined as knowledge and skills embedded in an individual (Becker 1962; Kwon 2009). Currently, HC is considered the most significant knowledge-based asset, supporting the sustainability and growth of value-added expertise within organisations (Chiganze & Sağsan 2022). Abas et al. (2024), drawing on Becker's (1994) concept of HC, assert that the skills, knowledge and competencies of employees serve as capital that can yield returns similar to other capital investments.

As a result, when individuals invest in their personal development, they enhance their productivity and the contributions made from an organisational perspective. As an intangible component of an organisation's intellectual capital, HC is the most influential yet challenging factor to quantify. In today's world, knowledge holds immense value, and HC – which represents this wealth of knowledge – is critical for maintaining and achieving a competitive advantage (Rahimi et al. 2024). These attributes inform individuals' ability to pursue and fulfil personal, professional and organisational goals (Chiganze & Sağsan 2022). As stated by Adam Smith in his seminal work 'The wealth of nations', HC is vital as a source of progress and increased economic activity (Rahimi et al. 2024).

Human capital has also been associated with innovation and described as an indispensable resource within its value-creation process (Alegre et al. 2012). It is further suggested that expanding scientific and technical knowledge increases labour productivity and other inputs of production capital (Becker 1964, 1994). Human Capital Theory posits that countries with sustained growth have also seen significant increases in the education and training of their labour forces (Becker 1964, 1994).

Human capital and small- and medium-sized enterprises job creation

According to the World Bank (2024), South Africa has experienced a notable decline in economic growth over the past 15 years. This trend is particularly evident in the SME sector, which has seen a year-on-year reduction of 1.3% in the total number of enterprises. The decline is attributed to a combination of factors, including subpar economic performance and prevailing challenging economic conditions (SEDA 2024). External shocks, such as the coronavirus disease 2019 (COVID-19) pandemic, geopolitical instabilities and broader economic impacts, along with slowing internal productivity rates and diminished investment activity, have collectively undermined the country's competitiveness and overall economic performance.

Human capital comprises the insights, ideas, skills, knowledge, expertise, creativity and learning capabilities of employees, all of which are vital for organisational and economic growth. Skilled employees play a critical role in driving economic output and fostering sustainable development, as highlighted by Ngepah, Seba and Mabindisa (2021). Their research underscores the essential contributions of HC to a thriving economy. Ngepah et al. (2021) further investigate the intricate bidirectional relationship between HC and total output, demonstrating that enhancements in HC positively influence economic performance. Consequently, deficiencies in the 'stock' of HC can impede current productivity and jeopardise long-term economic prospects, as remarked by the World Bank (2024). In addition, Dhobha and Madondo (2024) emphasise a significant positive correlation between the quality of HC and employment generation. As such, SMEs are integral to the employment landscape of South Africa.

The Labour Force Survey conducted by Statistics South Africa in 2022 indicated that SMEs generated 9.31 million jobs during the second quarter of that year, representing 59% of total employment in the nation at that time. These findings underscore the imperative for strategic investments in education and skill development to cultivate economic resilience and promote sustainable growth. Such investments are essential not only for enhancing individual capabilities but also for ensuring the overall health and vibrancy of the economy. A significant number of research that has focused on the impact of HC on the performance of SMEs have predominantly examined the early stages of business development (Abas et al. 2024; Ngepah et al. 2021; Rens et al. 2021; Retail Capital 2024; SEDA 2022, 2024).

Human capital research delineates three distinct forms of HC: GHC, firm-specific HC (FHC) and task-specific HC (THC). Becker (1964), a leading authority in the field of HC, makes a significant distinction between two primary categories: GHC, which encompasses the general knowledge and skills acquired through education and work experience and possesses transferable characteristics. Conversely, SHC, which includes both firm-specific and task-specific components, is developed through education, training and experiences that are particular to specific tasks and industries. Becker (1964, 1993) asserts that SHC is not generally transferable to other positions, sectors or organisations. He further posits that HC is deemed specific when it enhances an individual's productivity within a particular firm and its unique context (Abas et al. 2024; Kwon 2009). This study then investigates both but focusing on EHC on the SHC category. These are operationalised as education, training and experience for both GHC and EHC categories (Abas et al. 2024).

General human capital

According to Lanza and Simone (2024), GHC is a crucial signalling mechanism for transferable skills, knowledge and experience. This expertise is invaluable to organisations and can be strategically utilised to drive superior results. Individuals and entrepreneurs with a strong foundation of general formal education (GFE) are often better equipped to navigate complex challenges. In a competitive landscape, GHC goes beyond simply acquiring transferable skills; it is essential for the success of any venture. Research indicates that GHC can significantly enhance a team's competitive advantage, as each member brings distinct and innovative skills and perspectives that collectively boost performance (Lanza & Simone 2024).

According to Ogujiuba et al. (2025), skilled, educated and adaptive workforces help foster sustainable economic environments. Addressing complex problems is crucial for entrepreneurs to navigate challenges, foster growth and generate employment opportunities. The utilisation of GHC offers a distinct advantage in this endeavour. The use of strong HC skills enhances productivity, innovation and efficiency. It also helps drive competitiveness by enabling organisations to adopt better practices and technologies, as well as to respond more effectively to environmental and economic market changes (Ogujiuba et al. 2025). Research conducted by Ucbasaran, Westhead and Wright (2008) demonstrates that formal education has a positive impact on the identification and pursuit of opportunities. Likewise, entrepreneurs with a higher level of formal education tend to achieve greater earnings, which in turn facilitates access to funding for their enterprises (Baptista, Karaöz & Mendonça 2014).

Furthermore, GHC enhances an organisation's absorptive capacity, allowing for the effective integration and application of new knowledge and competencies. While GHC holds substantial value because of its broad applicability, it is

important to note that it may not always provide the specialised knowledge required for specific organisations, industries or sectors. This limitation can sometimes result in competency traps (Lanza & Simone 2024), potentially hindering an organisation's ability to adapt to changes in the environment (Ganotakis 2012).

General HC empowers individuals to learn, adapt and innovate, while managerial HC offers practical expertise in leading and managing a business (Hirata, Suzuki & Takii 2019). According to Estrin, Mickiewicz and Stephan (2016), an investment in HC development enables individuals to harness new and existing knowledge and adapt it to their environmental and business situations. Hirata et al. (2019), Khan et al. (2022) and Chiganze and Sağsan (2022) collectively demonstrate that the interaction between GHC and managerial HC has a positive impact on EHC. This study operationalised GHC into two categories: GFE and work experience.

General formal education

Education and experience play an important role in shaping entrepreneurial leadership capabilities among SMEs (Shoprite 2025). General formal education encompasses both basic and tertiary education that is not specific to any particular business. Often underestimated, GFE has been recognised by scholars as a significant source of social capital. According to Ziberi et al. (2022), as cited by Ramatni (2024), education plays a crucial role in sustained economic growth. Viewed as an investment, education is considered a prerequisite for the development of various sectors, as a skilled workforce can foster innovation and enhance productivity (Ramatni 2024).

According to Jamaludin and Seman (2024), education significantly influences entrepreneurial abilities leading to greater potential for success in their ventures. General formal education enables entrepreneurs to capitalise on the social capital accrued through the education system, thereby facilitating the identification and exploitation of various opportunities (Shane & Khurana 2003).

It is important to exercise caution when placing too much emphasis on formal education, as this can lead to unintended consequences. According to Jamaludin and Seman (2024), non-graduate entrepreneurs often utilise their resilience and depth of local knowledge to effectively navigate challenges and drive entrepreneurial success. On the other hand, entrepreneurs with formal education tend to have higher growth aspirations and access to more resources. However, graduate entrepreneurs may overestimate the importance of their education, believing it to be sufficient for achieving business success. This belief can prevent them from seeking valuable information from other sources, which could significantly enhance their decision-making and help propel their ventures forward. As such, adopting a more open-minded approach can lead to important insights and opportunities.

In the 'State of SMMEs in South Africa Survey' published by Shoprite Holding in 2025, the educational qualifications of SME owners reveal significant insights into the educational demographics of this critical sector. The survey indicates that approximately 29.8% of SME business owners possess a bachelor's degree, while 23.7% have achieved a matric qualification. Furthermore, 18.0% of these entrepreneurs hold a diploma. As the trend among larger businesses illustrates a higher preference for postgraduate qualifications, this may be because of the more complex operational demands they face and the greater demand to drive innovation to sustain growth (Shoprite 2025). These findings highlight the diverse educational backgrounds of the SME owners, which may influence their business practices and overall contributions to the economy.

The findings from the Shoprite study support the earlier perspective presented by Mamabolo, Kerrin and Kele (2017), which indicates that GFE is more common among entrepreneurs in the early-stage business development phase than in the established businesses. This trend is further illustrated in the quarterly Small, micro and medium enterprise (SMME) reports published by SEDA (2022, 2024). However, it is essential to note that this does not necessarily imply a direct impact on the SME's ability to perform and create jobs.

This suggests that formal education is a crucial factor for the growth of SMEs and their ability to create jobs. Despite certain drawbacks, this study argues that the advantages of formal education far outweigh the disadvantages and lacking it can be detrimental to job creation in SMEs. Considering these factors, the following hypothesis has been formulated:

H1: General formal education positively influences SME job creation

General work experience

Studies have linked experience with age and found an inverse U relationship between age and business performance (Ganotakis 2012), as older age reduces entrepreneurial success. That being said, people with general work experience and managerial experience are better placed to not only identify opportunities but also raise capital, thus setting up larger and better-equipped businesses (Gabrielsson & Politis 2012; Msimango-Galawe & Mazonde 2024). Researchers have also found that functional work experience positively influenced the generation of business ideas.

Entrepreneurs with general work experience in the same industry as their SMEs often experience a distinct advantage. Industry insiders are typically privy to critical information regarding cost structures, pricing strategies and other essential factors (Dimov 2010; Msimango-Galawe & Mazonde 2024). Soriano and Castrogiovanni (2012) echoed this observation, finding that prior experience in a firm within the same industry correlates with enhanced productivity. Therefore, industry experience will likely facilitate more

adept navigation of challenges, enabling entrepreneurs to effectively meet demand conditions (Gabrielsson & Politis 2012; Msimango-Galawe & Mazonde 2024).

Baptista et al. (2014) highlighted the critical importance of timing in effectively leveraging industry-related work experience. Their analysis indicates that prolonged absences from the industry significantly depreciate industry-specific HC. Therefore, start-ups founded by individuals employed in the same industry immediately before their venture are likely to derive greater benefits from their specialised knowledge and skills. Conversely, Hirata et al. (2019) assert that extended tenure as an entrepreneur within a small firm can adversely affect GHC development. They contend that entrepreneurs and employees may have limited opportunities to substantially enhance their skills and expertise during this period. Moreover, Baptista et al. (2014) observe that the decision to leave formal employment to establish a business involves considerable opportunity costs, which can catalyse entrepreneurs' perseverance.

Furthermore, individuals transitioning from the corporate environment do not solely retain industry experience; they also possess financial resources, self-efficacy and extensive networks of colleagues who can assist with specialised tasks at minimal cost. Considering these, the following hypotheses were proposed:

- H2:** General work experience positively influences SME job creation
- H2(a):** Experience in a management position positively influences SME job creation.
- H2(b):** Experience in similar work positively influences SME job creation.
- H2(c):** Experience with some work applied positively influences SME job creation.
- H2(d):** Experience unrelated to current work positively influences SME job creation.

Specific human capital – Entrepreneurial

Specific HC refers to HC that is particularly suited to a particular task or industry. In this study, SHC is operationalised as EHC, which combines entrepreneurship education (EE) and entrepreneurial work experience within the SME space.

Entrepreneurship education

Entrepreneurship education may include formal business, management and commercial education. Causal linkages were found between EE relating to managerial skills, social competence and venture effectiveness (Elmuti, Khoury & Omran 2012). This interplay facilitates the blending of skills, promoting both adaptability and learning. As a result, entrepreneurs can develop practical leadership and managerial abilities, which better equip them to navigate the challenges and uncertainties of running and managing a business.

Entrepreneurship education has been shown to significantly influence the performance of SMEs, enhance managerial capabilities and improve self-efficacy, thereby increasing the likelihood that individuals will choose self-employment (Olanrewaju 2024; Van der Sluis, Van Praag & Vijverberg 2008). According to Estrin et al. (2016), the skills cultivated through entrepreneurial education, such as the proactive identification of market opportunities and the ability to navigate obstacles in venture creation, are essential for building entrepreneurial competency. Furthermore, Olanrewaju (2024) emphasises that entrepreneurial education fosters a culture characterised by inventiveness, creativity and a proactive approach to overcoming challenges. The core components of entrepreneurial education revolve around the identification, evaluation and exploitation of opportunities within the marketplace, which are critical for entrepreneurial success and the ability to develop and create jobs sustainably.

When examining EE from a technical perspective, especially given the rapid evolution of technology, a study conducted by Ganotakis (2012) indicates that a high level of technical education alone does not necessarily lead to improved performance outcomes. Instead, the research highlights that a synergistic combination of technical education and formal business education is more effective in enhancing firm performance. Ganotakis further posits that the presence of managerial capabilities is essential to complement technical expertise, ultimately leading to improved performance metrics and positive business results. This perspective suggests that possessing a high level of HC, in isolation, does not guarantee enhanced performance capabilities; such capital must be effectively supported and integrated within the organisational broader framework. Alqershi, Mokhtar and Abas (2021) posit a comprehensive view, which underscores the notion that HC serves as a strategic asset for enterprises, significantly contributing to the pursuit of superior business performance. Therefore, the following hypotheses were proposed:

- H3:** Entrepreneurship education positively influences SME job creation
- H3(a):** Entrepreneurship education positively influences SME job creation.
- H3(b):** Training in business management positively influences SME job creation.
- H3(c):** Training in financial management positively influences SME job creation.
- H3(d):** Training in technical skills positively influences SME job creation.

Entrepreneurial work experience

The phrase 'entrepreneurial work experience' is used in this study instead of 'entrepreneurial experience', to be consistent with the phrase used for general work experience, emphasising the differences and specificity. Entrepreneurial capabilities encompass a range of components, including knowledge, skills and experience, all of which are essential for a business's success (Jannah, Susyanti & Farida 2024). Entrepreneurs assume various roles and frequently shift

their focus among critical aspects in their business, including reception, finance and operations. This exposure to different areas helps them develop a broad and versatile skillset (Hirata et al. 2019). Effective and efficient entrepreneurs possess the ability to identify opportunities for exploitation and make informed decisions while navigating challenges (Jannah et al. 2024). Importantly, these capabilities are not inherently present; instead, they are cultivated through a combination of experience, education and training.

Experienced entrepreneurs can effectively leverage insights gained from previous ventures to enhance their current start-up initiatives, particularly in terms of industry-specific knowledge (Dimov 2010). Habitual entrepreneurs (those who have initiated multiple businesses concurrently) and serial entrepreneurs (those who have exited one venture to embark on another) are positioned to harness extensive business experience, which significantly increases the likelihood of business survival (Baptista et al. 2014). While entrepreneurs in the nascent stages of business contribute to innovation and economic dynamism, those managing established enterprises, including owner-managers, play a crucial role in providing stable employment. This is achieved through the strategic utilisation of social capital accumulated from their prior experiences (Amros & Bosma 2014). This synthesis underscores the diverse ways in which entrepreneurial experience influences both the sustainability of new ventures and the broader economic landscape. This development process emphasises the importance of ongoing learning and adaptability in driving entrepreneurial success (Jannah et al. 2024). According to Ganotakis (2012), this entrepreneurial experience encompasses a wide range of activities, including business ownership, industry-related and managerial experience, as well as commercial experience, highlighting the diverse and expansive nature of the entrepreneurial journey.

The literature highlights a positive relationship between HC and business innovative performance (AlQershi et al. 2021). Central to this is the notion of specific entrepreneurial

experience, which begins with initiating and managing ventures and equips individuals to navigate the uncertainties of new enterprises (Dimov 2010). Gaining entrepreneurial experience is vital as it develops diverse managerial, innovative and business skills that enhance a venture's growth and long-term sustainability in a competitive landscape (Hirata et al. 2019). Notably, entrepreneurial experience is linked to new venture survival, a dimension often overlooked in research (Bosma et al. 2004). However, while experience correlates with higher start-up rates, it does not significantly influence subsequent progress (Jannah et al. 2024; Samuelsson & Davidsson 2009). This suggests that while entrepreneurial experience is crucial for initial success and survival, its impact on ongoing growth trajectories requires further exploration.

Ucbasaran et al. (2008), on the other hand, conceptualise entrepreneurial experience as episodic knowledge. They contend that such episodic knowledge is exclusively acquired through direct business ownership experiences. This form of knowledge encompasses not only managerial expertise but also the development of social and business networks, which together empower entrepreneurs to effectively navigate and resolve complex challenges (Shane & Khurana 2003). Furthermore, as articulated by AlQershi et al. (2021), this integration of experience and expertise is instrumental in shaping a business's distinctive character and market presence, ultimately serving as a strategic asset for the firm.

In reconciling different narratives on entrepreneurial experience, this study proposed that the benefits of entrepreneurial experience outweigh its drawbacks. In light of these considerations, the following hypothesis was proposed:

H4: Entrepreneurial work experience positively influences SME job creation

The study's conceptual framework, summarised in Figure 1, illustrates all the hypotheses and the elements of HC under investigation.

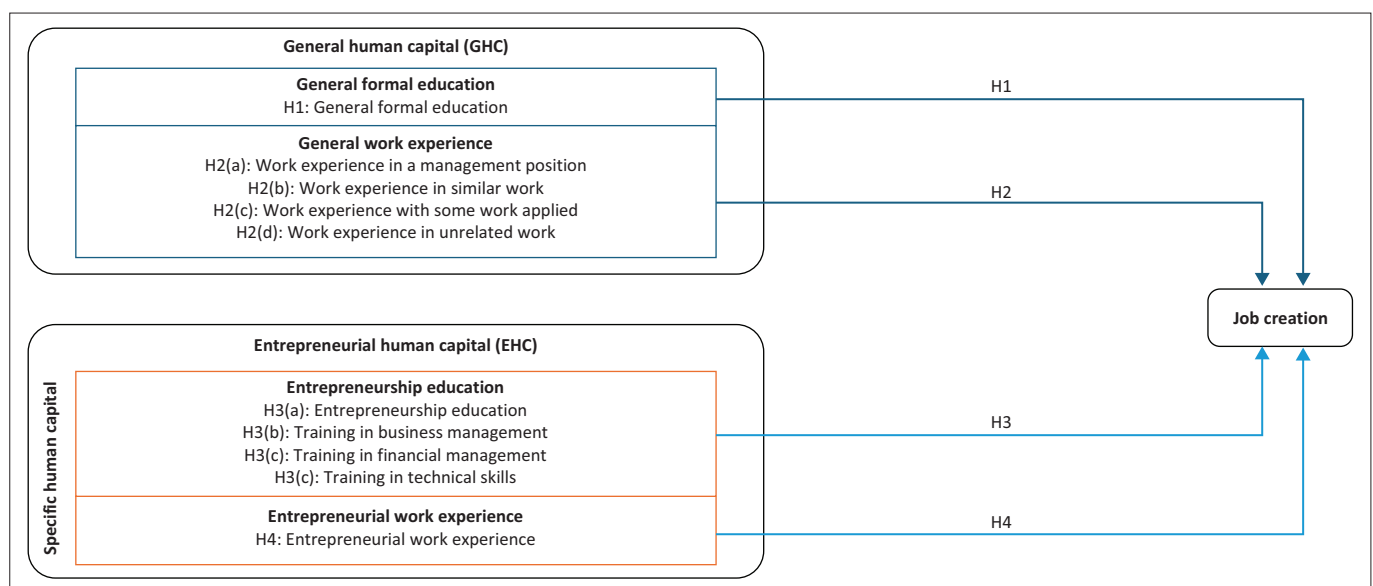


FIGURE 1: Conceptual framework.

Research design and methodology

Research approach and design

This study followed a post-positivist paradigm and employed a quantitative, deductive approach to examine the influence of HC elements on job creation in South African SMEs. The post-positivist paradigm was adopted because it acknowledges the complexity of social reality while valuing objective and measurable facts (Maksimović & Evtimov 2023). Positivism also recognises that knowledge is tentative and context dependent to allow for a more nuanced understanding of phenomena such as HC and job creation (Maksimović & Evtimov 2023).

A quantitative deductive approach was employed to rigorously test hypotheses obtained from existing theories, allowing systematic examination and validation of relationships between the study's variables (Barroga et al. 2023).

The cross-sectional design was necessary for this study because it provides an efficient way for the analysis of associations between the elements of HC and job creation at a single point. This is an appropriate method, especially when a study's, such as the current study, goal is to observe correlations rather than causality (Setia 2016).

Sampling approach

The study's target population included SMEs located across all nine provinces of South Africa. This comprised diverse settings such as urban, semi-urban and rural areas. This extensive geographic coverage was intended to capture a representative sample of the different business environments within the country.

Simple random sampling, which was employed in this study, was appropriate to ensure that every SME with online access had an equal opportunity to participate in the study, thus minimising selection bias and improving the generalisability and fairness of the findings (Ahmed 2024). Eligible respondents were specifically owners or senior managers who possessed decision-making authority to ensure that the data collected reflected informed views on business operations and job creation. A total of 297 valid responses were received. There were seven responses with missing values for some of the variables. However, these responses were handled with care, technically making some variables have 290 responses. Thus, both the variables that received 297 responses and those that received 290 responses were used and were sufficient to achieve adequate statistical power for robust quantitative analysis.

Research instrument

Data were collected using a structured questionnaire administered via the Qualtrics platform. Measurement scales were adapted from Galawe (2017) PhD thesis and covered five dimensions relating to GHC, EHC and job

creation constructs (see Table 1). Most items were rated on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree), and a few were categorical (i.e. education). The 5-point Likert scale is commonly used in social science research for its simplicity and effectiveness in capturing respondents' attitudes and perceptions with sufficient variability while minimising respondent fatigue (Tanujaya, Prahmana & Mumu 2022). The instrument was used in a previous study, and therefore there was no need to pilot test it (Galawe 2017). Structured questionnaires are a preferred method when collecting quantitative data to ensure consistency and ease of statistical analysis (Creswell & Creswell 2017), which is the case of this study.

Data analysis

Data were analysed in *Stata 16* (StataCorp, College Station, Texas, US). Descriptive statistics were first generated to profile the sample (entrepreneurs and businesses' characteristics). Pearson correlation was used to examine associations and test for multicollinearity, and the results showed the data were good for further analysis. Hypotheses were tested using ordered logistic regression, as the dependent variable (job creation) was measured in ordered categories. Model assumptions, including proportional odds, were verified, and statistical significance was set at the 5% level.

TABLE 1: Measurement scales.

Variables	Human capital elements	Description	Measurements
Independent variables	General human capital		
	Formal education		
	GFE	General formal education	What is your level of formal education? (Options: No schooling to PhD)
	General work experience		
	EMP	Experience in a management position	Before starting this business, have you ever worked in a formal employment setting as an employee for more than a year? If so, please respond to the following statements. (Likert scale 1–5 from strongly disagree to strongly agree)
	ESW	Experience in similar work	
	EWA	Experience with some work applied	
	EUW	Experience unrelated to current work	
	Specific human capital – Entrepreneurial		
	Entrepreneurship education		
Dependent variable	EE	Entrepreneurship education	What is your level of entrepreneurship education? (Options: No schooling to PhD)
	TBM	Training in business management	Before starting this business, have you ever received the following training in relation to your business? (Likert scale 1–5 from strongly disagree to strongly agree)
	TFM	Training in financial management	
	TTS	Training in technical skills	
	Entrepreneurial work experience		
	EWE	Entrepreneurial work experience	Number of years working and managing a business as an entrepreneur
	EG	Employee growth (representing job creation)	What has been the average growth in the number of employees in your business in the past three or a few years? (Options from decline to significant growth)

Ethical considerations

Ethical approval to conduct this study was obtained from the University of the Witwatersrand Human Research Ethics Committee (No. H14/04/03) before data collection resumed. Participation was voluntary, with informed consent secured from all respondents. The questionnaire was coded in a way that ensured respondents do not continue with the rest of the survey if they did not consent to participate in the study. This function was voluntary on the survey instrument throughout data collection. Anonymity and confidentiality were maintained throughout, no personal details were collected and the data were stored securely for academic use only.

Results

Entrepreneurs and business profiles

Both demographic data and business characteristics defined the profiles of the respondents and businesses surveyed. Among the 297 respondents, only 28% were in the youth category, aged between 18 years and 35 years. The sample consisted of 58% males and 42% females. Regarding race, 53%, 46% and 1% of the respondents identified as

black, white and other, respectively. In examining the entrepreneurs' educational backgrounds, most respondents held a diploma or certificate as their highest qualification. Specifically, 11% had completed matriculation, while 3% had qualifications lower than matriculation. In addition, 23% of the respondents were graduates, and 32% possessed a postgraduate qualification. In entrepreneurial education, 16% of respondents had no entrepreneurial qualification, 43% held a diploma or certificate, 10% were university graduates and 21% possessed a postgraduate qualification.

The business profile indicates that Gauteng province is the primary location for a significant proportion of businesses (46%), followed by Western Cape (26%) and KwaZulu-Natal (11%), with the remainder distributed among the six provinces. It is important to note that some businesses operate in multiple locations, and the total would not add up to 100%.

Descriptive statistics and correlation

The correlation matrix in Table 2 indicates a relationship between the dependent variable (Job creation) and all the

TABLE 2: Correlation matrix and descriptive statistics.

Description	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
JEG	2.53	0.961	1.000	-	-	-	-	-	-	-	-	-	-
TBM	3.44	1.503	0.034	1.000	-	-	-	-	-	-	-	-	-
TFM	3.29	1.442	0.052	0.483	1.000	-	-	-	-	-	-	-	-
GFE	5.89	1.417	0.121	0.221	0.211	1.000	-	-	-	-	-	-	-
EE	5.49	2.000	0.107	0.342	0.389	0.330	1.000	-	-	-	-	-	-
EMP	3.87	1.505	0.178	0.067	0.070	0.043	0.075	1.000	-	-	-	-	-
EWE	5.49	2.000	0.139	0.068	0.087	0.022	0.092	0.636	1.000	-	-	-	-
ESW	2.95	1.555	0.245	0.250	0.359	0.145	0.311	0.232	0.202	1.000	-	-	-
EWA	4.16	1.102	0.259	0.209	0.145	0.125	0.149	0.196	0.181	0.396	1.000	-	-
EUW	2.67	1.640	-0.066	-0.057	0.043	0.075	0.017	0.046	0.037	0.012	0.143	1.000	-
TTS	3.03	1.614	0.212	0.293	0.321	0.222	0.288	0.170	0.073	0.393	0.270	0.087	1.000

Note: Negative correlations are signified in bold.

SD, standard deviation; JEG, employee growth (representing job creation); TBM, training in business management; TFM, training in financial management; GFE, general formal education; EE, entrepreneurship education; EMP, experience in a management position; EWE, entrepreneurial work experience; ESW, experience in similar work; EWA, experience with some work applied; EUW, experience unrelated to current work; TTS, training in technical skills.

BOX 1: Ordered logistic regression – Formal education.

OLOGIT: JEG GFE EE						
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 observations = 297			
			LR Chi ² (2) = 6.63			
			Prob > Chi ² = 0.0363			
			Pseudo R ² = 0.00074			
Log likelihood = -409.73735						
EG	Coef.	SE	z	p > z	95% CI	
GFE	0.1312712	0.0791592	1.66	0.097	-0.023878	0.2864204
EE	0.0692738	0.0535843	1.29	0.196	-0.0357495	0.1742972
/cut1	-0.5540581	0.3180793	-	-	-1.177482	0.0693658
/cut2	2.270852	0.2838323	-	-	1.714551	2.827153
/cut3	3.4902	0.329186	-	-	2.845007	4.135392
/cut4	6.896388	0.4962703	-	-	5.923716	7.86906

JEG, employee growth (representing job creation); GFE, general formal education; EE, entrepreneurship education; EG, Employee growth; SE, standard error; CI, confidence interval; OLOGIT, ordered LOGIT.

independent variables (HC elements). However, 9 out of 10 independent variables show a positive relationship, while experience unrelated to current work (EUW) exhibits a negative correlation with employee growth (JEG). The three HC elements with the strongest relationship to job creation are experience with some work applied (EWA) ($r = 0.259$), experience in similar work (ESW) ($r = 0.245$) and training in technical skills (TTS) ($r = 0.212$). All independent variables have a relationship with the dependent variable (JEG), so they were all considered for further analysis.

Hypothesis testing results

Four hypotheses were tested, examining GHC and EHC elements, each with education and work experience. The results and their interpretation are presented in Box 1, Box 2 and Box 3.

Results on general formal education and job creation

H1: General formal education positively influences SME job creation

The results in Box 1 support H1 and show that GFE influences SME job creation, though not significant at 5%, with a p -value of $0.097 > 0.05$. The results suggest that the odds of employee growth increase by 13% for every 1% increase in GFE.

Results on general work experience and job creation

H2: General work experience positively influences SME job creation

This hypothesis was broken down into four, and results presented in Box 2 are interpreted in that order.

Box 2: Ordered logistic regression – Work experience.

OLOGIT: JEG EMP EWE ESW EWA EUW						
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 observations = 290		
				LR Chi ² (5) = 33.31		
				Prob > Chi ² = 0.0000		
Log likelihood = -381.12639				Pseudo R ² = 0.0379		
EG	Coef.	SE	z	$p > z $	95% CI	
EMP	0.0901755	0.0697255	1.29	0.196	-0.0464841	0.226835
EWE	0.0174012	0.0580385	0.30	0.764	-0.0963522	0.1311546
ESW	0.242143	0.1030383	2.35	0.019	0.0401917	0.4440943
EWA	0.3959203	0.1304684	3.03	0.002	0.1402069	0.6516337
EUW	-0.0354816	0.0672644	-0.053	0.598	-0.1673175	0.0963542
/cut1	-1.705148	0.7517104	-	-	-3.178473	-0.2318227
/cut2	1.089938	0.7408386	-	-	-0.3620795	2.541955
/cut3	2.593082	0.7546713	-	-	1.113953	4.07221
/cut4	3.958692	0.7937547	-	-	2.402962	5.514423

OLOGIT, ordered LOGIT; JEG, employee growth (representing job creation); EMP, experience in a management position; EWE, entrepreneurial work experience; ESW, experience in similar work; EWA, experience with some work applied; EUW, experience unrelated to current work; EG, Employee growth; SE, standard error; CI, confidence interval.

Box 3: Ordered logistic regression – Current business-related training.

OLOGIT:EG TTS TBM TFM						
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 observations = 290		
				LR Chi ² (3) = 14.99		
				Prob > Chi ² = 0.0018		
Log likelihood = -380.29434				Pseudo R ² = 0.0170		
EG	Coeff.	SE	z	$p > z $	95% CI	
TBM	-0.0607872	0.1297231	-0.47	0.639	-0.3150398	0.1934654
TFM	0.0247112	0.1352481	0.18	0.855	-0.2403701	0.2897925
TTS	-0.4575824	0.1219148	3.75	0.000	0.2186339	0.696531
/cut1	-2.391744	0.3610267	-	-	-3.099343	-1.684145
/cut2	0.4154843	0.3184193	-	-	-0.2086061	1.039575
/cut3	1.929888	0.3418504	-	-	1.259874	2.599903
/cut4	3.297253	0.4180738	-	-	2.477843	4.116662

OLOGIT, ordered LOGIT; EG, Employee growth; TTS, training in technical skills; TBM, training in business management; TFM, training in financial management; SE, standard error; CI, confidence interval.

H2(a): Experience in a management position positively influences SME job creation

The hypothesis that past experience in management positions (EMP) positively influences SME job creation was positive but insignificant, $p > 0.05$. The results in Box 2 suggest that its increase will not influence job creation in a meaningful way.

H2(b): Experience in similar work positively influences SME job creation

The model in Box 2 shows that a 1% increase in ESW (past experience with similar work) increases the odds of SME ability to create jobs by 24%. Thus, this hypothesis was supported and significant at $p < 0.05$.

H2(c): Experience with some work applied positively influences SME job creation

The model in Box 2 suggests that at 5% significance, a 1% increase in EWA (past experience with some work applied to the current work) increases the odds of SME ability to create jobs by 39%. The results show that this hypothesis was supported given that EWA significantly influenced SME job creation.

H2(d): Experience unrelated to current work positively influences SME job creation

The hypothesis was not supported as the influence was negative and insignificant. Therefore, past experience unrelated to current work negatively influences job creation.

Results on entrepreneurship education

H3(a): Entrepreneurship education positively influences SME job creation

Box 1 shows that EE negatively influences SME job creation (JEG) and is not statistically significant.

H3(b): Training in business management positively influences SME job creation

The study's findings show that TBM negatively influences SME job creation but is non-significant. Therefore, the hypothesis was not supported as the inverse was found.

H3(c): Training in financial management positively influences SME job creation

No statistically significant evidence was found suggesting that TFM significantly influences job creation.

H3(d): Training in technical skills positively influences SME job creation

Contrary evidence was found in Box 3 that TTS influences job creation but, interestingly, in a negative way. It was a significant negative influence; thus hypothesis was not supported.

Box 3 has three independent variables: TBM (current business-related training in business management), TFM (current business-related training in finance management) and TTS (current business-related training in technical skills). Of the

three variables, only owners with training in technical skills have statistical significance in influencing the growth of employees among small businesses. The significant variable, TTS, is significant at 5% significance level. The results imply that when training in technical management skills increases by 1%, employee growth (JEG) responds positively by 45%.

Results on entrepreneurial work experience and job creation

H4: Entrepreneurial work experience (EWE) positively influences SME job creation (JEG)

The study's results in Box 2 shows that no significant influence was found for H4. Entrepreneurial experience measured in number of years (EWE) is not significant in explaining the increase in employee growth (JEG).

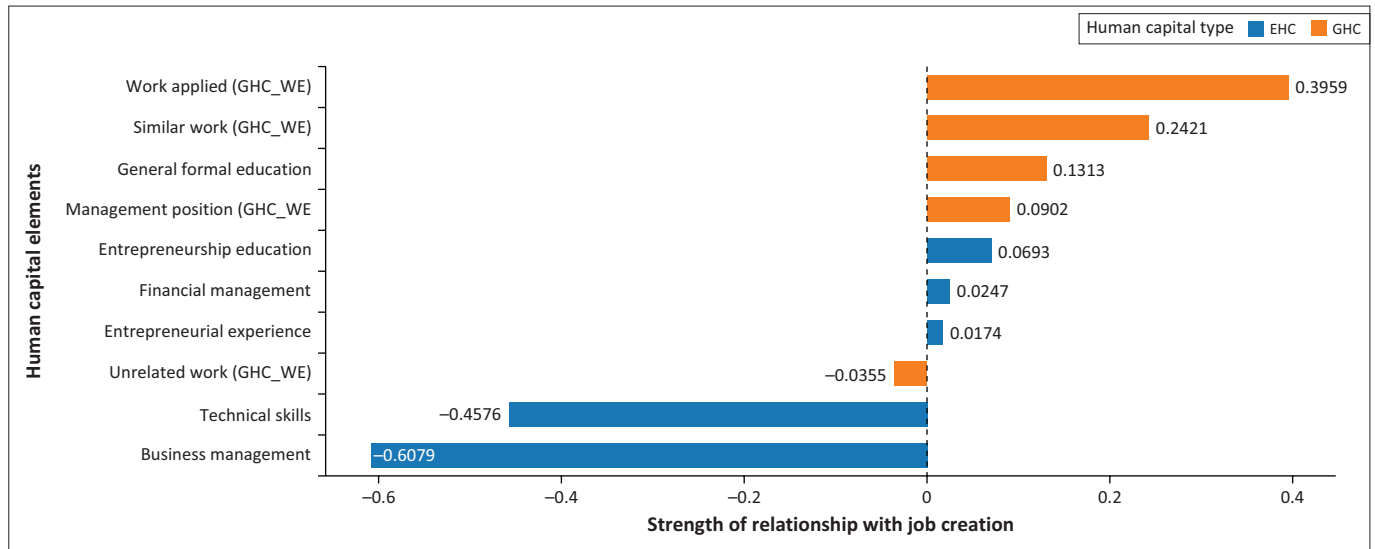
Summary of key findings

Table 3 summarises the findings that enabled the study to answer the primary research question, of which HC elements are likely to influence job creation the most in South African SMEs. Out of the 10 hypotheses tested, only 3 emerged as significant: 2 elements of GHC (EWA and ESW) and 1 element of entrepreneurial HC (TTS) though TTS was negative. These are highlighted in Table 3 for ease of reference.

TABLE 3: Summary of key findings.

Type	Dependent variable: Job creation	Coefficient	Supported	Significant
General human capital				
General formal education				
GFE	H1: General formal education positively influences SME job creation	0.13	Yes	No
General work experience				
EMP	H2a: Experience in a management position positively influences SME job creation	0.09	Yes	No
ESW	H2b: Experience in similar work positively influences SME job creation	0.24	Yes	Yes
EWA	H2c: Experience with some work applied positively influences SME job creation	0.39	Yes	Yes
EUW	H2d: Experience unrelated to current work positively influences SME job creation	-0.35	No	No
Specific – Entrepreneurial human capital				
Entrepreneurship education				
EE	H3a: Entrepreneurship education positively influences SME job creation	0.07	Yes	No
TBM	H3b: Training in business management positively influences SME job creation	-0.06	No	No
TFM	H3c: Training in finance management positively influences SME job creation	0.25	Yes	No
TTS	H3d: Training in technical skills positively influences SME job creation	-0.46	No	Yes
Entrepreneurial work experience				
EWE	H4: Entrepreneurial work experience positively influences SME job creation	0.17	Yes	No

SME, small and medium enterprises; GFE, general formal education; EMP, experience in a management position; ESW, experience in similar work; EWA, experience with some work applied; EUW, experience unrelated to current work; EE, entrepreneurship education; TBM, training in business management; TFM, training in financial management; TTS, training in technical skills; EWE, entrepreneurial work experience.



GHC, general human capital; EHC, entrepreneurial human capital; WE, work experience.

FIGURE 2: Overview of strength of influence of human capital on job creation.

This study then concludes the following based on the key findings:

Generally, the past experience has to be related or applied to the current business for it to have a significant influence on job creation.

Current business-related training in technical skills (TTS) does not improve the capacity of SMEs to create jobs, as it negatively influences employee growth significantly.

Discussion

The study aimed to examine which elements of HC most influenced SME job creation in South Africa. Job creation in this study refers to an increase in the number of employees within an SME. Human capital was categorised into GHC and SHC (the latter including EHC), and the findings are depicted graphically in Figure 2 for ease of comparison.

The key findings of this study indicate that GHC – general work experience (applied and related to current work) significantly contributes to job creation. This is in agreement with findings by Msimango-Galawe and Mazonde (2024) that found that industry-specific experience enhances business performance.

The findings of this study strongly support the work of Oforegbunam and Okorafor (2010) and, more recently, Olanrewaju (2024), Jamaludin and Seman (2024), Ramatni (2024) and Oguiuba et al. (2025). Collectively, these studies highlight that formal education and on-the-job training are vital HC elements that significantly enhance the performance of SMEs and, consequently, promote job creation. The only difference from this study's findings is that GFE, though having an influence, was statistically insignificant. Furthermore, these studies collectively confirm that formal education plays a critical role in driving SME success. While some researchers, such as Ganotakis (2012), argue against

the benefits of formal education for SME performance. This study argues that the ability to learn and adapt is contingent upon a solid educational foundation, which underlies other aspects of HC. In addition, practical work experience equips individuals with the essential skills needed to recognise and seize opportunities, further boosting the potential for SME growth and innovation.

Mamabolo et al. (2017) found that formal education is more common during the nascent and new business stages than in the established ones. This observation aligns with Dimov's (2010) finding that formal education significantly influences venture creation and the emergence of nascent entrepreneurs. Therefore, it is crucial to make concerted efforts to equip South Africans with formal education, as it serves as a foundational element of HC. More importantly, for work experience to effectively translate into job creation, it must be similar to or directly applied to the current business.

While EE has a positive influence on job creation, the study's results indicate a relatively weak relationship with job creation compared to other HC elements, mainly GFE. There is also no significant evidence that entrepreneurial experience impacts the ability of SMEs to create jobs, whereas there is evidence regarding general work experience. These findings support the idea that GFE and relevant work experience are essential for job creation. Relevant in this study refers to work experience that is applied in the current business and is similar to the current work. This aligns with study conducted by Amros and Bosma (2014), which identified the lack of formal education and experience as critical barriers to SME success.

The findings of this study indicate that GHC (past work experience applied and similar work to the current business) is the most significant factor influencing job creation. This suggests that the current profile of unemployed individuals may not contribute positively to SMEs' ability to generate jobs. This aligns with the arguments made by

Herrington, Kew and Mwanga (2017), who emphasised that formal education should be a primary focus for governments aiming to promote SME success and job creation. Consequently, the study recommends that policymakers allocate more resources to funding GFE, as this foundation is essential for developing other aspects of HC, which are not specific to a particular firm but can be transferable to different entrepreneurial contexts.

It is possible that the impact of HC on job creation may diminish as businesses grow, with other forms of capital, such as social capital, playing a more significant role in later stages. In addition, it is suggested that various forms of HC should be examined at different stages of entrepreneurship. This approach may help to explain why entrepreneurship-specific HC does not consistently lead to positive outcomes in job creation within SMEs.

Therefore, it is recommended that future research focus on each element, specifically at each stage of the entrepreneurship journey. Moreover, it would be beneficial to control for demographics such as age, gender, province and/or race, as these factors may influence the outcomes of this study. Future studies can also investigate the issue of technical training skills negatively influencing job creation in more detail, replicating the findings with different industries, as this might vary depending on the level of technical expertise of the SME under investigation.

Conclusion and recommendations

The finding that is interesting and relevant is that general HC is the most significant factor influencing job creation. This suggests that the current profile of unemployed individuals may not contribute positively to the ability of SMEs to generate jobs.

Consequently, the study recommends that policymakers allocate more resources to funding GFE, as this foundation is essential for developing other aspects of HC. Rather than funding SMEs whose owners lack the essential HC to operate those businesses successfully, the focus should shift towards enhancing formal education. Improving education will boost employability and provide individuals with the necessary experience and self-efficacy to establish and maintain their own successful businesses. Adopting this approach can develop a new criterion for business funding, optimising the government's limited financial resources to support businesses. This strategy will increase the probability of SME success. The study concludes that GHC is a prerequisite for job creation; without this foundation, other elements of EHC cannot achieve it. Entrepreneurship is a process that requires certain foundational components. While SHC can enhance this process, it is not necessarily a prerequisite for the existence of SMEs. This study advocates for including EE at the basic education level to improve self-efficacy. However, the study also supports the notion that entrepreneurship experience does not necessarily influence persistence during the nascent phase beyond the start-up stage.

Strengths and limitations

A key strength of this study lies in its integration of Human Capital Theory with empirical evidence drawn from a sizeable and diverse SME sample spanning all nine South African provinces. The analytical approach, using ordered logistic regression, enables a nuanced examination of how different education and experience variables relate to job creation, thereby providing a meaningful contribution to understanding human capital dynamics in the South African SME context. However, the study is not without limitations. The cross-sectional design restricts causal inference, and the reliance on self-reported data may introduce response bias. In addition, the study focuses on selected human capital elements, excluding other determinants of job creation such as contextual, structural or resource-based factors. These limitations should be borne in mind when interpreting the findings. Future research could adopt longitudinal designs and incorporate a broader set of variables to extend insight into the drivers of job creation within SMEs.

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Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

D.M. conceptualised the study and J.M.-G. supervised it. Both authors contributed to the conversion of the thesis

to the manuscript, and J.M.-G. was responsible for the administration and finalisation of the manuscript.

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Data availability

The data supporting the findings of this study are available upon request from the corresponding author, J.M.-G. The data are not publicly available because of their containing information that could compromise the privacy of research participants.

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References

- Abas, M.F., Pardiman, P. & Supriyanto, S., 2024, 'Unlocking human potential: A literature review on HR challenges and innovations in SME entrepreneurship', *Jurnal Manajemen Bisnis* 11(2), 785–799. <https://doi.org/10.33096/jmb.v11i2.837>
- Ahmed, S.K., 2024, 'How to choose a sampling technique and determine sample size for research: A simplified guide for researchers', *Oral Oncology Reports* 12, 100662. <https://doi.org/10.1016/j.oor.2024.100662>
- 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. <https://doi.org/10.1080/09537325.2012.674672>
- AlQershi, N., Mokhtar, S.S.M. & Abas, Z., 2021, 'The relationship between strategic innovations, human capital and performance: An empirical investigation', *Sustainable Futures* 3, 100056. <https://doi.org/10.1016/j.sftr.2021.100056>
- Amros, J.E. & Bosma, N., 2014, *GEM 2013 Global entrepreneurship report*, 2014 edn., Global Entrepreneurship Research Association, Wesley, MA.
- 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. <https://doi.org/10.1007/s11187-013-9502-z>
- Barroga, E., Matanguihan, G.J., Furuta, A., Arima, M., Tsuchiya, S., Kawahara, C. et al., 2023, 'Conducting and writing quantitative and qualitative research', *Journal of Korean Medical Science* 38(37), e291. <https://doi.org/10.3346/jkms.2023.38.e291>
- Becker, G.S., 1962, 'Investment in human capital: A theoretical analysis', *Journal of Political Economy* 70(5, Part 2), 9–49. <https://doi.org/10.1086/258724>
- Becker, G.S., 1964, *Human capital*, Columbia University Press, New York, NY.
- Becker, G.S., 1993, 'Nobel lecture: The economic way of looking at behavior', *Journal of Political Economy* 101(3), 385–409. <https://doi.org/10.1086/261880>
- Becker, G.S., 1994, 'Human capital revisited', in G.S. Becker (ed.), *Human capital: A theoretical and empirical analysis with special reference to education*, 3rd edn., pp. 15–28, University of Chicago Press, Chicago.
- 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. <https://doi.org/10.1023/B:SBEJ.0000032032.21192.72>
- Chiganze, T. & Sağsan, M., 2022, 'Relationship between human capital, innovation capability and employee job performance in academic libraries in Namibia, South Africa, and Zimbabwe', *Libri* 72(3), 317–334. <https://doi.org/10.1515/libri-2021-0037>
- Creswell, J.W. & Creswell, J.D., 2017, *Research design: Qualitative, quantitative, and mixed methods approaches*, Sage Publications, Los Angeles, California, USA.
- Dhobha, H. & Madondo, E., 2024, 'The role of human capital investment in economic growth: A study of South Africa', *International Journal of Business Ecosystem & Strategy* 6(5), 138–145. <https://doi.org/10.36096/ijbes.v6i5.662>
- Dimov, D., 2010, 'Nascent entrepreneurs and venture emergence: Opportunity confidence, human capital, and early planning', *Journal of Management Studies* 47(6), 1123–1153. <https://doi.org/10.1111/j.1467-6486.2009.00874.x>
- 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.
- Estrin, S., Mickiewicz, T. & Stephan, U., 2016, 'Human capital in social and commercial entrepreneurship', *Journal of Business Venturing* 31(4), 449–467. <https://doi.org/10.1016/j.jbusvent.2016.05.003>
- Fatoki, O. & Olawale, F., 2011, 'The impact of human, social and financial capital on the performance of small and medium-sized enterprises (SMEs) in South Africa', *Journal of Social Sciences* 29(3), 193–204. <https://doi.org/10.1080/09718923.2011.11892970>
- 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. <https://doi.org/10.1108/13552551211201376>
- Galawe, N.J., 2017, 'Endogenous and exogenous risk factors in the success of South African small medium enterprises', PhD thesis, Faculty of Commerce, Law and Management, University of the Witwatersrand, Johannesburg.
- Ganotakis, P., 2012, 'Founders' human capital and the performance of UK new technology-based firms', *Small Business Economics* 39(2), 495–515. <https://doi.org/10.1007/s11187-010-9309-0>
- GEM, 2024, *Global Entrepreneurship Monitor 2023/24 women's entrepreneurship report*, London Business School, Regents Park, London.
- GEM, 2025, *Global Entrepreneurship Monitor 2024/2025 global report: Entrepreneurship reality check*, viewed July 10 2025, from <https://gemconsortium.org/report/gem-20242025-global-report-entrepreneurship-reality-check-4>.
- Gimeno, J., Folta, T.B., Cooper, A.C. & Woo, C.Y., 1997, 'Survival of the fittest? Entrepreneurial human capital and the persistence of underperforming firms', *Administrative Science Quarterly* 42(4), 750–783. <https://doi.org/10.2307/2393656>
- Herrington, M., Kew, P. & Mwanga, A., 2017, *GEM South Africa report*, viewed July 11 2025, from <http://www.gemconsortium.org/wiki/665>.
- Hirata, K., Suzuki, A. & Takii, K., 2019, 'How general is managerial human capital?: Evidence from the retention of managers after M&As', *IZA Journal of Labor Economics* 12(1), 1–40. <https://doi.org/10.2478/izajole-2023-0008>
- 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. <https://doi.org/10.54784/1990-6587.1336>
- Jamaludin, A. & Seman, S.A., 2024, 'Graduate versus non-graduate entrepreneurs in urban Malaysia: Involvement in SMEs and micro SMEs', *International Journal of Socio-Economy Planning* 1(1), 1–11.
- Jannah, M., Susyanti, J. & Farida, E., 2024, 'Navigating the entrepreneurial landscape: A qualitative exploration of SME success factors', *Jurnal Manajemen Bisnis* 11(2), 746–769. <https://doi.org/10.33096/jmb.v11i2.836>
- Khan, S.Z., Jehangir, M., Hayat, T. & Khan, B., 2022, 'Pathways toward job creation: Empirical evidence on the role of digital entrepreneurship and social capital', *Sukkur IBA Journal of Management and Business* 9(1), 106–132. <https://doi.org/10.30537/sijmb.v9i1.873>
- Kwon, D.B., 2009, 'Human capital and its measurement', in *The 3rd OECD World Forum on 'Statistics, Knowledge and Policy' Charting Progress, Building Visions, Improving Life*, October, pp. 27–30, OECD Publishing, Busan.
- Lanza, A. & Simone, G., 2025, 'Competitive advantage through general and mobile human capital. A study on Italian "Serie A" football', *European Management Review* 22(1), 187–201. <https://doi.org/10.1111/emre.12633>
- 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), 1–12.
- Maksimović, J. & Evtimov, J., 2023, 'Positivism and post-positivism as the basis of quantitative research in pedagogy', *Research in Pedagogy* 13(1), 208–218. <https://doi.org/10.5937/istrped2301208m>
- 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. <https://doi.org/10.4102/sajesbm.v9i1.111>
- Man, W.Y.T., 2001, *Entrepreneurial competencies and the performance of small and medium enterprises in the Hong Kong services sector*, Hong Kong Polytechnic University, Hong Kong.
- Msimango-Galawe, J. & Hlatshwayo, E.N., 2021, 'South African business incubators and reducing the SME failure rate – A literature review', *Problems and Perspectives in Management* 19(2), 194–205. [https://doi.org/10.21511/ppm.19\(2\).2021.16](https://doi.org/10.21511/ppm.19(2).2021.16)
- Msimango-Galawe, J. & Mazonde, N., 2024, 'The mediating effect of entrepreneurial self-efficacy on business experience and performance of women-owned enterprises', *Problems and Perspectives in Management* 22(2), 213–225. [https://doi.org/10.21511/ppm.22\(2\).2024.17](https://doi.org/10.21511/ppm.22(2).2024.17)
- 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.
- Ngepah, N., Saba, C.S. & Mabindisa, N.G., 2021, 'Human capital and economic growth in South Africa: A cross-municipality panel data analysis', *South African Journal of Economic and Management Sciences* 24(1), 1–11. <https://doi.org/10.4102/sajems.v24i1.3577>
- 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 of Sustainable Development in Africa* 12(8), 49–58.

- Ogujiuba, K., Eggink, M., Ogujiuba, C. & Boshoff, E., 2025, 'Effect of contextual factors on the entrepreneurial ecosystem in South Africa', *World* 6(3), 91. <https://doi.org/10.3390/world6030091>
- Olanrewaju, M., 2024, 'The impact of entrepreneurship education on improving small and medium-size enterprises (SMEs) performance in Kwara and Oyo States, Nigeria', Master's Thesis Jyväskylä ammattikorkeakoulu University of Applied Science.
- Otto, W.H., 2025, 'Implications to mitigate business failure: Aligning the impact of the South African business environment on SMEs' trade credit management with trade credit theories', *Southern African Journal of Entrepreneurship and Small Business Management* 17(1), 1–13. <https://doi.org/10.4102/sajesbm.v17i1.971>
- Rahimi, F., Seifollahi, N., Kargar, S.B. & Bagher, S.S., 2024, 'Educational leadership and performance: A structural approach', *Journal of Applied Educational Leadership* 5(2), 112–130.
- Ramatni, A., 2024, 'Implications of education for entrepreneurial abilities: Formal versus non-formal education', *International Journal of Education, Social Studies, and Management (IJESSM)* 4(1), 154–168. <https://doi.org/10.52121/ijessm.v4i1.218>
- Rens, V., Iwu, C.G., Tengeh, R.K., & Esambe, E.E., 2021, 'SME, economic growth and business incubation conundrum in South Africa. A Literature appraisal', *Journal of Management and Research* 8(2), 214–251.
- Retail Capital, 2024, *Navigating monthly trends for small businesses*, Retail Capital, viewed July 10 2025, from <https://www.retailcapital.co.za/sme-forecast/>.
- 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. <https://doi.org/10.1007/s11187-007-9093-7>
- Schultz, T.W., 1961, 'Investment in human capital', *The American Economic Review* 51(1), 1–17.
- SEDA, 2022, *Annual report*, viewed July 10 2025, from https://static.pmg.org.za/Seda_AR_2022-23_final_signed_off_document.pdf.
- SEDA, 2024, *Annual report*, viewed July 10 2025, from https://static.pmg.org.za/Seda_APP_2024-25_for_Tabling.pdf.
- Setia, M.S., 2016, 'Methodology series module 3: Cross-sectional studies', *Indian Journal of Dermatology* 61(3), 261. <https://doi.org/10.4103/0019-5154.182410>
- 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. <https://doi.org/10.1093/icc/12.3.519>
- Shoprite, 2025, *SMME report*, Shoprite Holdings, viewed July 10 2025, from <https://www.shopriteholdings.co.za/docs/shp-smme-report-2025.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 centres', *Small Business Economics* 38(3), 333–349. <https://doi.org/10.1007/s11187-010-9278-3>
- Statista, 2025, *Socio economic indicators – South Africa: Market forecast*, viewed July 11 2025, from <https://www.statista.com/outlook/co/socioeconomic-indicators/south-africa>.
- StatsSA, 2024, *Mid-year population estimates, 2024*, viewed July 11 2025, from <https://www.statssa.gov.za/publications/P0302/P03022024.pdf>.
- Tanjaya, B., Prahmana, R.C.I. & Mumu, J., 2022, 'Likert scale in social sciences research: Problems and difficulties', *FWU Journal of Social Sciences* 16(4), 89–101. <https://doi.org/10.51709/19951272/winter2022/7>
- 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. <https://doi.org/10.1007/s11187-006-9020-3>
- 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. <https://doi.org/10.1111/j.1467-6419.2008.00550.x>
- World Bank, 2021, *The World Bank's strategy in South Africa reflects the country's development priorities and its unique leadership position at sub-regional and continental levels*, viewed July 11 2025, from <https://www.worldbank.org/en/country/southafrica/overview#1>.
- Ziberi, B.F., Rexha, D., Ibraimi, X. & Avdiaj, B., 2022, 'Empirical analysis of the impact of education on economic growth', *Economies* 10(4), 89. <https://doi.org/10.3390/economies10040089>