
**GROWTH EFFECTS OF HUMAN CAPITAL AND INNOVATION IN SMALL AND
MEDIUM-SIZED SOUTH AFRICAN FIRMS BEFORE AND AFTER THE COVID-19
PANDEMIC**

by

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ABSTRACT

This thesis examines the growth of small and medium-sized enterprises (SMEs) in South Africa before and after the COVID-19 pandemic. The COVID-19 pandemic introduced new challenges, which makes this research relevant for contemporary issues in firm growth. The problem addressed in this study was the need to understand how various factors, such as human capital, innovation, entrepreneurial orientation and motivation, affect SME growth. Previous research has focused mainly on organisational-level determinants without considering how these factors interact in a post-COVID-19 context. This gap is particularly relevant in South Africa, where SMEs face high failure rates despite efforts to support entrepreneurship. The study filled this gap by exploring the specific growth dynamics of SMEs in this contemporary and challenging context. Several key research questions guided the study and aimed to achieve two main objectives. The study used a two-phase methodology. First (Phase 1), it systematically reviewed the literature to synthesise knowledge on human capital, innovation, and firm growth before the COVID-19 pandemic. The systematic literature review analysed 206 articles published between 2000 and 2020 using descriptive statistics, bibliometric analysis, and content analysis to synthesise pre-pandemic research. Secondly (Phase 2), it developed and tested a theoretical model to understand the relationship between human capital, innovation, entrepreneurial orientation, motivation and SME growth in South Africa post-pandemic. In this phase, primary data was collected using a structured questionnaire with 497 responses from small firm owner-managers and analysed using Smart PLS (version 3.2.9). This research adopted a positivist philosophy, focussing on empirical patterns and causal relationships. Key findings indicated that innovation mediates the relationships between entrepreneurial orientation, human capital, and the growth of SMEs. Human capital has a direct impact on firm growth in the post-pandemic context. At the same time, motivation significantly mediated the link between entrepreneurial orientation and growth, though its effect on the human capital-growth relationship was less pronounced. This study advances knowledge by providing a detailed analysis of SME growth determinants in a post-pandemic context, offering a customised theoretical model for South African SMEs. This study also has practical implications, providing insight for SMEs and policymakers to enhance innovation capabilities and adapt strategies to post-pandemic challenges. Future research could explore the long-term

impacts of COVID-19 on firm growth, the role of additional contextual variables, and comparative studies in different regions or sectors.

Keywords: *human capital, innovation, entrepreneurial orientation, motivation, small firm growth*

DECLARATION

I, the undersigned **FRANCISCA NYASHA MAINGEHAMA**, hereby declare that this research is my own, unaided work. It was submitted to fulfill the requirements for the degree of Doctor of Philosophy at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

I further declare that:

- I am aware that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong.
- I have followed the required conventions to reference the thoughts and ideas of others.

SIGNED AT **Roodeport** ON THIS THE **7th** **day of November 2024**.



FRANCISCA NYASHA MAINGEHAMA

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God is not against me, but He is in it with me, working through and fighting for me. ~

Pastor Steven Furtick

LIST OF ABBREVIATIONS AND ACRONYMS

SARS-CoV-2	A severe respiratory syndrome coronavirus 2
COVID-19	Corona Virus Disease 2019
WHO	World Health Organization
SMEs	Small and medium-sized enterprises
RBV	Resource-based view
EO	Entrepreneurial orientation
SLR	Systematic Literature Review
SEDA	Small Enterprise Development Agency
QLFS	Quarterly Labour Force Survey
GEM	Global Entrepreneurship Monitor
SEM	Structural equation modelling
PLS-SEM	Partial Least Squares Structural Equation Modelling
CR	Composite reliability
AVE	Average Variance extracted
HTMT	Heterotrait-Monotrait Ratio
VIF	Variance Inflation Factor

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CHAPTER 1: INTRODUCTION

1.1. INTRODUCTION

Chapter 1 provides a background to the study, the research problem, its significance, and the conceptual model. Thereafter, the research questions and hypotheses are outlined. Lastly, the study's chapter sequence is provided.

1.2. BACKGROUND TO THE STUDY

The world was disrupted by SARS-CoV-2 (a severe respiratory syndrome coronavirus 2), recognised as COVID-19 by the World Health Organization. Coronavirus (2020). The COVID-19 outbreak has been recognised as the predominant pandemic of the 21st century, primarily due to the significant number of deaths it has caused (Callaway, Cyranoski, Mallapaty, Stoye, & Tollefson, 2020). The onset of the COVID-19 pandemic occurred in late December 2019, originating from Wuhan, a city in China. During January and February 2020, the number of cases in China peaked, with daily counts reaching the thousands. Eventually, the rapid increase in cases led to the declaration of a global pandemic (Callaway *et al.*, 2020) and thus affected business operations, especially for small and medium-sized enterprises (SMEs).

Entrepreneurs are the main force of innovation and development in firms, ecosystems and markets (Schumpeter, 1942; Cooper & Vlaskovits, 2013; Leavy, 2016; Biber *et al.*, 2017; Van Balen *et al.*, 2019; Shepherd, 2020). Schumpeter (1942) characterised entrepreneurs as responsible for innovating, creating, and combining new things. Once disruption is achieved, it can shift market demand and create new industry leaders from existing business models, products or services to new ones, benefitting society by constantly improving the production and supply of goods and services (Van Balen *et al.*, 2019). However, firms, ecosystems, and markets were disrupted by COVID-19 (Bacq & Lumpkin, 2020; Maritz *et al.*, 2020).

SMEs in South Africa have long grappled with challenges impacting their survival and growth and have faced numerous challenges before and during the COVID-19 pandemic. These included limited access to capital, inadequate resources, and the lack of specialised equipment, which hindered growth and competitiveness (Mtambo *et al.*, 2023). Before the COVID-19 pandemic, SMEs faced high failure rates of 70-80% (Cant & Wiid, 2013), which has become a cause of concern among several SME entrepreneurs. Several factors, including inflation, volatile interest rates, crime, unemployment, and low demand for products, were key in driving

the high failure rate. Additionally, many SMEs needed better pricing strategies and favourable business locations, intensifying their difficulties (Cant & Wiid, 2013). The COVID-19 pandemic negatively affected the operations of many of the country's SMEs (Rajagopaul *et al.*, 2020; Kalidaa *et al.*, 2020; Stats SA, 2020; Anakpo & Mishi, 2021; Madinga *et al.*, 2022; Mkhonza & Sifolo, 2022; Rwafa-Ponela *et al.*, 2022). The pandemic posed significant challenges for entrepreneurs, hindering their ability to devise effective plans (Ratten, 2020). The challenges were mainly related to organisational factors, such as financial difficulties, liquidity issues, and decreased buying power; operational challenges, like a shortage of skilled workers and restricted access to raw materials; technological hurdles, including problems with digital transformation and forecasting abilities; and strategic constraints, such as limited resources and interruptions in supply chains (Sharma *et al.*, 2024). Firms have had to make decisions that affect employees, revenue, and productivity (Bartik *et al.*, 2020; Cooper *et al.*, 2024).

The pandemic increased the pre-existing challenges, leading to severe disruptions in business operations. Lockdown restrictions and a significant decrease in customer traffic caused numerous SMEs to shut down or scale back operations (Fubah & Moos, 2022). The loss of government support and the lack of raw materials further worsened the situation (Fubah & Moos, 2022). SMEs were already struggling with inadequate digital infrastructure and low levels of digital literacy while they attempted to transition to online business models. Financial constraints made digital investments particularly challenging (Gqoboka *et al.*, 2022).

In addition to these issues, SMEs experienced considerable financial strain during the pandemic. Many faced cash flow problems and had limited access to emergency funding (Chukwuneme *et al.*, 2023). Government assistance programs to support SMEs encountered implementation issues, such as communication barriers and stringent registration requirements, which could have improved their effectiveness (Chukwuneme *et al.*, 2023). The pandemic underscored the critical need for financial aid and skills development to support SMEs' resilience and recovery (Chiloane-Phetla & Mathipa, 2021). Marketing challenges became prominent as SMEs needed assistance to adapt to e-commerce (Ramsern & Govender, 2023). Post-pandemic, the financial resilience of SMEs has been closely tied to their ability to access loans, manage interest rates, and navigate repayment plans effectively (Msomi & Zungu, 2023). SMEs in various sectors, including automotive and tourism, faced additional hurdles, including environmental challenges, competition, digital transformation, and growth (Eze & Lose, 2023; Mgoduka *et al.*, 2024; Peterson & Chinyamurindi, 2024).

Manufacturing SMEs face unique difficulties, such as inadequate business continuity strategies and vulnerability to external shocks (Zake *et al.*, 2024). The transition to smart manufacturing has presented challenges and potential benefits, particularly in technology adoption and workforce development (Krishnan, 2024). Rural entrepreneurs have experienced distinct obstacles, including limited infrastructure and resources, that have hindered local economic development (Utete & Zhou, 2024). Recommendations to address these complex challenges include improving access to financing, providing tailored loan repayment options, and fostering public-private partnerships (Msomi & Zungu, 2023; Eze & Lose, 2023). Enhancing digital literacy, streamlining business registration processes, and supporting innovation are crucial for helping SMEs navigate ongoing and future adversities (Angeles, 2024; Peterson & Chinyamurindi, 2024).

However, there are considerable opportunities for South African SMEs to enhance their competitiveness and growth. The manufacturing sector, identified as a key economic driver in South Africa, has been supported through various incentive programs to improve competitiveness and industrial development (Lehohla & Kholopane, 2020). The agility and adaptability of SMEs enable them to capitalise on emerging market opportunities and respond to changes effectively. Furthermore, addressing human capital deficiencies through investments in education, training, and skill development can significantly boost firm performance and growth potential (Kmecová & Androniceanu, 2024; Gruber *et al.*, 2024). The South African National Development Plan (NDP) 2030 highlights the importance of human capital investment in overcoming economic inequalities and fostering entrepreneurial activities (National Planning Commission, 2011).

The prevailing uncertainty surrounding the entrepreneurial landscape has led to difficulties and uncertainties that entrepreneurs must navigate, and overcoming these necessitates the presence of individuals with resilience and adaptability (Schumpeter, 1942). Entrepreneurs' specific characteristics enabled them to respond to the pandemic (He & Harris, 2020; Maritz *et al.*, 2020; Shepherd, 2020). To handle the effects of COVID-19, Ratten (2020) and Zahra (2021) highlight that some characteristics entrepreneurs require to manage the crisis include agility, innovation, resilience and risk-taking. Key characteristics for managing such challenges include resilience, innovation, adaptability, and technological knowledge (Castro-González *et al.*, 2024). Regional factors influencing entrepreneurial resilience during crises encompass population density, education levels, sectoral diversity, and government incentives (Demirdag, 2024). Angeles (2024) pointed out that research on micro, small, and medium-sized enterprises

(MSMEs) indicated how owners leverage resilience, self-efficacy, and innovativeness to navigate crises, often resulting in increased technology use and expanded networks.

Several studies have investigated the relationship between COVID-19 and entrepreneurship (Ratten 2020; Shepherd, 2020; Belitski *et al.*, 2022; Faeni *et al.*, 2022; Fairlie & Fossen, 2022; Ghobadian *et al.*, 2022; Rahman *et al.*, 2022; Pedauga *et al.*, 2022, Abuhussein *et al.*, 2023; Hean & Chairassamee, 2023; Sharma *et al.*, 2024; Demirdag (2024). However, firms will grow slowly for several years post the pandemic (He & Harris, 2020; Maritz, Perenyi *et al.*, 2020; Shepherd, 2020; World Health Organisation, 2020). COVID-19 has amplified the need for entrepreneurship and firm growth (Bacq & Lumpkin, 2020). As a result, it is important to investigate the factors that influence SME growth to date (Masakure *et al.*, 2009; Wiklund *et al.*, 2009; Goedhuys & Sleuwaegen, 2010; Coad & Holzl, 2012; Hamilton, 2012).

Firm growth is an essential outcome of entrepreneurship (Davidsson & Delmar, 1997; Dobbs & Hamilton, 2007; Gupta *et al.*, 2013; Haltiwanger *et al.*, 2016; Maritz *et al.*, 2020). Requiring resilience, perseverance, and commitment from an entrepreneur. Policymakers, practitioners, and researchers have investigated the significance of firm growth (Achtenhagen *et al.*, 2010; Calvino *et al.*, 2016; Dobbs & Hamilton, 2007; Shepherd & Wiklund, 2009). The factors that contribute to firm growth are clustered into four core categories: business and management practices (Dobbs & Hamilton, 2007), characteristics of the firm (Smallbone & Wyer, 2000), characteristics of an entrepreneur (Davidsson, 1991), and institutional factors (Wiklund & Shepherd, 2003). Hence, complex factors influence firm growth (Eshima & Anderson, 2017).

The studies on firm growth continue to have numerous challenges that must be addressed to enhance understanding of this phenomenon. Previous studies that were conducted on firm growth focussed on the determinants on an organisational level (Efendic *et al.*, 2015; Hashi & Krasniqi, 2011; Lechner & Gudmundsson, 2014; Naldi & Davidsson, 2014; Wiklund *et al.*, 2009). Moreover, Storey (1994) identified multiple factors influencing firm growth, categorising them into three growth determinants: founder-specific factors, owner/manager-specific factors, and factors associated with the firm's strategy. First, the entrepreneur's resources include age, education, family history, functional skills, gender, motivation, number of founders, social marginality, management experience, prior business failure, sector experience, self-employment, firm size experience, training, and unemployment. Second, factors related to the firm encompass age, sector, legal form, location, size, and ownership. Third, strategic considerations involve competition, customer concentration, management

recruitment, technological sophistication, planning, external equity, workforce training, information and advice, new products, management training, government support, market positioning, exporting, and market adjustments. De Wit and Zhou (2009) emphasise the necessity for additional research to comprehend the contributing factors to firm growth. Janssen (2009) identified that firm growth determinants can vary depending on the specific types of growth being considered. Additionally, Wiklund *et al.* (2009) highlighted that many studies have focused on a limited set of factors that attempt to explain firm growth. Thus warranting further research to be conducted in this context.

In addition, some studies have been conducted on the effect of human capital on firm growth (Duchesneau & Gartner, 1990; Chandler & Hanks, 1998; Rauch *et al.*, 2009; Unger *et al.*, 2011; Eesley & Roberts, 2012; Marvel *et al.*, 2016). While human capital influences firm growth, contingency relationships may exist between firm growth and human capital, which are yet to be investigated (Unger *et al.*, 2011; Marvel *et al.*, 2016; El Shoubaki *et al.*, 2020). There has also been a growing focus on exploring the effect of innovation on firm growth (Geroski *et al.*, 1997; Crépon *et al.*, 1998; Bottazzi *et al.*, 2001; Geroski & Mazzucato, 2002; Coad, 2009; Coad & Rao, 2010a, 2010b, 2011; Audretsch *et al.*, 2014; Santi & Santoreli, 2017). In South Africa, the rate at which SMEs fail has created a need to find growth strategies. One such strategy is entrepreneurial orientation (EO) (Covin & Wales, 2019). Lumpkin and Dess (1996, p. 136) define “entrepreneurial orientation as a set of processes and practices that facilitate new entry into the market.” Literature suggests that EO influences firm growth (Covin & Slevin, 1989; Hansen & Wernerfelt, 1989; Lumpkin & Dess, 1996; Knight, 1997; Krauss *et al.*, 2005; Ferreira & Azevedo, 2008; Rauch *et al.*, 2009; Bhardwarj *et al.*, 2011; Kraus *et al.*, 2012; Setiawan *et al.*, 2012; Pratono *et al.*, 2013).

Despite efforts to understand the factors that drive firm growth, the factors often need to be more precise and consistent (Grillitsch, Schubert & Srholec, 2019). As a result, the pursuit of growth in SMEs presents a paradox. The growth paradox arises when measuring firm growth in SMEs (Edwards, 2021). This paradox highlights that SMEs possess the capacity for growth but frequently encounter challenges in attaining sustainable and significant expansion (Edwards, 2021). Therefore, this study seeks to overcome the challenges of understanding firm growth by developing and testing an empirical theoretical model that can serve as a tool to help SME decision-makers, policymakers, researchers, and entrepreneurs in South Africa. This study makes two main contributions to the literature on firm growth.

Firstly, Phase 1 of this study applied a systematic literature review. This allowed for the gathering and condensing of numerous research studies on firm growth (Gough, Oliver & Thomas 2017). Very few studies have used a systematic literature review to understand the factors influencing firm growth. However, such studies are necessary to determine how firms grow (Coad & Holzl, 2012). The systematic literature review provided insight into human capital, innovation, and firm growth pre-COVID-19, allowing for a comparison of South Africa's post-COVID-19 outbreak and further enabling the implementation of Phase 2.

Secondly, the study's Phase 2 included the development and testing of the proposed theoretical model that predicted SME growth in South Africa post-COVID-19 (in the aftermath of the COVID-19 outbreak). Therefore, this model tested relationships between human capital, innovation, entrepreneurial orientation, motivation, and firm growth at the owner-manager level. In South Africa, policymakers have put several efforts in place to grow entrepreneurship, but the failure rate of SMEs is high. Fatoki (2014), Neneh and Van Zyl (2014) as well as Neneh and Van Zyl (2017) highlight that South African SMEs struggle to grow. In a post-COVID world, to grow, SMEs will require entrepreneurs to be agile and innovative (SEDA, 2021). Applying a context-specific approach contributes to the literature by first, providing a model that predicts the growth of owner-managed firms in South Africa and second, investigating firm growth in the immediate aftermath of COVID-19 to understand the vulnerabilities of firms to these types of disasters- and prepare them for subsequent possible disasters.

The next section stipulates the research problem identified in this study.

1.3. RESEARCH PROBLEM

A research problem refers to a specific issue or topic that requires a study to be conducted and solution to be accomplished through research (Hair, Wolfinbarger, Money, Samouel & Page, 2011). The research problem represents a gap in knowledge or an area where further understanding, explanation, description, or prediction is needed (Boudah, 2011). The global impact of COVID-19 has led to significant disruption, particularly affecting SMEs (Bartik, Bertrand, Cullen, Glaeser, Luca & Stanton, 2020). Though the COVID-19 pandemic has now ended, it left a huge mark on global economies and influenced SMEs in various socio-economic ways, making them quite fragile and prone to severe consequences from the pandemic (Tinh, Tien & Diem, 2023). This underscores the need to research how SMEs can grow in an already fragmented world following the COVID-19 outbreak.

Firm growth has been widely researched (Delmar, 1997; Wiklund, 1998; Wong, Ho & Autio, 2005; Davidsson, Delmar & Wiklund, 2006; Coad, 2009; Stam & Wennberg, 2009; Henrekson & Johansson, 2010; Coad & Holzl, 2012; Levie & Autio, 2013; Hermans, Vanderstraeten, van Witteloostuijn, Dejardin, Ramdani & Stam, 2015; Coad, Daunfeldt, & Halvarsson, 2018; Grazzi & Moschella, 2018; Grillitsch, Schubert, & Srholec, 2019; Tunberg & Anderson, 2020; Hart, Prashar, & Ri, 2021; Yadav, Pahi & Gangakhedkar, 2022; Maury, 2022; Rafiki, Nasution, Rossanty & Sari, 2023; Babina, Fedyk, He & Hodson, 2024). It is an important measure of a nation's economic performance, reflecting its influence on overall economic success (Erkan, 2023). Although macroeconomic factors are acknowledged as the basis of economic growth, the performance of individual firms as microeconomic units within the nation calls for a thorough examination despite being researched by several disciplines (Erkan, 2023). Economists have studied how and why firms develop within social networks and the factors that allow them to maintain their vitality (Wagner, 1992; Geroski, 1999; Carrizosa, 2007; Coad, 2007; Coad, 2009; Coad, 2010; Stam, 2010). At the same time, strategic management researchers have approached the concept of growth from several points of view, enhancing the understanding of this phenomenon (Castrogiovanni & Justis, 2002; Gilbert, McDougall & Audretsch, 2006; Brush *et al.*, 2009; Barbero *et al.*, 2011). From a marketing standpoint, some insights have been gathered (Chen *et al.*, 2009) on firm growth. Additionally, an entrepreneurial lens has been employed to examine growth (Zhou & Wit, 2009; Davidsson *et al.*, 2010; Gupta *et al.*, 2013; Zhou *et al.*, 2018), and these studies have obtained diverging views that leave future researchers to conduct empirical research further.

As a result, it has become essential to present a conceptual model that combines human capital, innovation and entrepreneurial orientation, as they have been shown to influence firm growth in previous studies, but those studies considered them independently and not combined (Geroski *et al.*, 1997; Coad & Rao, 2008; Rosenbusch *et al.*, 2011; Mthanti & Ojah, 2017; Khan & Quaddus, 2018; Rezaei & Ortt, 2018; Spescha, 2018; Al-Jinini, Dahiyat & Bontis, 2019; Sun, Li, & Ghosal, 2020; Fiorentino *et al.*, 2021; Arcuri *et al.*, 2023; Altuzarra, 2024). Moreover, the literature predominantly examines factors influencing firm growth in well-developed countries. At the same time, more attention should be given to the context of emerging and developing countries as these have been under researched. There is, therefore, a need to expand on literature to explain SME growth, hence the use of the systematic review to compare international findings with findings in South Africa (Davidsson *et al.*, 2005; Vassolo,

Hermelo & Rodriguez, 2007; Stam, 2010; Zhou *et al.*, 2018) is a novel contribution to literature.

This study aims to investigate the growth effect of SMEs across two phases. First, Phase 1 is a systematic literature review to identify, evaluate, and synthesise literature regarding the relationship between human capital, innovation, and firm growth in SMEs before the COVID-19 pandemic. Second, Phase 2 is an owner-manager level analysis that develops and tests a theoretical model to predict the relationship between human capital, innovation, entrepreneurial orientation, motivation, and firm growth in South African SMEs following the COVID-19 outbreak on 27 March 2020.

The following section provides a discussion of the delimitations identified in this study.

1.4. DELIMITATIONS

Delimitations are the boundaries set by researchers to define the scope and focus of a study, narrowing the investigation to a manageable and relevant scope (AJE, 2022). Delimitations can include geographic scope, the time frame, the population or sample studied, and the specific variables or constructs examined while excluding others (AJE, 2022). These delimitations help researchers concentrate on particular aspects of a study, recognising that broader factors or contexts are outside the scope of their investigation.

The study had three delimitations that impacted its scope and findings. First, it was limited to South African SMEs, which restricted the generalisability of the results to SMEs in other countries or regions with differing economic, social, or regulatory contexts. The research was divided into two phases: Phase 1 reviewed pre-COVID-19 literature, while Phase 2 focused on SMEs post-COVID-19. This division overlooked transitional factors and evolving dynamics affecting SMEs during the pandemic's intermediate phases. Furthermore, the study examined the influence of human capital, innovation, entrepreneurial orientation, and motivation on firm growth, excluding other potentially significant factors such as market dynamics or broader economic conditions. These delimitations helped define the study's focus and constrain its comprehensiveness.

Now that the delimitations have been stipulated, the next section provides the significance of this study.

1.5. SIGNIFICANCE OF THE STUDY

Throughout history, the world has confronted by various economic, environmental, geopolitical, societal and technological risks (World Economic Forum, 2023; Sharma *et al.*, 2024) including that of COVID-19 pandemic (Bui *et al.*, 2021; World Economic Forum, 2023). Due to the knowledge gap on the effects of COVID-19 on entrepreneurship, Ratten (2020) highlights that it is crucial to incorporate entrepreneurship into research on the pandemic. The pandemic posed a significant challenge for entrepreneurs and self-employed individuals, with current studies primarily addressing its short-term effects, necessitating its end to determine the impact on global entrepreneurship development (Dvouletý *et al.*, 2021). The macroeconomic and microeconomic impact of COVID-19 shocks varies between small and large firms. Smaller businesses are often disadvantaged in seizing the opportunities arising from crises (Belitski *et al.*, 2022) due to a lack of capacity and other unforeseen factors.

This study extends Mthanti and Ojah's (2017) study on human capital and firm growth. This study seeks to understand the factors that drive EO at the firm and macro levels. Mthanti and Ojah (2017) discovered that the link between human capital and EO remains consistent across different levels of economic development. However, they then found that the connection between institutions and EO varies across countries. There are few studies on human capital and firm growth in South Africa to date and this warranted the research to delve deeper into the problem identified in this study.

This study extends studies by Audretsch *et al.* (2014), Coad *et al.* (2016), Spescha and Woerter (2019) and Callaghan (2022) on innovation and firm growth. Audretsch *et al.* (2014) formulated a study to enhance innovation's significance in driving firm growth. Despite the abundance of empirical studies examining whether innovative firms experience faster growth in sales and employees, several important questions and their answers still need to be solved. Coad *et al.* (2016) found the connection between firm growth, innovation, and firm age. Their Heckman estimations found that the influence of R&D on firm growth evolves from time to time. Spescha and Woerter (2019) conducted a study to examine the impact of the macroeconomic business cycle on the relationship between innovation and firm growth. Using panel data from Swiss firms, the study revealed that firms that engage in non-R&D innovation activities during economic booms experience higher sales growth rates than non-innovative firms. Callaghan (2022) discusses the challenges organisations face in innovating under

complex conditions, suggesting that addressing these challenges is essential for firm growth and sustainability.

Most studies on EO have focused on the proposed dimensions by Miller (1983), which are risk-taking, innovativeness and proactiveness (Fatoki, 2014; Neneh & Van Zyl, 2017; Dzomonda & Masocha, 2018; Mthanti & Ojah, 2017; Rezaei & Ortt, 2018; Dzomonda & Fatoki, 2019; Okangi, 2019; Basco *et al.*, 2020). As Lumpkin and Dess (1996) proposed, their study applied all five dimensions (innovativeness, autonomy, competitiveness, proactiveness, and risk-taking). The study extended studies by Krauss, Frese, Friedrich and Unger (2005), Callaghan (2009) and Callaghan and Venter (2011), who also applied all five dimensions of EO. In the study of Krauss *et al.* (2005), the relationship between the EO of individual business owners and the performance of small businesses in the Southern African region was examined. Callaghan and Venter (2011) conducted a study exploring the EO of inner-city traders in the City of Johannesburg, South Africa. The study's results indicate that EO is influenced by specific contextual and learning factors, implying that offering entrepreneurial training could potentially empower informal entrepreneurs in this setting. Therefore, studying all five dimensions of EO contributes to the literature by providing a comprehensive understanding of how these dimensions collectively influence entrepreneurial behaviours, firm performance, and strategic decision-making, enhancing knowledge in the field.

Certain studies indicate a strong and positive relationship between owner motivation and firm growth (Ahmad *et al.*, 2014; Elijah-Mensah, 2009). In contrast, Wiklund and Shepherd (2003) argue that the relationship could be more robust. Ali (2018) aimed to understand the motivation of why some female entrepreneurs in Ghana's tourism sector pursue growth goals while others do not. The results indicated that most respondents lacked the motivation to grow and expand their businesses due to limitations in their entrepreneurial abilities, which were unintended consequences. Therefore, this study extends the study by Ncube and Zondo (2018) and Delmar and Wiklund (2008) on motivation. Ncube and Zondo's (2018) study found that business owners' intrinsic motivations impact SMEs' growth in South Africa. Delmar and Wiklund's (2008) study found that motivation for growth exerts a distinct influence on a firm's growth. Yet, it is crucial to recognise the significant feedback loops from growth back to motivation.

Sluggish growth has adversely affected SMEs and micro-enterprises in South Africa's manufacturing sector, with many lacking business continuity strategies. The manufacturing industry has experienced supply chain disruptions, workforce shortages, and decreased

demand, leading to trends such as reshoring, automation, and digitalisation (Palaniappana, 2024). There is also a growing focus on sustainability in the construction sector, with increased interest in clean energy and consumption control post-COVID-19 (Coraglia *et al.*, 2024). However, some have reactively modified offerings, revenue models, and sales procedures while reducing human capabilities (Zake *et al.*, 2024). The COVID-19 pandemic increased these challenges by disrupting supply chains, shifting consumer behaviour, and accelerating the need for digital transformation. SMEs had to pivot quickly, demonstrating the essential role of EO in navigating the crisis. The pandemic revealed how important it is for firms to leverage their EO to adapt and thrive under new conditions. Innovation became a focal point, with SMEs requiring rapid integration of digital tools and remote working solutions to maintain operations (Angeles, 2024).

In response to these and other challenges, existing research recommendations have focused on enhancing digital transformation and building resilient supply chains (Yuan *et al.*, 2024). The role of human capital has been emphasised, with investments in education and skills development being crucial for recovery and growth (Hippe & Fouquet, 2024). More importantly, gaps still exist in a better understanding of sector-specific impacts, the long-term effects of the pandemic, and how SMEs can best leverage human capital and motivation for sustained innovation and growth. Addressing these gaps will provide more tailored insights for supporting South African SMEs in achieving robust growth and adapting to a changing economic landscape. Refer to Appendix A, which details a table of studies conducted on human capital, innovation, entrepreneurial orientation, motivation, and firm growth.

The theoretical framework of this study is briefly discussed in the next section.

1.6. THEORETICAL FRAMEWORK

The study included four theoretical frameworks to guide its investigation. The four are outlined here but are discussed in detail in the next chapter (Chapter 2). Firstly, Penrose's (1959) Theory suggests that internal resources and managerial decisions limit a firm's growth. Secondly, the Resource-Based View Theory (Wernerfelt, 1984; Barney, 1991) argues that a firm's competitive advantage stems from its unique resources and capabilities, including human capital. Third, Lumpkin and Dess's (1996) entrepreneurial orientation framework suggests that firms with a strong EO are more inclined to pursue growth-oriented activities. Lastly, Becker's (1964) Human Capital Theory highlights how investments in individual skills and knowledge enhance firm growth by fostering innovation and adaptability.

The next section explains the conceptual model supporting this study.

1.7. CONCEPTUAL MODEL

Figure 1.1 below illustrates the individual owner-manager level (Phase 2). The conceptual model reflects the relationships among human capital and entrepreneurial orientation (independent variables), innovation, motivation (mediating variables), firm factors, industrial sector, gender (moderating variables), and growth (dependent variable).

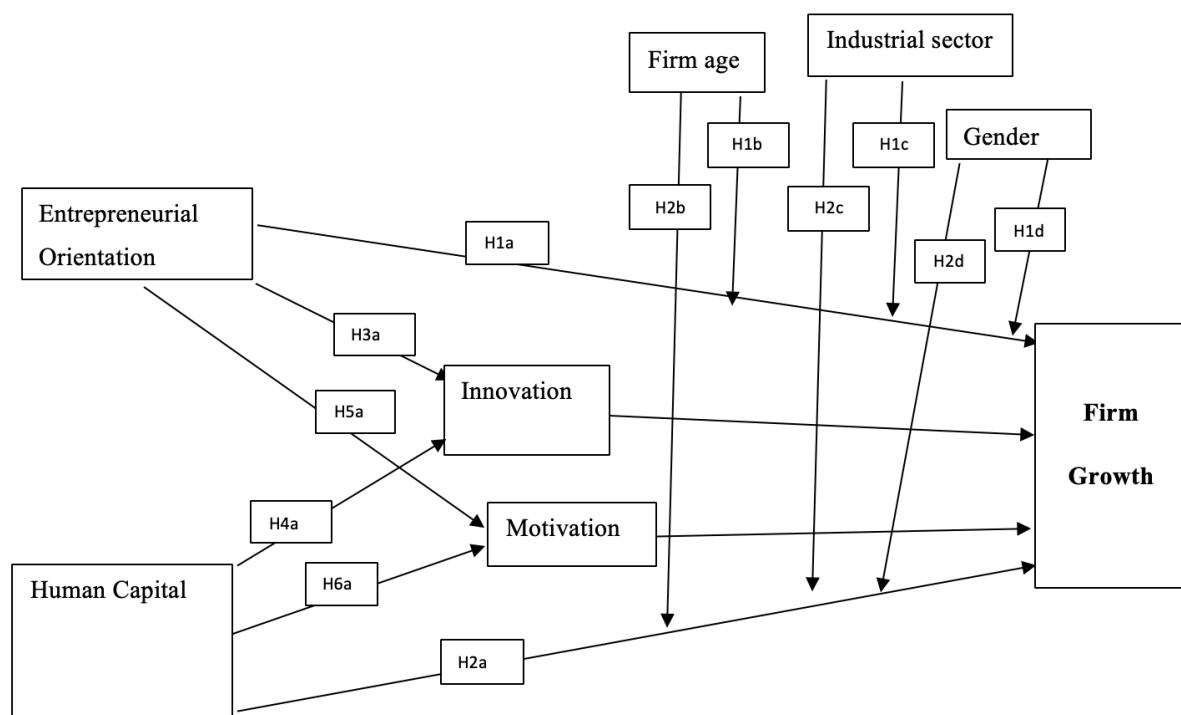


Figure 1.1: Conceptual Model of the Determinants of Firm Growth

Source: Author

The conceptual model enabled the researcher to address the research questions in the next section.

1.8. RESEARCH QUESTIONS

- **Research Question 1:** To what extent does entrepreneurial orientation influence small firm growth?
- **Research Question 2:** To what extent does human capital influence small firm growth?
 - Hypothesis 1a and 2a are derived from the research questions above.

- **Research Question 3:** To what extent does innovation influence the relationship between entrepreneurial orientation and small firm growth?
- **Research Question 4:** To what extent does innovation influence the relationship between human capital and small firm growth?
 - Hypotheses 3a and 4a are derived from the research question above.
- **Research Question 5:** To what extent does motivation influence the relationship between entrepreneurial orientation and small firm growth?
- **Research Question 6:** To what extent does motivation influence the relationship between human capital and small firm growth?
 - Hypotheses 5a and 6a are derived from the research question above.
- **Research Question 7:** To what extent does firm age influence the relationship between entrepreneurial orientation and small firm growth?
- **Research Question 8:** To what extent does firm age influence the relationship between human capital and small firm growth?
 - Hypothesis 1b and 2 b are derived from the research question above.
- **Research Question 9:** To what extent does industrial sector influence the relationship between entrepreneurial orientation and small firm growth?
- **Research Question 10:** To what extent does industrial sector influence the relationship between human capital and small firm growth?
 - Hypothesis 1c and 2 c are derived from the research question above.
- **Research Question 11:** To what extent does gender influence the relationship between entrepreneurial orientation and small firm growth?
- **Research Question 12:** To what extent does gender influence the relationship between human capital and small firm growth?
 - Hypothesis 1d and 2d are derived from the research question above.

1.9. RESEARCH HYPOTHESES

The hypotheses outlined below refer to Phase 2: Owner-Manager Level Analysis. The hypotheses, however, are derived in the literature review (see Chapter 2).

- Hypothesis 1a: There is a positive and significant association between entrepreneurial orientation and small firm growth.
- Hypothesis 2a: There is a significant and positive association between human capital and small firm growth.

- Hypothesis 3a: Innovation mediates the relationship between entrepreneurial orientation and small firm growth.
- Hypothesis 4a: Innovation mediates the relationship between human capital and small firm growth.
- Hypothesis 5a: Motivation mediates the relationship between entrepreneurial orientation and small firm growth.
- Hypothesis 6a: Motivation mediates the relationship between human capital and small firm growth.
- Hypothesis 1b: Firm age moderates the relationship between entrepreneurial orientation and small firm growth.
- Hypothesis 2b: Firm age moderates the relationship between human capital and small firm growth.
- Hypothesis 1c: Industrial sector moderates the relationship between entrepreneurial orientation and small firm growth.
- Hypothesis 2c: Industrial sector moderates the relationship between human capital and small firm growth.
- Hypothesis 1d: Gender moderates the relationship between entrepreneurial orientation and firm growth.
- Hypothesis 2d: Gender moderates the relationship between human capital and small firm growth.

The following sections provide the definition of the key terms adopted in this study.

1.10. DEFINITION OF KEY TERMS

- **Firm Growth:** The expansion of a firm's operations can be measured in various ways, such as increased sales, revenue, market share, or the number of employees (Urbano, Aparicio & Audretsch, 2019).
- **Human Capital:** The skills, knowledge, and experience individuals possess contribute to their ability to perform effectively in their roles and drive firm performance and growth (Unger, Rauch, Frese & Rosenbusch, 2011).
- **Innovation:** It creates new ideas, products, or methods that add value and drive improvements in firm performance (Braunerhjelm & Thulin, 2023). This includes technological and non-technological innovations.

- **Entrepreneurial Orientation:** A strategic orientation includes risk-taking, innovativeness, proactiveness, autonomy, and competitiveness, which influence a firm's ability to pursue opportunities and achieve growth (Lumpkin & Dess, 1996).
- **Motivation:** Motivation stimulates people to strive to achieve organisational goals by satisfying their needs and desires (Patil & Arpitha, 2023).
- **Small and Medium-Sized Enterprises:** Firms that are classified based on size are typically defined by criteria such as the number of employees and revenue (National Small Enterprise Act Schedule 1 Amendment, 2019). In the context of South Africa, SMEs face specific challenges and opportunities that impact their growth and survival.
- **COVID-19 Pandemic:** The global outbreak of the SARS-CoV-2 virus led to significant economic and social disruptions (World Health Organization. Coronavirus, 2020).
- **Resource-Based View:** A theoretical framework suggests that a firm's competitive advantage is derived from its unique resources and capabilities (Wernerfelt, 1984; Barney, 1991).
- **Becker's Human Capital Theory:** It focuses on how investments in individual skills and knowledge enhance productivity and firm performance, emphasising the importance of human capital in driving growth (Becker, 1964).

1.11. CHAPTER SEQUENCE

This research comprises seven primary chapters. The paragraphs below provide a brief description of what each chapter entails.

1.11.1. Chapter 1: Introduction and Background to the Study

This chapter introduces the research, covering its contribution, background, research problem, research questions, model, and hypotheses. It highlights the study's significance, the model development, and potential contributions to theory and practice. The chapter concludes by outlining the sequence of the subsequent chapters.

1.11.2. Chapter 2: Literature Review

The chapter examines various variables: firm growth, human capital, innovation, entrepreneurial orientation, motivation, firm factors, industrial sector, and gender. The chapter

further derives hypotheses for the current study, identifies gaps in the existing literature, contextualises the research, and highlights the contribution it makes based on previous studies.

1.11.3. Chapter 3: Research Methodology

The two phases of this study adopt different research strategies, data collection, analysis, techniques, and procedures. These are discussed in detail in Chapter 4 (Phase 1: Systematic Literature Review) and Chapter 5 (Phase 2: Owner-Manager Level). Therefore, this chapter presents an overview of the research methodology used in this study, including the research paradigm and design. It explains the chosen design's rationale and details the population, sample, and sampling criteria. The chapter also discusses the instruments used to measure various factors and includes information on the reliability of these scales from previous studies. Concerns pertaining to reliability and validity are discussed. Ethical considerations that guide the research process are highlighted. Lastly, the chapter identifies the methodological limitations of the study.

1.11.4. Chapter 4: Phase 1: Systematic Literature Review – Research Methodology and Findings

This chapter discusses the study's data collection process, data analysis, and findings for Phase 1, which uses an SLR approach. It further outlines the rigorous and systematic approach to identifying, selecting, evaluating, and synthesising existing literature on human capital, innovation, and small firm growth before COVID-19.

1.11.5. Chapter 5: Phase 2: Owner-Manager Level – Research Methodology and Findings

This chapter explains this study's research strategy, data collection, analysis, techniques and procedures adopted for Phase 2 (owner-manager level). After that, the results are provided. Additionally, the chapter presents the results of hypothesis testing. This includes examining the direct relationship between human capital and small firm growth in South Africa after COVID-19 and the direct relationship between entrepreneurial orientation and small firm growth. The chapter also investigates the mediation and moderation relationships. Finally, the results are summarised, highlighting which hypotheses were supported and those that were not supported.

1.11.6. Chapter 6: Discussion of Findings

This chapter presents the study's results' in alignment with existing literature in the South African context, highlighting supporting or contradictory findings. Furthermore, unexpected findings from the SLR and statistical analysis are discussed.

1.11.7. Chapter 7: Conclusions and Recommendations

This chapter provides an overview of the preceding chapters of this thesis.. This chapter discusses the study's implications for both theory and practice, while identifying areas for future research and potential impact on small firm owners, further elaborating in the concluding chapter.

The next section provides chapter 1's conclusion.

1.12. CONCLUSION

This chapter presented the study's background, contribution, research problem, research aim, and questions. The hypotheses were derived from the literature review section but are summarised in this study chapter. The chapter concludes with an outline of the study based on a breakdown of the chapter sequence. The next chapter reviews the existing literature and adopts it as a foundation to derive the hypotheses.

CHAPTER 2: LITERATURE REVIEW

2.1. INTRODUCTION

This chapter begins with the conceptualisation of the study. The concepts are explained, and the results of previous studies are provided. After that, the chapter explores entrepreneurship in South Africa, highlighting its crucial role in driving economic growth, creating jobs, making a social impact, fostering innovation, promoting empowerment, and encouraging inclusivity. The subsequent section delves into the effects of the COVID-19 pandemic on businesses. The chapter then examines various aspects of firm growth, human capital, entrepreneurial orientation, innovation, motivation, firm factors, industrial sector, and gender, drawing insights from existing literature. Finally, the chapter discusses the theoretical framework and provides the gaps and contradictions identified in the literature.

2.2. ENTREPRENEURSHIP IN SOUTH AFRICA

2.2.1. Definition of Small and Medium-Sized Enterprises (SMEs)

According to the National Small Enterprise Act Schedule 1 Amendment (2019), small firms in South Africa are considered separate and distinct business entities, including their branches or subsidiaries, including cooperative enterprises. The number of employees determines the size of a SME, categorised as follows: Micro (0 to 10 employees), Small (11 to 50 employees), and Medium (51 to 250 employees). These distinctions provide a clear framework for categorising businesses based on their size in terms of the number of employees. Assist in distinguishing small and medium-sized enterprises from larger firms and allow for targeted support and policies tailored to the needs of different categories of enterprises.

2.2.2. The South African SME Landscape

SMEs play a crucial role in the South African economy, significantly contributing to job creation, innovation, and economic growth (Enaifoghe, 2024). According to the 2020 FinScope Micro, Small, and Medium Enterprises Survey, the nation is home to approximately 2.6 million entrepreneurs, with a notable but lower proportion of businesses owned by women (46%) and young individuals (37%) (FinMark Trust, 2021). Despite this potential, South African SMEs face considerable challenges exacerbated by the COVID-19 pandemic, revealing their vulnerabilities (Peterson & Chinyamurindi, 2024). A concerning 70% of these businesses fail within five years, with 33% remaining in the start-up or growth phases of the business

development life cycle (FinMark Trust, 2021). The 2021/2022 Global Entrepreneurship Monitor (GEM) South Africa Report further highlights such challenges, indicating a 13.9% discontinuance rate, a 9% increase from 2019 (FinMark Trust, 2021).

In addition to high failure rates, South African SMEs grapple with limited access to finance, inadequate business support, and challenges in digitalisation (Ogujiuba *et al.*, 2023; Telukdarie *et al.*, 2023). Women-owned SMEs, which currently represent 21.1% of all SMEs, encounter even more significant barriers to financing from formal financial institutions, often due to insufficient equity, business experience, and collateral (Asah & Hove-Sibanda, 2024). While digitalisation offers significant benefits, many SMEs need more resources to develop integrated systems (Telukdarie *et al.*, 2023). Government support programs have been introduced to mitigate these challenges, yet SMEs still need assistance in accessing capital and competing with larger companies (Ramasimu *et al.*, 2023). Innovation emerges as a critical driver of SME growth and competitiveness, with various forms of innovation—product, process, marketing, and organisational—positively impacting their development (Saah *et al.*, 2023).

Several recommendations have been made to strengthen SMEs and promote sustainable growth. These include strengthening policies to improve access to funds, strengthening information flows to rural areas, and strengthening policies to improve access to finance (Ogujiuba *et al.*, 2023), fostering an innovation-friendly environment (Saah *et al.*, 2023), and providing mentorship and oversight for government-sponsored SMEs (Ramasimu *et al.*, 2023). Moreover, adopting adaptive management practices will enable SMEs to navigate uncertainties and capitalise on emerging opportunities (Saah *et al.*, 2024). Collaboration between SME owners and the government is essential in addressing managerial challenges and promote sustainability, reinforcing the vital role of SMEs in absorbing laid-off workers from both the private and public sectors (Enaifoghe, 2024).

2.2.3. Value of Entrepreneurship in South Africa

Entrepreneurship is vital to economic development, job creation, and poverty alleviation in South Africa. Research indicates that it plays a crucial role in addressing these pressing issues, fostering innovation, and stimulating economic growth (Van Praag & Versloot, 2007; Mahadea *et al.*, 2011; Naude, 2011; Bowmaker-Falconer & Herrington, 2019/2020). SMEs are significant contributors to Africa's economy, enhancing GDP, providing livelihoods, and creating employment opportunities (Atiase *et al.*, 2018). According a Organisation for

Economic Co-operation and Development (OECD, 2019) review, SMEs are essential for job creation and are the primary drivers of sustainable development and economic resilience.

In the context of global economic trends, developing and emerging markets account for over 70% of global output and consumption growth, illustrating their pivotal role in driving worldwide economic expansion (International Monetary Fund, 2017). With its diversified and developed economy, South Africa leads various sectors on the African continent and is well-positioned to capitalise on these trends (Bowmaker-Falconer & Herrington, 2019/2020). The SME sector alone accounts for about 68 per cent of the country's jobs, and McKinsey & Company (2020) estimate that SMEs generate between 50 and 60 per cent of the country's total jobs.

However, the COVID-19 pandemic exacerbated socio-economic challenges, resulting in significant SME closures, job losses, and increased poverty levels (SEDA, 2021). In recognition of the importance of entrepreneurship, the South African government has mandated entrepreneurship education in colleges and universities, aiming to stimulate entrepreneurial activity and foster a culture of innovation (Omoniyi & Gamede, 2021). Despite these policy interventions, challenges remain in effectively measuring the impact of entrepreneurship on economic development and stimulating sufficient entrepreneurial activity (Soni, 2014). To address these issues, the Department of Higher Education has launched the Entrepreneurship Development in Higher Education program, which seeks to promote collaboration among universities, businesses, and government institutions (Ncanywa, 2019). Research suggests that prioritising entrepreneurial skill development and increasing entrepreneurial activities could enhance economic growth and reduce unemployment (Musara *et al.*, 2020) in South Africa. Therefore, a greater emphasis on stimulating business growth, encouraging innovation, and implementing effective poverty alleviation strategies is essential for maximising the potential of entrepreneurship in South Africa (Soni, 2014).

2.3. COVID-19

The SARS-CoV-2 virus is responsible for the COVID-19 pandemic (Hasöksüz, Kilic & Saraç, 2020). Its emergence marks the third instance in recent years of a coronavirus causing widespread infectious disease, following the viruses responsible for Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) (Elflein, 2023). Various governments implemented lockdown measures to mitigate the transmission of COVID-19. By December 2020, the global tally of individuals affected by the virus had surpassed 68 million

(Galal, 2020). The SARS-CoV-2 virus spread alarmingly, prompting the return of lockdown measures in numerous countries (Elflein, 2021). The initial confirmation of a COVID-19 infection in South Africa occurred on March 5, 2020, specifically in KwaZulu-Natal. Subsequently, the government implemented specific localised measures on March 15, followed by a nationwide lockdown on March 27, 2020 (Kersting *et al.*, 2021).

The COVID-19 pandemic in South Africa significantly affected the economy, environment, health, society, and technology (Mbunge *et al.*, 2020). Bringing with it several pre-existing structural flaws in service delivery nationwide to the forefront (United Nations, 2019). These flaws were evident in the healthcare, hospitality, housing, infrastructure, retail, services, tourism, and water and sanitation sectors (Korankye, 2020; Sekyre *et al.*, 2020). Regrettably, the prolonged economic strain forced numerous small businesses to close their doors, as they could not withstand the extended shutdown periods (Fairlie, 2020; Rajagopaul *et al.*, 2020).

In 2020, the Government of South Africa implemented strict detention measures, but in 2021, the imposed measures were gradually relaxed, allowing for increased activity within the country. South Africa's state of disaster was lifted in April 2022. . Nonetheless, the easing of restrictions had far-reaching implications across various sectors of society (Madinga *et al.*, 2022; Rwafa-Ponela *et al.*, 2022). To address the challenges posed by the COVID-19 pandemic, businesses in South Africa had to implement different strategies to ensure their economic survival (Cele & Tshikovhi, 2023; Langry & Rena, 2023). These measures involved bridging finances, closing the business, restructuring debt, retrenching employees, wage reductions, implementing working-from-home arrangements and restructuring production processes (Leask & Ruggunan, 2021; Madinga *et al.*, 2022).

Before the COVID-19 pandemic, the South African government had significantly emphasised entrepreneurship and the SME sector as essential drivers of skills development, job creation, and economic growth (Urban & Ndou, 2019). However, the unique challenges posed by the pandemic severely disrupted the operations of SMEs, undermining the progress achieved (SEDA, 2022).

2.4. FIRM GROWTH

The importance of studying firm growth in the context of entrepreneurship in South Africa has been recognised by researchers such as Bischoff and Wood (2013), Li and Rama (2015), Mthimkhulu and Aziakpono (2015), Sitharam and Hoque (2016), Wang (2016), and Neneh and Van Zyl (2017). Understanding firm growth in the context of South African

entrepreneurship is crucial for fostering economic development, job creation, and sustainable livelihoods.

Several researchers have developed different theoretical perspectives on the growth of companies. A view such as this is the model of neoclassical firm growth (Geroski 1999). This model affirms that profit maximisation is the primary motive for all companies operating in the industry. Another perspective is the stochastic model of firm growth (Gibrat, 1931). According to this model, company growth is an involuntary and random process. Furthermore, Penrose (1959) introduced the Resource-Based View (RBV) model of firm growth, highlighting the significance of internal resources and capabilities in shaping a firm's growth. Each of these theoretical perspectives offers unique insights into the factors and mechanisms that influence the growth of firms. The RBV emphasises the significance of a firm's resources and their utilisation (Nason & Wiklund, 2018).

Other theoretical perspectives that consider the dynamics and efficiency of firms have also been proposed. Greiner (1972), Mueller (1972), Jovanovic (1982), and Chandler (1992) put forth selection and learning models that account for the dynamics within a firm and the level of efficiency of those dynamics. The complex nature of firm growth has given rise to numerous theories attempting to predict how firms evolve (Gopinath, 2012). However, it is essential to note that no single theory can robustly explain the entire process of firm growth in detail.

Without a single theory that predicts firm growth, this study will build upon the foundational work of Penrose (1959). Penrose's analysis focused on the growth process and highlighted the importance of a firm's ability to accumulate internal resources at a rapid pace. According to Penrose (1959, p.60), resources are "the physical things a firm buys, leases, or produces for its use, and the people hired on terms that make them effectively part of the firm." Wernerfelt (1984) further expands on this concept, stating that resources can be categorised as either intangible (such as human capital and relationships) or tangible (such as financial and physical capital) assets that contribute to the strengths or weaknesses of a firm. Intangible resources play a crucial role for many firms as they impact the methods through which growth is achieved and contribute to sustaining it (Riley & Robinson, 2011; Dal Borgo, Goodridge, Haskel & Pesole, 2012). The Resource-Based View underscores the significance of various resources a firm possesses, including financial and human capital, as well as the firm's expansion activities (Patnaik, Munjal, Varma & Sinha, 2022). This theory suggests that the marketplace offers numerous opportunities for firms to use their resources (Gupta, Guha & Subramanian, 2013).

By recognising and effectively utilising these resources, firms can position themselves advantageously in the market and enable growth and competitiveness.

Firm growth is primarily characterised by a significant stochastic element, implying that it is challenging to accurately predict the path of firm growth (Coad, 2007, p. 371). Weinzimmer, Nystrom, and Freeman (1998) and Janssen (2009) highlight the limited success of previous empirical research in identifying the determinants of firm growth. Delmar, Davidsson, and Gartner (2003) differentiate between two main approaches for assessing growth: starting with absolute and then relative growth. Absolute growth is commonly used in entrepreneurship literature to analyse the growth of entrepreneurial firms. In contrast, relative growth is more prevalent in labour economics and industrial organisation literature (Coad & Holzl, 2010). This distinction underscores the varying methodologies used to examine and measure firm growth in different research contexts (Lee, 2010).

Coad and Holzl (2010) conducted a study revealing that most companies have marginal growth rates and that few show high or low growth rates. Studies by Davidsson *et al.* (2007) and Dobbs and Hamilton (2007) highlighted the importance of supporting corporate growth, which contributes to employment and economic growth. Encouraging SMEs that foster growth is crucial because they play an important role in creating jobs, developing entrepreneurial skills, and promoting innovation (Ngeek, 2014). The growth phenomenon comprises several indicators (Davidsson & Wiklund, 2000; Davidsson, Achtenhagen & Naldi, 2005); these include measuring growth through employment, sales, productivity, equity, and profit (Delmar, 1997; Wiklund, 1998; Coad, 2009; Coad & Holzl, 2012; Levie & Autio, 2013). Shepherd and Wiklund (2009), Sirec and Mocnik (2010) and Isaga (2012) have found that assets, employment, and sales growth are frequently employed measures in many studies. These indicators provide insights into the firm growth of SMEs. Therefore, this study makes use of employment and sales as indicators of firm growth, like Davidsson (1991), Delmar (1997), Wiklund (1998), Davidsson *et al.* (2002), and Ferreira and Azevedo (2008). Shepherd and Wiklund (2009); Achtenhagen *et al.* (2010); Coad and Hölzl (2012); Levie and Autio (2013); Coad *et al.* (2016); Hossain *et al.* (2016); Stenholm *et al.* (2016); Laidoja *et al.* (2022); Belitski *et al.* (2023) and Babina *et al.* (2024). The next sub-sections provide broader discussions on the various indicators introduced in this section.

2.5. EMPLOYMENT AND SALES GROWTH

The type of growth indicator used can affect the findings (Coad *et al.*, 2014). Delmar *et al.* (2003) found that employment and sales growth measures represent different types of growth. Employment growth reflects the expansion of resources within the company, while sales growth shows how well a product or service is accepted in the market (Delmar *et al.*, 2003). While sales growth may best reflect short- and long-term changes in the firm and is the most common indicator measured by managers and entrepreneurs, employment has several advantages as an indicator of firm growth (Coad & Hölzl, 2012). Shepherd and Wiklund (2009) found that only a small correlation exists between employment growth and sales growth. Meanwhile, Coad *et al.* (2016) found that increasing the number of employees tends to lead to higher sales.

Insufficient entrepreneurship capacity and a scarcity of skills are barriers to employment growth in South Africa (The Department of Trade and Industry, 2008). According to Statista (2022), the COVID-19 pandemic significantly impacted the African continent regarding lost working hours. In the fourth quarter of 2020, approximately 4.5 per cent of working hours were lost, leading to the loss of around 30 million full-time jobs. In South Africa, creating jobs is an important priority of the government, and employment growth is a decisive indicator of firm growth (Fatoki, 2013). Policymakers and governments often rely on employment as an indicator for assessing company growth (Shepherd & Wiklund, 2009). Unlike sales growth, employment growth is not influenced by exchange rates or inflation and is a reliable indicator of corporate growth (Pens *et al.*, 2014). Entrepreneurs often use sales to measure their growth (Shepherd & Wiklund, 2009; Achtenhagen *et al.*, 2010; Isaga, 2012), while sales growth enables businesses to invest in various production factors, leading to increased profitability (Jansen, 2009). Despite the potential external influences mentioned above, sales growth remains a commonly used indicator to measure firm growth, as it reflects a business's performance and market success.

2.6. ENTREPRENEURIAL ORIENTATION

Entrepreneurial orientation is a step-by-step process that helps new businesses start and grow (Lumpkin & Dess, 1996). They propose that EO consists of five independent dimensions: risk-taking, innovation decision-making activities, proactiveness, autonomy, and competitive aggressiveness. These dimensions are seen as distinct components that contribute to EO. From a different perspective, Stam and Elfring (2008) define EO as a deliberate mindset that reveals

proactive behaviour, innovation, and the willingness to accept risks. Schumpeter (1942) and Audretsch and Keilbach (2005) share a similar viewpoint, suggesting that EO involves spreading knowledge, innovation, and risk-taking. Rauch *et al.* (2009) highlight that firms perform better when they exhibit EO. Mthanti and Ojah (2017) argue that EO could be a suitable measurement for capturing the real meaning of Schumpeterian entrepreneurship. Gupta (2015) and Covin and Wales (2019) conducted useful and insightful research on EO within entrepreneurship and management literature over several decades. Some studies have primarily focused on examining three out of the five dimensions of EO, namely innovativeness, proactiveness and risk-taking (García-Villaverde *et al.*, 2013; Amin, 2015; Chenuos & Maru, 2015; Amin *et al.*, 2016; Mthanti & Ojah, 2017; Neneh, & Van Zyl, 2017; Okangi, 2019).

However, this study, like Lumpkin and Dess (1996), Hughes and Morgan (2007), Callaghan and Venter (2011), Campos and Valenzuela (2013), Mahmood and Hanafi (2013), Zehir *et al.* (2015) and Rubin and Callaghan (2019) adopted all five dimensions of EO. These dimensions include risk-taking, innovative decision-making activities, proactiveness, autonomy, and competitive aggressiveness. The contemporary business environment necessitates firms to engage in repeated aggressive competition, proactively respond to market dynamics, demonstrate autonomy in decision-making, foster innovation, and undertake calculated risks to ensure their survival and achieve growth (Omisakin *et al.*, 2016). These dimensions will be briefly examined for their impact on firm growth.

2.6.1. Risk-taking

Risk-taking refers to a firm's willingness to display courage and act, even in the face of uncertainty regarding the outcomes of its endeavours (Lumpkin & Dess, 1996). It involves the courage to venture into an unknown area, the willingness to borrow in large numbers, and the commitment to many resources to overcome an uncertain environment (Lumpkin *et al.*, 2009). There are different views on the impact of taking risks on the growth of enterprises. Kraus *et al.* (2012) highlight that risk-taking plays a significant role in influencing firm growth. Further arguments have arisen that top managers with a propensity for taking risks contribute positively to the firm's overall growth (Davis *et al.*, 2010). This viewpoint is further supported by Lumpkin and Dess (2001), who suggest that risk-taking behaviour directly impacts the growth of a firm's sales. However, Hughes and Morgan (2007), Kollman and Stockman (2014), and Lechner and Gudmundsson (2014) present counterarguments suggesting that risk-taking has a negative influence on firm growth. In line with this perspective, Kosa *et al.* (2018) offer

qualitative data that explains why risk-taking can hinder firm growth. Their findings indicate that many managers often oppose allowing their employees to take risks.

2.6.2. Innovativeness

Innovativeness is a behavioural feeling both firms and individuals exhibit to actively participate in and endorse novel ideas, experimentation, creative processes, and the exploration of new products, services, or technological advancements (Lumpkin & Dess, 1996). Schumpeter (1934) identified a positive correlation between firm performance and innovativeness. Jimenez and Sanz-Valle (2011) also found that innovation significantly influences the survival and success of a firm. One of the primary motivations for a firm to engage in innovation is to enhance its overall performance (Varis & Littunen, 2010). Innovativeness ensures a firm's survival (Omisakin *et al.*, 2016). Rauch *et al.* (2009) also found a positive association between innovativeness and firm performance.

2.6.3. Proactiveness

Proactiveness means actively pursuing opportunities and developing new products or services ahead of competitors while anticipating future market demand, which fosters entrepreneurship and innovation (Lumpkin & Dess, 1996; Rubin & Callaghan, 2019). This forward-looking mindset drives proactive actions and initiatives, promoting innovative practices within organisations (Ahlin *et al.*, 2012). Research indicates that companies are more likely to generate and implement innovative ideas and solutions by actively seeking opportunities and anticipating market needs (Ahlin *et al.*, 2012; Syed, 2017). Proper measures such as finding new opportunities and responding to market changes can improve businesses' position and sales performance (Casillas & Moreno, 2010; Syed *et al.*, 2017; Rezaei & Ortt, 2018). Proactiveness is essential for corporate growth because proactive companies can react effectively to market dynamics, capture opportunities, and achieve sustainable growth and competitive advantages (Kosa *et al.* 2018; Amarteifio & Agbeblewu, 2020). Proactive companies have actively sought opportunities and predicted market trends to outperform competitors in financial results (Lumpkin & Dess, 2001). This proactive approach improves financial performance and other non-financial performance indicators (Soininen *et al.*, 2012).

2.6.4. Autonomy

Autonomy is the ability to participate in independent action, from the conception of an idea or vision to its successful execution (Lumpkin & Dess, 1996). The autonomy of a company may

vary depending on the ownership structure, size, and management style (Lumpkin & Dess, 1996). They found that the relationships between autonomy and firm performance were important in their studies, such as those of Omisakin *et al.* (2016) and Awang *et al.* (2010). Omisakin *et al.* (2016) suggest that companies with greater autonomy demonstrate better performance results. In contrast, Hughes and Morgan (2007) and Casillas and Moreno (2010) draw divergent conclusions on the relationship between autonomy and firm performance. Their research could not uncover evidence supporting the direct relationship between autonomy and firm performance. These results show that the relationship between autonomy and enterprise performance may vary depending on different context elements and factors within different industries or companies.

2.6.5. Competitive Aggressiveness

Competitive aggression refers to an active and heightened commitment to a competition that exceeds its competitor (Lumpkin & Dess, 1996). Madhushi *et al.* (2011) argue that competitive aggression affects companies' innovation. Hughes and Morgan (2007) and Kasillas and Moreno (2010) provide a different perspective on the relationship between competitive aggression and corporate growth. Their research has no evidence of substantial links between competitive aggression and firm growth. These conclusions underscore the complexity of the relationship between competitive aversion and company growth. The impact of competitive aggression on company growth may depend on many factors, including industry dynamics, market conditions, overall strategic approach and organisational capabilities.

2.6.6. Relationship between Entrepreneurial Orientation and Firm Growth

Several entrepreneurship scholars highlight that EO is valuable in measuring the performance of SMEs (Zahra & Covin, 1995; Wiklund, 1998; Melia, Boulard & Peinado, 2007; Wang, 2008; Rauch *et al.*, 2009; Casillas *et al.*, 2010; Chye, 2012; Fatoki, 2012; Mahmood & Hanafi, 2013; Messersmith & Wales, 2013; Mata & Aliyu, 2014; Amin, 2015; Zehir *et al.*, 2015; Amin *et al.*, 2016; Gupta & Wales, 2017; Kiyabo & Isaga, 2020). The existing literature on the relationship between EO and firm performance presents diverse perspectives and findings. Wang and Yen (2012) as well as Kollmann and Stockmann (2014) argue that all dimensions of EO have a similar impact on firm performance, suggesting a full view of EO's influence. On the other hand, Rauch *et al.* (2009), Rosenbusch *et al.* (2013), in a meta-analysis, found a positive moderate effect between firm growth and EO, implying that EO contributes to firm growth but with varying degrees. Rezaei and Ortt (2018) posited the effect of EO on firm

growth, suggesting that EO has a consistent impact across different countries, markets, and firms. However, Hughes and Morgan (2007), Kraus *et al.* (2012), and Lechner and Gudmundsson (2014) present different views, suggesting that the dimensions of EO may have other impacts on firm performance. These studies highlighted the complexity of dimensions of EO having varying effects on various aspects of firm performance.

Simmons (2010) pointed out that the relationship between EO and improved performance may not always be positive, suggesting that other factors could influence this relationship. Kosa *et al.* (2018) contributed to the discussion by presenting a positive and significant relationship between autonomy, risk-taking, and proactiveness with firm growth. Wang (2008), George and Marino (2011), and Larsen and Korneliussen (2012) provide insights into the interconnected nature of EO dimensions, suggesting that the dimensions of EO may change individually. This indicates that different factors may influence the relationship between each dimension and firm performance. Rauch *et al.* (2009) and Zhao *et al.* (2011) highlight that the changes experienced by a firm when engaging in a new entry depend upon factors such as the environment, organisation, and culture. These factors influence how entrepreneurial orientation is presented and its impact on firm performance.

The specific context in which a firm operates shapes the outcomes of EO, emphasising the importance of considering each firm's unique characteristics and circumstances. Khalili *et al.* (2013) highlight the significance of EO as a crucial process within a firm that enables its survival and growth. With its focus on entrepreneurial behaviours and mindset, EO allows firms to navigate challenges, identify opportunities, and adapt to changing market conditions. By adopting a proactive and innovative stance, firms can enhance their competitiveness and achieve sustained growth.

Recent studies have examined the relationship between EO and growth, especially within SMEs. EO has significantly impacted firm growth in various contexts, including Iranian agricultural SMEs (Curiumi *et al.*, 2021) and New Zealand family enterprises (Omisakin & Adagoke, 2022). The impact of EO on company performance is often mediated by factors such as entrepreneurial leadership and market orientation (Camila, Darmani, 2011) or entrepreneurial abilities (Aftab *et al.*, 2022). Environmental factors, including energy and hostility, can also moderate the relationship between EO and firm growth (Omisakin & Adegoke, 2022; Aftab *et al.*, 2022). Although some studies establish a direct correlation between EO and growth (Karimi *et al.*, 2021; Omansikin *et al.*, 2022), others suggest that this

relationship is not linear and may be influenced by additional variables (Moscow *et al.*, 2021). These results highlight the complex nature of EO-growth relations in SMEs. Irawan *et al.* (2023) reported similar findings in their systematic review of studies conducted between 2016 and 2021. Furthermore, Šlogar *et al.* (2023) examined the possibility of an inverted U-shape relationship between EO and subjective financial performance in Southeast European SMEs but found no evidence of nonlinearity. Instead, they confirmed a positive direct relationship between EO and financial performance metrics, including sales growth and profit-to-sales ratio. Bonareri Bosire (2024) also found that EO directly and positively influences the growth of manufacturing micro, small, and medium enterprises (MSMEs) in Kenya. Therefore, the first hypothesis for this study was developed as follows:

Hypothesis 1a: *There is a positive and significant association between entrepreneurial orientation and small firm growth*

2.7. HUMAN CAPITAL

Alay and Jeppe (2013) explain that human capital is the collection of people's knowledge and skills because of their education and work experience. This knowledge and skillset make people more valuable in the workforce (Cater & Cater, 2009). Human capital is primarily derived from employees' unique talents and is a crucial driver of profitability in the knowledge-based economy. In literature, it includes attributes such as knowledge, expertise, skills, experience, competence, creativity, teamwork capability, attitude, loyalty, and motivation among individuals (Ortega-Lapiedra *et al.*, 2019). Human capital is essential to a firm's performance and competitive advantage (Mayer *et al.*, 2012). This recognition of the significance of human capital extends to researchers in both developing and developed countries, who have identified the correlation between human capital and firm growth. Lee *et al.* (2016) assert that human capital theory includes the knowledge and technological expertise individuals contribute to an organisation, leading to its success. Individuals with high levels of human capital are likelier to perform better (Saffu, 2008). Unger *et al.* (2011) conducted a meta-analysis of more than 50 articles and concluded that human capital significantly impacts firm performance. Differences in human capital among firms can be used to measure variations in their performance. The National Development Plan in South Africa explicitly recognises a skills shortage among SMEs in the services sector (National Planning Commission, 2011).

Human capital studies have grown over the past two decades (Ployhart & Moliterno, 2011). Human capital originated in economics, with Mincer (1958) and Becker (1964) being seminal

contributors to its development. Their work emphasised the economic value of investments in education, training, and experience, highlighting the positive impact of human capital on individual productivity and earning potential. The literature on SME growth has extensively examined the significance of human capital, with several studies highlighting its importance (Rauch *et al.*, 2005; Unger *et al.*, 2011; Marvel *et al.*, 2016; Parker, 2018). Entrepreneurs who invest in developing their human capital are better positioned to identify and capitalise on profitable innovations, leading to improved business performance (Unger *et al.*, 2011). By enhancing their knowledge, skills, and abilities through continuous learning, training, and experience, entrepreneurs are better equipped to navigate the dynamic business environment and drive the growth of their SMEs.

Entrepreneurship scholars recognise the significance of human capital as a crucial determining factor of firm success and growth and have categorised human capital into two distinct types: general and specific human capital (Rauch & Rijsdijk, 2013; Hmielski *et al.*, 2015; Marvel *et al.*, 2016; El Shoubaki *et al.*, 2020). General human capital refers to knowledge, broader skills, and attributes transferable across different industries and contexts. This includes demographics, formal education, and general work experience (Becker, 1964, 1993; Gimeno *et al.*, 1997). On the other hand, specific human capital relates to skills, knowledge, and experiences directly relevant to the entrepreneurial domain, such as entrepreneurial experience, industry-specific expertise, and managerial skills (Becker, 1964, 1993; Gimeno *et al.*, 1997).

2.7.1. General Human Capital

General or non-task-related human capital has been researched over the years (Gimeno *et al.*, 1997; Wiklund & Shepherd, 2003; Ucbasaran *et al.*, 2008). Education is the most widely studied entrepreneurial variable related to human capital (Becker, 1964; Nishantha, 2011; Unger *et al.*, 2011; Martin *et al.*, 2013). Education enables entrepreneurs to gain the required knowledge and skills to grow their firms. For example, a study by Schiller and Crewson (1997) highlighted that men who were highly educated were more likely to run businesses successfully. However, years of self-employment and prior work experience contributed to the success of female-run companies. Entrepreneurs who strive for growth will have higher levels of education (Gupta *et al.*, 2013). The higher the education, the greater the reward for the firm (Marvel *et al.*, 2016). Firm growth can be achieved by leveraging the networks that entrepreneurs build as they increase their education (Romero & Martinez-Roman, 2012). Rauch and Rijsdijk (2013) postulated that owner-managers who invest in education are better

able to grow their firm than owner-managers who need to be educated. Studies by Rauch *et al.* (2005) and Block and Sandner (2009) support a positive relationship between education and firm growth. However, Davidsson and Honig (2003) and El Shoubaki *et al.* (2020) find no direct effect between general human capital and employment growth.

2.7.2. Specific Human Capital

Specific or task-related human capital is typically assessed through experience. El Shoubaki *et al.* (2020) underscore that specific human capital could influence firm growth in distinct ways compared to general human capital. Fewer resources and time investments are required in specific human capital (Rauch & Rijsdijk, 2013). Marvel *et al.* (2016) find that work experience is often measured using the years one has experienced in a particular industry. Coleman (2007) finds a significant and positive relationship between previous experience in business and firm profitability. Entrepreneurs with experience in a specific industry will be able to understand how it works, enabling the firm to grow (Packalen, 2007). Entrepreneurs often start firms in an industry they have experience in to apply their acquired skills and knowledge (Marvel *et al.*, 2016). El Shoubaki *et al.* (2020) found a positive and significant association between specific human capital and employment growth. Industry-specific experience enhances performance (profit, employment and survival) (Bosma *et al.*, 2004). However, Shepherd and Wiklund (2007) argue that expertise acquired from working within a specific industry equips individuals with skills and knowledge that could be particularly advantageous, as such experiences are often context-specific.

2.7.3. Relationship between Human Capital and Firm Growth

Unger *et al.* (2011) examined the correlation between success and general and specific human capital. Their results unveiled a positive relationship between success and human capital, with specific human capital demonstrating a more pronounced impact than general human capital. Human capital also includes attributes relevant to productivity and job performance, work values, attitudes, and personality traits (Ployhart & Moliterno, 2011). Becker (1964) found that work experience and education investment resulted in knowledge and skills. Marvel *et al.*'s (2016) systematic review found that work experience, education, entrepreneurial experience, demographics (age, gender and whether there are any entrepreneurs in the family), cognition or psychological factors are the common constructs used to measure human capital. The most common factors were work experience and education (Reuber & Fisher, 1994).

Despite extensive research on the connection between firm growth and human capital, unresolved inquiries still need to be made concerning the influence of additional factors. While studies have recognised the beneficial effect of human capital on firm growth, it is necessary to delve deeper into the relationship between human capital and other variables to comprehend firm growth comprehensively. Marvel *et al.* (2016) and Khan and Quaddus (2018) have recognised the potential influence of factors such as industry characteristics, firm-specific attributes, market conditions, and external environments on the relationship between human capital and firm growth.

Human capital development ensures competitive advantage and survival in global markets and increases the labour force's productivity, creativity and innovation. Human capital investment improves companies' value by improving growth opportunities, generating prospects, and reducing growth volatility (Sedra *et al.*, 2021). For example, in Greek manufacturing companies, human capital positively impacted growth (Magoutas *et al.*, 2012). However, this relationship can be complex; some studies have found negative correlations between the effectiveness of human capital and the growth of non-financial companies in Nigeria, whereas employee growth has a positive relationship (Mustafa & Stella, 2023). These findings highlight the importance of investing in strategic human capital through training and retention strategies to maintain corporate growth and performance (Mustafa & Stella, 2023).

Growth of enterprises is positively correlated with higher education and management experience (Marconatto, 2021; Gürbüz, 2020). Financial success in women-owned micro- and small-scale enterprises depends mainly on certain human qualities, such as education, leadership experience, and team leadership (Costin & Colleagues, 2021). Sales growth is determined by factors such as training and wages, while small-scale business growth is supported by entrepreneurs' parents and professional organisations (Gürbüz & Akyol, 2020). The company's growth is closely linked to the manager's experience, size, funding, training, and networking (Rafiki, 2020). However, depending on the national environment and the focus of companies on technology, the impact of human capital on the growth of small and medium-sized enterprises may vary (Marconatto *et al.*, 2021).

In manufacturing firms, the impact of human capital on innovation varies by company size. Employee endowments are more significant for small firms, while internal training practices are crucial for larger organisations (Segantini, 2024). Although the direct relationship between human capital development and firm performance may only sometimes be evident, innovation

often mediates this connection, underscoring the importance of fostering innovative practices within organisations (Tuamyil & Gado, 2024). When effective investment strategies are adopted, human capital accumulation and its drivers positively influence organisational performance. Firms that invest in developing their human capital experience growth, enhanced performance, and improved survival rates in competitive environments (Mutua *et al.*, 2024). Therefore, the second hypothesis developed for this study was:

Hypothesis 2a: *There is a significant and positive association between human capital and small firm growth*

2.8. INNOVATION

Innovation is an asset for firms, allowing them to attain a sustained competitive advantage (Barney, 1991). Innovation plays a crucial role in influencing firm productivity, as it brings forth new ideas, products, and technologies that can enhance operational efficiency and effectiveness (Spescha & Woerter, 2016). The RBV supports the notion that innovation activities rely on interacting with each other (Adegbesan, 2009). The RBV proposes that companies can uniquely gain competitive advantages by combining diverse resources (García-Piqueres *et al.*, 2020). Developing various innovative activities enhances their ability to offer services to clients and achieve their goals. By continuously investing in innovation, firms can build and maintain distinctive resources and capabilities that contribute to their growth and success (Cho & Pucik, 2005). The ability of a firm to be innovative is influenced by several factors, which include entrepreneurial behaviour, risk-taking, organisational learning, economic opportunities, and technological and organisational capabilities (Lenihan *et al.*, 2019). These elements contribute to the firm's capacity to generate and implement new ideas, products, and processes.

Innovation includes various types, such as products and process technologies (Schumpeter, 1934). Studies in innovation management have shown that firms commonly combine multiple types of innovation rather than focusing on just one kind in isolation (Hullova *et al.*, 2016; Carboni & Russu, 2018; García-Piqueres *et al.*, 2020). Previous research has primarily emphasised the simultaneous adoption of product and process innovations (Damanpour & Gopalakrishnan, 2001; Reichstein & Salter, 2006; Damanpour *et al.*, 2009; Martinez-Ros & Labeaga, 2009; Barge-Gil *et al.*, 2011; Hervas-Oliver *et al.*, 2015; García-Piqueres *et al.*, 2020).

2.8.1. Product and Process Innovation

Literature provides numerous definitions of product and process innovation (Hullova *et al.*, 2016). In this study, similar to Hullova *et al.* (2016), product and process innovation are defined according to the definition provided by the OECD. Product innovation relates to making something new or better, like improving technology and materials or making it easier to use. Product innovations occur when a new product or a new version of an existing product is introduced to meet a particular customer's market needs (Tavassoli & Karlsson, 2015). Process innovation means finding new or better ways to make or deliver things, like changing techniques, equipment, or software (OECD, 2015). Process innovations involve introducing new production methods, including novel commercial approaches for handling goods or services (Tavassoli & Karlsson, 2015). These innovations aim to reduce unit costs by introducing new machinery containing valuable knowledge. Introducing new product innovation may require related process innovation (Martínez-Ros & Labeaga, 2009). Likewise, adopting process innovation can significantly support a company's capability to enhance product quality or introduce novel products. Companies frequently combine process innovation with product innovation, indicating that the economic value of process innovation typically shows in product innovation (Martínez-Ros & Labeaga, 2009).

2.8.2. Research and Development

Innovation was primarily seen as a process carried out within firms and driven by research and development (R&D) activities conducted over a significant period (Freeman, 1995). However, the concept of innovation has evolved to encompass not only the creation of new products but also the modification of existing ones and the development of new processes (Koroglu & Ecerel, 2015). The study conducted by Coad *et al.* (2016), which measures innovation using R&D expenditure, finds a positive relationship between R&D effort and firm growth, supporting the view that investing in R&D activities can contribute to firm growth. R&D expenditure is commonly used as an alternative for innovation, representing a firm's commitment to developing new products, processes, or technologies. The Community Innovation Survey (CIS) conducted in 2012, focusing on small firms, found that many firms need innovation as measured by R&D activities. These findings highlight that not all firms, especially smaller ones, may have the resources or capabilities to invest heavily in R&D. While R&D is commonly viewed as a crucial indicator of technological innovation, scholars have discovered varied outcomes concerning its impact on both product innovation and firm performance (Heij *et al.*, 2020).

2.8.3. Relationship between Innovation and Firm Growth

In recent years, there has been a growing body of empirical and theoretical research focusing on the relationship between innovation and firm growth (Schumpeter, 1934; Coad & Rao, 2008; Rosenbusch *et al.*, 2011; Audretsch *et al.*, 2014; Fuad *et al.*, 2023; Braunerhjelm & Thulin, 2023; Salas *et al.*, 2023). However, this relationship has mixed results (Rosenbusch *et al.*, 2011). Audretsch *et al.* (2014) have further discovered the relationship between innovation and firm growth, building upon Schumpeter's ideas. Their work emphasises the significant impact that innovative activities have on firms, driving their competitive advantage, market share, and long-term success.

According to the Schumpeterian theory of firm growth, "creative destruction" allows firms to enter new markets by introducing innovative products and processes. Schumpeter (1934) highlights that innovation can manifest in various forms, including developing new products, implementing new processes, utilising new sources of supply, exploring new markets, and adopting new organisational structures. In Schumpeter's framework, entrepreneurs play a crucial role in driving firm growth through their ability to introduce unique ideas, products, and processes. SMEs generally need help to boost growth through innovation more than non-SMEs, possibly due to differences in their characteristics (Fuad *et al.*, 2023). Bong and Park (2021), Edeh and Acedo (2021) and Salas *et al.* (2023) discovered a relationship between product and process innovation and the performance of small businesses. At the same time, Altuzarra (2024) obtained a positive influence of R&D expenditures on firms' sales growth. However, while process innovation positively impacts employment, product innovation's positive effect is not statistically significant (Audretsch *et al.*, 2014).

2.8.4. Relationship between Innovation, Entrepreneurial Orientation and Firm Growth

Numerous studies in entrepreneurship have focused on the relationship between EO and firm growth (Zahra & Covin, 1995; Wiklund, 1998; Wang, 2008; Rauch *et al.*, 2009; Fatoki, 2012; Chye, 2012; Mahomood & Hanafi, 2013; Mata & Aliyu, 2014; Amin, 2015; Zehir *et al.*, Can & Karaboga, 2015; Amin *et al.*, 2016). However, this conclusion leads to ambiguous results and suggests that further investigations are needed to explore the direct relationship between EO and corporate growth (Shan *et al.*, 2016).

Wales, Gupta, and Mousa (2013) conducted a meta-analysis that identified a gap in understanding how EO influences other variables and firm growth. Their analysis underscores

the importance of examining mediating variables that explain the EO-growth relationship, thereby calling for more research. Researchers such as Baker and Sinkula (2009), Renko *et al.* (2009), and Fernández-Mesa and Alegre (2015), have suggested that EO is a critical factor for innovation. Furthermore, Harms *et al.* (2010) found that innovation partially mediates the relationship between EO and growth. Rochdi *et al.* (2017) also established that process innovation mediates the relationship between EO and firm performance. While a relationship between EO and innovation exists, it is essential to recognise that innovation is both influenced by and serves as an indicator of entrepreneurial activities. Scholars such as Covin and Miles (1999), Ireland and Webb (2007), and Schumpeter (1934) have acknowledged this dual role of innovation within the entrepreneurial context.

Recent research has shown that EO positively impacts firm growth and innovation performance (Kamik *et al.*, 2021; Esque *et al.*, 2023). The impact of EO on innovation varies from country to country, showing a U-shaped relationship (Wach *et al.*, 2022). Innovation performance also mediates the relationship between the performance of EO and companies and the performance of social capital and companies (Ince *et al.*, 2021). In digital entrepreneurs, EO significantly improves disruptive innovation (Cross *et al.*, 2023). However, the effectiveness of digitalisation strategies in stimulating disruptive innovation depends on the level of EO, and high-enterprise companies sometimes perceive digitalisation as a constraint (Kraus, 2023). A meta-analysis has shown that innovation completely mediates the relationship between OEO and enterprise performance while mediating the influence of market and learning directions (Reyes-Gómez *et al.*, 2024). The interaction between EO and innovation is crucial to organisational competitiveness and long-term success. EO promotes a proactive risk-taking mindset and innovation by providing resources for generating new opportunities (Fu *et al.*, 2024). Managers should seek to balance the promotion of innovation and cultivating an entrepreneurial mindset to ensure continuous growth and profitability (Fu *et al.*, 2024). The extant literature findings highlight the complex interplay between EO, innovation, and firm performance across various contexts. Therefore, the following hypothesis was developed:

Hypothesis 3a: *Innovation mediates the relationship between entrepreneurial orientation and small firm growth*

2.8.5. Relationship between Innovation, Human Capital and Firm Growth

Studies by Koroglu and Ecerel (2015) and Lenihan *et al.* (2019) highlight the significance of human capital as a critical determinant of innovation. Skilled and knowledgeable employees

bring new perspectives, ideas, and problem-solving abilities to the innovation process, driving the development of new products, services, and processes. Research by Coronado, Acosta, and Fernández (2008) suggests that employee qualifications and firm size positively influence innovation. Their findings indicate that employees with advanced degrees or specialised training can enhance a firm's capacity for innovative activities. Additionally, larger firms often have access to a broader pool of human capital and resources, providing them with a competitive edge in innovation.

The education level of employees also correlates positively with a firm's engagement in product innovation (McGuirk & Jordan, 2012). Higher education enhances employees' knowledge, critical thinking, and ability to generate new ideas, all contributing to a firm's innovation capabilities. The OECD (2011) emphasises that human capital is essential to innovation, noting that skilled individuals create and utilise new knowledge and technology. They state, "A higher level of human capital spurs innovation via various mechanisms, including the generation of new knowledge, adoption and adaptation of existing technologies, and human capital spillovers" (OECD, 2011, p. 25). McGuirk *et al.* (2015) found a significant positive relationship between managers who leverage training opportunities and innovation outcomes in small firms. However, mixed results have emerged regarding the impact of education on innovation (McGuirk *et al.*, 2015). Suggesting that this relationship may depend on factors such as industry context, firm size, and the specific dimensions of innovation considered. For instance, a study on manufacturing firms in Finland revealed that technical skills acquired through specialised education significantly influences innovation (Leiponen, 2005).

High levels of education and training are closely associated with enhanced firm innovation (Toner, 2011), indicating that technical and non-technical education contributes to an organisation's innovation capacity. Nevertheless, the relationship between human capital and innovation can be complex and context-specific. For example, Schneider *et al.* (2010) found no positive relationship between highly skilled employees and firm innovation in Germany's manufacturing sector, highlighting the need for further research. While innovation is generally perceived to boost productivity and sales, its impact on employment requires further exploration. Triguero and Córcoles (2014) examined this issue in manufacturing companies in Spain from 1990 to 2008, finding that process innovation positively affects employment, while the impact of product innovation was positive but not statistically significant. Similarly, Coad

and Rao (2011) tested the relationship between different types of innovation and labour demand, concluding that product innovation tends to increase employment levels.

The relationship between human capital, innovation and firm growth is complex and depends on the context. In developed countries, human capital accumulation positively affects innovation and growth, but taxation may obstruct this process (Erikson *et al.*, 2023). In developing countries, technological adaptation is crucial to fostering innovation. For example, human capital donations significantly impact SMEs' innovation in the manufacturing sector of Uruguay, but internal training is essential for large companies (Segantini, 2024). In sub-Saharan Africa, human capital quality measurements positively impact inclusive growth. However, the indirect effects of human capital through innovation are negative, indicating that technological progress is insufficient (Oyinlola *et al.*, 2021).

Policy implications include avoiding one-size-fits-all approaches and considering firm size when designing innovation strategies (Segantini, 2024). Additionally, carefully considering tax policies is necessary to prevent adverse effects on human capital accumulation, affecting innovation and growth (Eriksson *et al.*, 2022). Human capital positively impacts innovation capabilities and firm performance, particularly in SMEs (Selivanovskikh, 2023). Firm-specific and general human capital enhances technological innovation, with international experience further strengthening this relationship (Gwon *et al.*, 2020). In developing economies, different dimensions of human capital impact innovation differently based on firm size, with employee endowments crucial for small firms and internal training essential for large companies (Segantini, 2024). Industries that are more R&D-intensive demonstrate greater innovation quality and quantity in economies with higher levels of human capital, leading to increased labour productivity and firm value (Wang & Yu, 2023). Therefore, hypothesis 4a was developed as follows:

Hypothesis 4a: *Innovation mediates the relationship between human capital and small firm growth*

2.9. MOTIVATION

Motivation is the stimulation and direction of behaviour (Elliot, 2022). This involves a chain reaction that starts with the need for feeling, leading to motives that trigger tension and action towards the goal (Patil & Arpitha, 2023). Motivation comprises three main components: needs, impulses, and objectives (Harah *et al.*, 2023). Motivation is linked to curiosity, persistence,

and performance in education (Strongman, 2022). Motivation can be intrinsic (for its good) or external (for external rewards) (Strongman, 2022).

Nieman and Nieuwenhuizen (2009) highlight that individuals enter business for various reasons. In South Africa, where entrepreneurship may not always be viewed as an ideal career, some individuals are driven to entrepreneurship by job loss. In contrast, others are attracted by emerging market opportunities (Asah *et al.*, 2015). Motivation is a critical factor that drives individuals to act (Ryan & Deci, 2000; Graafland & Bovenberg, 2020). Prior researchers emphasise the importance of entrepreneurial motivation in understanding the entrepreneurial process (Shane *et al.*, 2003; Carsrud *et al.*, 2009; Carsrud & Brännback, 2011). Specifically, Mahto and McDowell (2018) found that motivation significantly influences individuals contemplating entrepreneurship. Understanding entrepreneurs' motivations for initiating, expanding, and eventually exiting their businesses (Murnieks *et al.*, 2020). While extensive research has focused on firm growth within the entrepreneurial process, less attention has been given to the start and exit phases (Murnieks *et al.*, 2020). Delmar and Wiklund (2008) found that the motivation for firm growth significantly influences an entrepreneur's decisions and actions.

The motivation that drives entrepreneurs to expand their business is closely linked to actual firm growth (Delmar & Wiklund, 2008; Wiklund & Shepherd, 2003). Asah *et al.* (2015) found a positive correlation between the motivations of SME owners/managers and firm performance. Similarly, Giacomini *et al.* (2007) observed a significant positive association between SME managers' motivations and firm performance. In studies focusing on female entrepreneurs, Morris *et al.* (2006) discovered that extrinsic motives impact firm growth more significantly than intrinsic ones. Extrinsic motivation, derived from external rewards rather than personal satisfaction from the task itself, may be a crucial driver of business success (Ryan & Deci, 2000; Krishnamurthy *et al.*, 2014).

Intrinsic motivation, characterised by a desire to engage in challenging and novel activities, encompasses relatedness, creativity, competence, and autonomy (Deci & Ryan, 1985; Malek *et al.*, 2020). This type of motivation is essential for aspiring entrepreneurs, as it fosters self-determination and competence, driving individuals to achieve their goals (Swierczek & Thai, 2003). Entrepreneurs who prioritise internal motivation in the growth of their enterprises tend to positively impact the overall performance of their companies (Murnieks *et al.*, 2020). Internal motivation is an important asset that facilitates company growth (Yamakawa *et al.*,

2015). Owners of intrinsically motivated SMEs are more likely to engage actively in their business and continue improving their skills (Bande *et al.*, 2016).

According to Chu *et al.* (2007), survival and financial gain are primary motivators for entrepreneurship among African entrepreneurs. Ghana *et al.* (2017) found that motivation mediates the relationship between entrepreneurial orientation and firm performance, particularly noting that push factors (extrinsic motivation) are significantly related to firm performance. While Wiklund and Shepherd (2003) argue that empirical studies exploring the relationship between motivation and SME growth are limited, Moen *et al.* (2016) assert a consistent positive relationship between firm growth and motivation across various studies.

Moreover, entrepreneurial motivation has been shown to mediate the relationship between EO and firm performance, especially in micro-enterprises (Moko *et al.*, 2024). The effectiveness of EO, market orientation, and entrepreneurial marketing can vary based on environmental and organisational factors, with EO often outperforming others in specific conditions, particularly in smaller firms (Alqahtani *et al.*, 2023). Additionally, CEO regulatory focus—a motivational attribute—significantly impacts EO in SMEs, with a promotion focus positively influencing entrepreneurial orientation and a prevention focus having a negative effect (Huang *et al.*, 2024).

Entrepreneurship motivations, such as the desire for success and financial reward, positively impact the growth of SMEs, mediated by personality traits (Ismail, 2022). The effectiveness of human capital and the growth of employees also have a major impact on enterprises' growth, emphasising the need for strategic training to improve performance (Mustafa & Stella, 2023). The main components of human capital, including training and motivation, are vital to combating the persistent low performance of companies (Pembi *et al.*, 2023). Therefore, hypotheses 5a and 6a were proposed as follows:

Hypothesis 5a: *Motivation mediates the relationship between entrepreneurial orientation and small firm growth*

Hypothesis 6a: *Motivation mediates the relationship between human capital, motivation and small firm growth*

2.10. FIRM AGE

Some studies have identified the age of companies as an important factor influencing company growth. Rauch *et al.* (2009), Coad *et al.* (2013), Haltiwanger *et al.* (2013), and Neneh and Van Zyl (2017) emphasise the importance of the economic age of companies in understanding

business growth dynamics. The longevity of growth varies with age, with Coad *et al.* (2014) finding that new businesses exhibit positive autocorrelation in sales growth, whereas older companies often show increasingly negative autocorrelation. This trend suggests that older companies may need help to adapt to changing market conditions. Ferreira and Azevedo (2008) found that young companies grow faster than older ones. This can be explained by several factors, including strategic positioning and their ability to make proactive, innovative, and risky choices. Younger companies usually need more established routines and structures to be more agile and responsive to market opportunities and changes. Anderson and Eshima (2013) emphasise that young companies are likelier to adopt entrepreneurial and growth-oriented strategies and contribute to faster growth rates. Young enterprises tend to grow faster than older enterprises, especially in a larger growth proportion (Barba Navaretti *et al.*, 2014).

While some studies support that younger firms have higher growth potential (Megaravalli & Sampagnaro, 2018; Belitski & Desai, 2021), others differ in that older firms can grow more rapidly (Zhou & Gumbo, 2021). The choice of size measurements based on sales or employment significantly impacted observed growth patterns (Giannoulakis & Sakellaris, 2020). In addition, the company's age affects the survival rate, with the older companies generally showing higher survival rates (Giannoulakis & Sakellaris, 2020). Rosenbusch *et al.* (2011) discussed the influence of the age of the enterprise on the performance of SMEs but did not consistently take into account the age of the enterprise in studies on African EO (Callaghan & Venter, 2011; Alalape, 2013; Le Roux & Bengesi, 2014; Neneh *et al.*, 2016). However, a study conducted by Kosa *et al.* (2018) in Ethiopia provided some insights into the relationship between firm age and growth, suggesting that young firms experience better growth than older firms.

Recent research has shown that firm age is generally negatively associated with growth rates, except in lower distributions (Erdogan, 2023). However, older companies may not be affected by financial constraints during growth (Nguang *et al.*, 2024). The age of firms reduces the impact of economic constraints on growth, and the impact on older companies is less severe (Ng *et al.*, 2024). Although young enterprises have positive self-correction in growth rates, this pattern is irregular as the enterprise grows older (Capelleras & Federico, 2024). Due to resource constraints, young enterprises may need help pursuing strategies for EO and process improvement (Raalskov *et al.*, 2024). Family enterprises require specialised human capital management because of their unique emotional dynamics (Bito *et al.*, 2024). Firm age also moderates the influence of firm characteristics on the choice of capital structure in emerging

markets, intensifies the negative impact of profitability and firm size, and weakens the positive relationship between asset flexibility and leverage (Matemilola *et al.*, 2024). Therefore, hypotheses 1b and 2b were developed as follows:

Hypothesis 1b: *Firm age moderates the relationship between entrepreneurial orientation and firm growth*

Hypothesis 2b: *Firm age moderates the relationship between human capital and small firm growth*

2.11. INDUSTRIAL SECTOR

The relationship between EO and firm performance varies across different sectors (Zahra, 2008). Firm growth is positively associated with own-sector employment in many industries, particularly manufacturing and infrastructure (Eaudry *et al.*, 2023). Miller (2011) argues that existing research on EO needs a comprehensive understanding of its significance across diverse industries. When studying the relationship between EO and firm growth, it is essential to differentiate between the service and manufacturing industries (Rigtering *et al.*, 2014). Rauch *et al.* (2009) emphasise the importance of considering the industry context when examining firm behaviour and outcomes. Wales *et al.* (2013) echo a similar sentiment by calling for more research focusing on the industry dimension. Zahra (2008) highlights that EO substantially impacts firm performance, particularly in manufacturing. Kosa *et al.* (2018) suggest that firms in the manufacturing industry exhibit aggressive competition, proactivity, autonomy, and a higher inclination towards risk-taking than firms in other industries. However, Rigtering *et al.* (2014) discovered that firms in the service industry demonstrate more significant levels of innovation, risk orientation, and proactivity than manufacturing companies. A study conducted in Austria by Kraus (2011) indicated that EO plays a significant role in the service industry as a driver of firm performance. EO positively influences innovation through intellectual capital in industrial SMEs (Horchani *et al.*, 2023). Directly impacting firm growth and strategic capabilities in manufacturing SMEs (Mosonik *et al.*, 2024).

Interestingly, Rigtering *et al.* (2014), in their study on SMEs in Germany, Austria, Switzerland, and Liechtenstein, discovered a robust relationship between EO and firm growth, particularly for firms operating in the manufacturing industry compared to those in the service industry. These findings suggest that the impact of EO on firm growth may differ depending on the specific industry context. Choi and Williams (2016), Rauch *et al.* (2009), and Rigtering *et al.* (2014) have all emphasised the need for studies examining the EO-performance relationship to

consider the moderating role of industry. This suggests that the industry context can influence the relationship between EO and firm performance. Therefore, the hypothesis developed as per the provided discussion was as follows:

Hypothesis 1c: *Industrial sector moderates the relationship between entrepreneurial orientation and small firm growth*

Cowling *et al.* (2018) found that firms in the construction industry are more likely to experience declines in employment, while firms in the manufacturing sector, regardless of the specific industry, are more likely to face declines in sales. According to Gupta *et al.* (2013), entrepreneurs with a strong desire for growth can establish manufacturing firms more than service ones. Additionally, Choi and Williams (2016) argue that the industry in which a firm operates, whether in the services or manufacturing sector, can influence the effect of the mediating variable. In other words, the impact and significance of the mediating variable may vary depending on the specific industry context of the firm. According to Bowmaker-Falconer and Herrington (2020), the retail and wholesale industries in South Africa exhibit the highest levels of early-stage entrepreneurship activity, accounting for over 40% of such activity in the country. Following these industries, the health, education, government, and social services sectors contribute significantly to early-stage entrepreneurship activity.

The impact of human capital on small firm growth may vary depending on the specific industry in which the firm operates (Audretsch, 1995; Almus & Nerlinger, 1999; Davidsson *et al.*, 2002; Lorunka *et al.*, 2011). Unger *et al.* (2011) emphasise the influential role of the industrial sector in the relationship between human capital and entrepreneurial success. The authors note that the moderating effect of the industrial sector is significant in this relationship. The industrial sector can moderate the relationship between human capital and small firm growth due to variations in industry-specific knowledge and skills, technological advancements, market dynamics, competitive landscape, regulatory environment, and market demand (Khandwalla, 1976; Utterback, 1996). In manufacturing firms, human capital's influence on innovation varies by size, with employee endowments crucial for small firms and internal training vital for large ones (Segantini, 2024). Therefore, another hypothesis was developed as follows:

Hypothesis 2c: *Industrial sector moderates the relationship between human capital and small firm growth*

2.12. GENDER

The role that gender plays in business has been explained using the Social Feminist Theory (SFT) and the Liberal Feminist Theory (LFT) (Inmyxai & Takahashi, 2010; Robb & Watson, 2011; Quaye *et al.*, 2015). SFT holds that females and males have different behaviours, experiences and traits; however, despite these differences, it does not mean that males are more effective entrepreneurs than females (Neneh *et al.*, 2016). SFT further highlights early socialisation's impact on fundamental differences between males and females in behaviours, experiences, and traits, emphasising the importance of valuing individuals' unique contributions regardless of gender (Kutanis & Bayraktaroglu, 2003). In contrast, the LFT attributes differences in gender behaviour to situational factors rather than integral capabilities, supporting equal opportunities and combating systemic barriers to addressing gender inequalities (Alfonso-Almeida, 2013; Neneh *et al.*, 2016). This perspective acknowledges that differences in firm performance can stem from gender differences and organisational inputs (Orser *et al.*, 2010). LFT further suggests that women-owned firms may face challenges such as lack of experience, education, and discrimination, contributing to relatively poorer performance than those owned by men (Ahl, 2006). Thus, adopting the LFT viewpoint helps understand how gender dynamics influence firm growth and emphasises the importance of addressing systemic barriers to create a more inclusive business environment.

Although male and female characteristics are similar, there are some differences (Kelly *et al.*, 2017). The difference between entrepreneurs is the motivation, business financing, networkability, risk tolerance, management, and decision-making style (Shmailan, 2016). De Bruin *et al.* (2006), Huls (2006), and Rowka *et al.* (2011) found gender to be one of the key factors in predicting the growth of SMEs. Understanding these gender differences can help inform policies and support initiatives aimed at promoting gender equality, ensuring equal opportunities for all, and promoting the growth and success of entrepreneurs of both men and women. By addressing specific challenges women entrepreneurs face and promoting an inclusive business environment, society can exploit all entrepreneurs' full potential, regardless of gender. Globally, female entrepreneurs have experienced significant growth, which can be observed by gender differences in company growth (Wang Huls (2006), Li & Long, 2019). African countries, including South Africa, have also seen more women enter entrepreneurship than men (Brush *et al.*, 2010; GEM, 2017; Nziku, 2016; Bowmaker-Falconer & Meyer, 2022).

However, research by Lorunka *et al.* (2011) suggests that businesses initiated by female entrepreneurs demonstrate a lower potential for growth. Female entrepreneurs face various challenges that negatively impact their ability to establish and expand their ventures (Amine &

Staub, 2009; Halkias *et al.*, 2011; Brixiová & Kangoye, 2016; Nziku, 2016; Honyenuga, 2019; Brixiová *et al.*, 2020). These factors contribute to the difficulties faced by female entrepreneurs and hinder their overall growth prospects. Ahl and Nelson (2010) emphasise the importance of researching male and female entrepreneurs separately, as they present different behaviours influenced by various external forces. Due to the significant increase in the number of females engaging in entrepreneurship (De Bruin *et al.*, 2006). Gender has been found to impact firm growth (Estrin & Mickiewicz, 2011) directly or indirectly. However, Nichter and Goldmark (2009) suggest that females experience slower business growth than males.

According to research by Marlow and McAdam (2013), women-owned firms are generally smaller, which could contribute to the gender gap observed in firm growth. It is suggested that women often start small businesses to support their families and generate additional income without a primary intention to grow these firms actively. Klapper and Parker (2011) suggest that women are often more motivated by the benefits of entrepreneurship, such as flexibility and autonomy, rather than a primary focus on growing their firms.

On the other hand, a study by Dohmen *et al.* (2011) indicates that women tend to be more risk-averse, which may limit their investment level and constrain their businesses' growth potential. This risk aversion can play a role in the differences observed in the growth trajectories of male-owned and female-owned firms. Moreover, Klapper and Parker (2011), maintain that female entrepreneurs tend to be more prevalent in retail, sales, and services, while male entrepreneurs are more likely to start businesses in the manufacturing industry. Various factors, including gender-specific interests, skills, and market opportunities, may influence this industry preference. Furthermore, research by Kepler and Shane (2007) and Fairlie and Rob (2009) suggests that men generally have higher levels of education and more extensive prior experience in business, industry, and work compared to women. These differences in educational and experiential backgrounds may contribute to variations in entrepreneurial success and performance between genders. Women-owned firms' financial growth is strongly influenced by specific human capabilities such as education, managerial experience, and team leadership (Costin *et al.*, 2021).

In recent years, there has been a shift towards greater gender parity regarding education and business skills among entrepreneurs, regardless of gender differences. Peters *et al.* (2014) suggest that females have attained similar education and business acumen levels as their male counterparts. The authors found no significant differences between gender, education, and

growth, indicating that other factors beyond gender may be more influential in explaining differences in entrepreneurial growth. Allison *et al.* (2021) highlight that female-owned firms often employ educated and skilled employees, leading to higher labour costs. This finding suggests that female entrepreneurs value the quality and expertise of their workforce, which can contribute to higher operational expenses.

Though there is evidence that findings concerning gender and firm growth are inconsistent (Neneh *et al.*, 2016), some studies suggest that gender may play a role in firm growth. Others find that the relationship depends on firm age, country, and region. Belitski and Desai (2021) highlight that gender can contribute to firm growth, but contextual factors influence its impact. The literature on the relationship between gender and firm growth in developed countries differs. In a study by Nichter and Goldmark (2009), there was no significant relationship between gender and firm growth. However, it is worth noting that other studies, such as the one conducted by Khan and Vieito (2013), have shown that there can be a positive relationship between female CEOs and firm performance. Their findings suggest that firms led by female CEOs may experience improved performance compared to those led by male CEOs. Female-owned firms in emerging economies tend to be less innovative and productive, limiting their ability to benefit from foreign direct investment spillovers (Bournakis & Mei, 2023). However, board gender diversity is associated with lower firm-level climate change exposure globally (Trinh *et al.*, 2023). Nyakudya, Mickiewicz and Theodorakopoulos (2024) found that individual financial and human capital resources have a weaker positive effect on growth aspirations for female entrepreneurs than males, while social knowledge and role models have a stronger positive impact. Živković *et al.* (2024) observed that women-led companies in Serbia's machines and equipment sector show higher adoption of digital technologies, more optimistic growth visions, and stronger gender equality practices. However, gender disparities persist in economic development. Octaviyani and Endang (2024) reported mixed effects of gender-specific factors on Indonesia's economic growth, with male and female education levels having a significant negative impact. The reviewed contrasting findings highlight the complexity of the gender-firm growth relationship. Therefore, hypotheses 1d and 2d were developed as follows:

Hypothesis 1d: *Gender moderates the relationship between entrepreneurial orientation and small firm growth*

Hypothesis 2d: *Gender moderates the relationship between human capital and small firm growth*

2.13. THEORETICAL FRAMEWORK

The first framework was based on the Penrose (1959) growth theory of companies. This theory emphasises that internal resources, capabilities, and management decisions influence business growth. The authors believe that companies' growth could be improved by their existing resources and ability to use and expand them effectively. The second framework was developed by Wernerfelt (1984) and Barney (1991) to take a resource-based perspective of the company. RBV theory argues that a company's unique resources and capabilities determine its competitive advantage and growth potential. It highlights the importance of firm-specific resources, including human capital, as the main driving force for company growth. The third framework adopted in the study includes the concept of entrepreneurial orientation based on Lumpkin and Dess's fundamental work in 1996. This framework suggests that strong EO companies are more likely to be involved in growth-promoting and performance-enhancing activities. The latter framework is based on Becker's concept of human capital (1964). Human capital theory emphasises the role of individual knowledge, skills and experience as valuable assets that contribute to firm performance and growth. It believes that investments in human capital, such as education, training, and expertise, can improve the company's innovation, adaptation, and sustainable growth potential. By integrating these theoretical frameworks, the study aims to understand the factors influencing SMEs' growth comprehensively.

2.13.1. Firm Growth

This study used two critical theoretical frameworks to examine firm growth: Penrose's theory of firm growth (1959) and Wernerfelt's RBV (1984). Employing these perspectives, it examined how firm-specific resources and capabilities, as outlined in the theory of firm growth and the RBV, influence firm growth. This approach provides valuable insights into the factors driving firm growth.

The modern RBV of strategic management has evolved from the initial work initiated by Penrose (1959). Since then, the RBV has been widely adopted as a theoretical framework in various management literature. Scholars and researchers have employed the RBV to examine and understand the dynamics of firms in numerous contexts (Rugman & Verbeke, 2004; Lockett *et al.*, 2007; Foss *et al.*, 2008; Wiklund *et al.*, 2009; Kraaijenbrink *et al.*, 2010;

McKelvie & Wiklund, 2010; Nason *et al.*, 2012; Lockett & Wild, 2014; Ferreira *et al.*, 2016; Nason & Wiklund, 2018; Lopes *et al.*, 2021).

Wernerfelt (1984) further expanded on Penrose's ideas and developed the RBV, which offers a theoretical framework for examining how firm-specific resources and capabilities contribute to a firm's competitive advantage and growth. The RBV emphasises the strategic significance of unique and valuable resources possessed by a firm in driving its long-term growth and sustained competitive advantage. By building upon Penrose's foundational work and integrating the insights of the RBV, researchers have been able to delve deeper into the underlying mechanisms and factors that influence firm growth. These theories have provided valuable frameworks for analysing the growth processes of firms and have shaped the theoretical landscape in the study of firm growth.

A firm's internal dynamics and characteristics are critical elements within the RBV (Ferreira *et al.*, 2011). In the contemporary RBV perspective, a firm is conceptualised as a collection of managerial and entrepreneurial resources. These resources encompass various tangible and intangible assets the firm possesses, which contribute to its competitive advantage and can be leveraged to enhance its overall performance (Lerner & Almor, 2002; Edelman *et al.*, 2008).

While Penrose's work (1959) primarily concentrated on industrial firms, it is to acknowledge that the contemporary economy comprises many service firms. As a result, it has become crucial to consider tangible and intangible resources when examining firm dynamics (Ferreira *et al.*, 2011). In today's business landscape, intangible resources such as intellectual property, brand reputation, human capital, and organisational knowledge play a vital role in shaping a firm's competitive advantage and growth potential. Firms also use social media to market their products (Stelzner, 2016) and open innovation to develop innovative products (Glassman & Walton, 2010).

Penrose's (1959) seminal work primarily focused on large firms, and this study extended her theory by applying it to SMEs. While Penrose's ideas have been widely influential, there is a lack of empirical studies that directly examine her work (Lockett *et al.*, 2007) in the context in which this study has been done. Thus, this study contributes to the existing body of literature on Penrose's theory by empirically investigating and validating, challenging, or expanding upon her ideas within the context of SMEs pre-COVID and post-COVID in South Africa.

2.13.2. Entrepreneurial Orientation

EO is a strategic approach that provides firms with a framework to make entrepreneurial decisions and undertake actions to attain a competitive advantage (Lomberg, Urbig, Stöckmann, Marino & Dickson, 2017).). While Lumpkin and Dess (1996) primarily view entrepreneurial orientation as a process that leads to new entry, this study suggests that EO represents an intangible resource of a firm that encourages firm growth. This study argues that the EO of small firm owners is characterised by their preference to engage in risk-taking, innovativeness, proactiveness, autonomy, and competitive aggressiveness to encourage their firms' growth.

Within entrepreneurship research, EO is necessary at the firm level (Covin & Lumpkin, 2011; Wales *et al.*, 2011; Anderson *et al.*, 2015). Covin and Lumpkin (2011, p. 863) emphasise that both conceptualisations of EO can produce strong theoretical and practical contributions. Scholars have made theoretical and empirical attempts to determine whether EO is best understood as a unidimensional or multidimensional phenomenon (Lomberg, 2017; Wales *et al.*, 2020). According to the research conducted by Wales *et al.* (2019), the main perspective regarding EO is the unidimensional view. The number of studies based on the unidimensional conceptualisation of EO outweighs those focusing on the multidimensional approach (White *et al.*, 2021). However, this study looks at EO as a multidimensional phenomenon that contributes to the existing knowledge and helps gain a deeper understanding of EO. It is worth noting that Covin and Slevin (1986, 1989) were instrumental in developing the unidimensional perspective of EO. The unidimensional perspective of EO asserts that it encompasses a fundamental and singular strategic approach involving a set of activities (Covin & Slevin, 1989). Building upon the work of Miller (1983) and Covin and Slevin (1989, 1991), Lumpkin and Dess (1996) expanded the understanding of EO by introducing a multidimensional perspective consisting of five dimensions.

Many studies support a positive association between EO and firm growth (Covin & Slevin, 1989; Lumpkin & Dess, 1996; Rauch *et al.*, 2009). In their meta-analysis of 51 empirical studies, Rauch *et al.* (2009) found a “moderately large” positive correlation between entrepreneurial orientation and firm performance. Building upon this research, Saeed *et al.* (2014) extensively examined 177 articles from 41 countries to explore the influence of national moderators on the relationship between EO and firm performance. Wales *et al.* (2013) analysed 158 journal articles in their study. These provided substantial insights into EO, mediating and moderating variables, and significant antecedents and outcomes associated with EO. This research can be seen as a natural progression from previous studies on EO, building upon

existing knowledge and expanding the understanding of its various dimensions and related factors.

2.13.3. Human Capital

Becker (1930–2014) revolutionised the field of economics with groundbreaking work known as the "economic approach to human behaviour", which he developed during his distinguished career. His research focused primarily on human capital concepts at the beginning. Becker (1964) revealed his research into human capital, which was driven by the growing emphasis on economic growth in the 1960s. According to Becker (1994, p. 11), human capital is “activities that affect future financial and psychological returns by increasing the resources of individuals”. This definition highlights the various manifestations of human capital investments, which include education, on-the-job training, health services, migration and the search for information on prices and incomes. University education is the most influential factor, especially in the context of the influence of on-the-job training on financial income, but it can affect both aspects (Becker, 1967).

The concept of human capital has been the subject of theoretical discourse for more than half a century, with Becker (1964) distinguishing between specific and general human capital. Early theorists, such as Becker (1964) and Schultz (1961), have found that human capital is cultivated through investments in education and training. Among the various investments in human capital, education, training, and experience are regarded as the most crucial (Becker, 1976; Coleman, 2007). These investments play a pivotal role in shaping the educational landscape for females, as changes in their educational opportunities are directly influenced by the costs and benefits associated with human capital investments. Education is widely recognised as a source of various benefits. Towards the late 1950s, there was a growing use of terms such as human capital or wealth to explain the impact of training and education on an economy (Teixeira, 2014).

In Africa, economists, scholars, and policymakers are deliberating on enhancing human capital (Shuaibu, 2016). Multiple studies indicate that Africa’s underperformance in terms of human capital can be attributed to insufficient investments in education and healthcare (Appleton & Teal, 1998; Dae-Bong, 2009; Kern, 2009; World Bank, 2010; Odia & Omofonmwan, 2010; Omojimito, 2011; Asaju *et al.*, 2013; Ndulu, 2014).

The research conducted by the World Bank (2010) and Asaju *et al.* (2013) indicates that human capital is crucial in fostering development. Recognising the impact of poverty, inequality, and

unemployment on the economy, the South African government implemented the National Development Plan (NDP) 20230 as a comprehensive strategy to address these challenges (Ngepah *et al.*, 2021). The National Development Plan recognises that investments in human capital are an essential instrument to mitigate inequality and enable individuals to participate in enterprise that generates income (National Planning Commission, 2011). High-quality, skilled and healthy workers improve overall productivity. One of the challenges facing South African businesses is the need for an educated workforce (Schwab, 2017).

Regarding firm growth, Becker (1994) argued that human capital is crucial for individual success and the overall economic growth of a nation. Firms can benefit from investing in human capital by recruiting and retaining skilled employees, fostering innovation and productivity, and gaining a competitive advantage. Becker's work highlighted the significance of human capital in shaping individual outcomes and its implications for economic development. Schultz (1961) emphasised that human capital is not limited to formal education but encompasses various forms of learning and skill acquisition, including on-the-job training, apprenticeships, and experiential learning. Recognising that firms play a vital role in facilitating the acquisition and development of human capital by providing training opportunities, creating a conducive learning environment, and rewarding employees' skill acquisition and performance is imperative.

2.14. GAPS AND CONTRADICTIONS

Based on the literature review provided, several areas highlight gaps or contradictions in the existing research, particularly in the context of South African SMEs:

2.14.1. Entrepreneurial Orientation

While Wales *et al.* (2013) suggest that the relationship between EO and firm growth is complex, Rubin and Callaghan's (2019) work adds depth to this conversation by addressing specific mediating factors illustrating how EO promotes technological adoption, enhancing firm and academic growth. However, Callaghan (2019) suggests that EO's influence is cyclical and deeply intertwined with innovation processes. This indicates that growth may depend on firms' abilities to innovate continuously. Finally, Callaghan (2017) stresses that EO helps firms manage uncertainty. Still, it also points out that this requires a dynamic interaction between EO and contextual factors—such as market conditions or available resources—highlighting the

need for further research into how these factors operate in South Africa's unique socio-economic landscape.

2.14.2. Human Capital and Innovation

Human capital is widely recognised as a key determinant of firm performance; however, findings in South Africa still need to be consistent, with studies reporting both positive and negative correlations (Mustafa & Stella, 2023). Focused research on the dynamics of human capital in South African SMEs is needed. While the importance of tailored training programs is noted, research often needs more specificity regarding the most effective types of training in the South African context. Callaghan's research significantly enhances the understanding of innovation. In his work, he emphasises the cyclical nature of innovation, arguing that continuous product and process innovations lead to sustained competitive advantages (Callaghan, 2019). He critiques traditional innovation models by highlighting the importance of risk-taking and entrepreneurial behaviour in navigating uncertainty (Callaghan, 2017). Additionally, he connects technological adoption with productivity and innovation outcomes (Rubin & Callaghan, 2019). Moreover, Callaghan and Boodhoo (2023) further underscore the relationship between wicked problems and innovation by examining the limitations of the scientific discovery process during crises like the COVID-19 pandemic. Their argument for a more structured approach to research management highlights the necessity for firms to innovate effectively in response to complex challenges. This perspective broadens the understanding of innovation as a continuous process and emphasises the relevance of addressing local contexts when implementing innovative strategies.

2.14.3. Motivation

Although motivation is critical, studies on how intrinsic and extrinsic motivations influence firm growth in South Africa are limited. Callaghan and Rubin (2020) explored the mediating role of individual motivations, finding that personality traits, including an openness to change, can significantly impact research productivity, suggesting that intrinsic motivations may enhance performance more effectively than extrinsic factors. Their study indicates that differences in motivational values can shape the relationship between technological adoption and productivity outcomes (Callaghan & Rubin, 2020). While Morris et al. (2006) found that extrinsic motivations significantly impact firm growth, the nuances of these findings in the South African context still need to be explored. Understanding the relationship of these

motivations could provide critical insights into fostering firm growth and performance in this unique socio-economic landscape.

2.14.4. Firm Age

Some studies find younger firms grow faster (Ferreira & Azevedo, 2008; Kosa *et al.*, 2018), while others suggest older firms may have advantages in survival and adaptability (Giannoulakis & Sakellaris, 2020). Further clarification on these dynamics in South African SMEs is needed. Research on firm age's implications in the African entrepreneurial landscape is sparse, limiting understanding of age-related impacts on South African SMEs. Younger firms may exhibit faster growth due to agility (Ferreira & Azevedo, 2008; Anderson & Eshima, 2013), while older firms may experience accelerated growth under certain conditions (Zhou & Gumbo, 2021). Firm age has yet to be consistently considered in studies examining EO and firm performance in Africa, indicating a need for localised research.

2.14.5. Industrial Sector

Research must sufficiently examine how the industrial sector moderates the relationships among EO, human capital, innovation, motivation and firm growth in South Africa. While studies indicate varying impacts of EO in manufacturing versus service sectors, focused research on these dynamics within South African industries still needs to be done.

2.14.6. Gender

Some studies suggest gender significantly influences firm growth (Neneh *et al.*, 2016), while others argue its effect depends on contextual factors like firm age and industry. This inconsistency necessitates more nuanced research. The unique challenges female entrepreneurs face in South Africa, mainly how this influences their firm growth compared to their male counterparts, have yet to be explored in depth.

2.14.7. Impact of External Factors

The role of socio-economic factors, such as economic instability and regulatory environments, on firm growth in South Africa is under-researched. Understanding how these factors interact with internal dynamics like EO and human capital could provide valuable insights. While the impact of the COVID-19 pandemic on SMEs has been documented, longitudinal studies

examining long-term recovery specific to South African SMEs still need to be included. This highlights a gap in understanding how SMEs adapt and thrive post-crisis.

2.15. CONNECTION TO THE RESEARCH QUESTIONS

- The extent to which EO and human capital influence small firm growth (Research Questions 1 and 2).
- The mediating role of innovation and motivation in these relationships (Research Questions 3, 4, 5, and 6).
- How firm age, industrial sector, and gender moderate the relationships between EO, human capital, and growth (Research Questions 7-12).

2.16. CONCLUSION

This literature review highlighted the complex factors influencing the growth of SMEs, including EO, human capital, innovation, motivation, age, industrial sectors and gender. Although EO consistently impacts growth positively, the results vary from industry to industry and require a more in-depth analysis of its dynamics in a South African context. Human capital is important for success, but its impact on growth varies depending on industry and skills and requires further research. In addition, innovation has enhanced the relationship between EO and human capital and growth, but the mechanisms involved must be further clarified. The role of motivation is recognised, but mixed results on internal and external factors show the need for research on its mediator effects, which currently need to be improved in the literature. The firm's age is contradictory, as young companies tend to grow faster.

In contrast, older ones have higher survival rates, indicating that it is necessary to examine how age balances these relationships. The impact of the industrial sector on performance is well documented in South Africa, but the role of gender is not adequately explored, and conflicting results suggest that there is a gap in understanding the unique challenges faced by female entrepreneurs. The literature revealed important gaps, especially in context-specific research and inconsistencies in motivation, innovation, company age, the industrial sector and gender impact. This study seeks to address the identified gaps, improve understanding of the growth of South African SMEs and provide valuable insights to entrepreneurs, policymakers, and researchers. The following chapter explains and discusses the methods used in the study.

CHAPTER 3: RESEARCH METHODOLOGY

3.1. INTRODUCTION

Research is a structured and organised process of gathering, examining, and interpreting data to enhance understanding of a subject of interest (Leedy & Ormrod, 2012). This research study comprises two phases: Phase 1, which involves a systematic literature review, and Phase 2, which focuses on owner-manager-level analysis. Each phase necessitates unique research strategies, methods, and procedures. Therefore, this chapter aims to provide an overview of the methodology adopted in this study, with detailed discussions presented in Chapter 4 for Phase 1 and Chapter 5 for Phase 2.

The methodology serves as a roadmap for conducting the research, guiding the selection of data collection methods, analysis techniques, and overall research approach (Abdulai & Owusu-Ansah, 2014). Abutabenjeh and Jaradat (2018) explain that research methodology involves systematically resolving a problem through data collection techniques, interpreting the gathered data, and drawing conclusions. Various researchers have proposed different frameworks for determining a research methodology (Kagioglou *et al.*, 2000; Saunders *et al.*, 2007; Bryman, 2012; Saunders *et al.*, 2012; Creswell & Creswell, 2018; Saunders *et al.*, 2019). To simplify the methodology, this study uses the framework introduced by Saunders *et al.* (2019), which consists of six components: research philosophy, research approach, research methodological choice, research strategy, research time horizon, and research techniques and procedures.

Research philosophy involves formulating assumptions, knowledge, and the essence of research (Saunders *et al.*, 2007; Flick, 2011; Bryman, 2012; Saunders *et al.*, 2016). There are various research philosophies, such as positivism, critical realism, interpretivism, post-modernism, post-positivism and pragmatism, from which researchers can choose from. Positivism is a philosophy that emphasises verifiable facts and scientific observation (Bryman *et al.*, 2014). In positivism, researchers objectively approach issues without influencing the studied problem (Al-Ababneh, 2020). Its strengths include the ability to produce quantifiable data and facilitate hypothesis testing, making it particularly suitable for studies that identify cause-and-effect relationships. However, positivism can oversimplify complex social realities by ignoring the subjective experiences that shape human behaviour (Al-Ababneh, 2020). Interpretivism is a philosophy that emphasises understanding social phenomena through

subjective meanings and cultural interpretations (Bryman *et al.*, 2014). While this approach enhances understanding of individual experiences it often reduces generalizability because it focuses on specific contexts. Critical realism is a philosophy that outlines the need for empirical evidence and theoretical analysis to understand the complex things in the world (Saunders *et al.*, 2009). While it provides a more detailed understanding than positivism, it demands a lot of interpretive effort, which can make data collection and analysis more complicated. Postmodernism is a philosophical and cultural movement that questions traditional beliefs about truth, identity, and reality, emphasising the relativity of knowledge and rejecting absolute truths while embracing diversity, ambiguity, and the idea that meaning is constructed rather than inherent (Killam, 2013). However, this approach can lead to ambiguity in research outcomes, making it difficult to draw objective conclusions. Post-positivism acknowledges the limitations of positivism, recognising that knowledge is influenced by interpretation and context (Mertens & Wilson, 2012; Mertens, 2015). While it maintains scientific rigor, this approach can blur the distinction between objective and subjective analysis, which may lead to confusion in interpreting the data. Pragmatism is finding practical, real-life solutions (Tashakkori & Teddlie, 2003a; 2003b; Maarouf, 2019). It includes elements from positivism, interpretivism, or critical realism. While flexible and inclusive, this philosophy may need a cohesive theoretical framework, which could lead to consistent methodologies. Positivism was selected for this study because it aligns well with identifying measurable relationships between variables in organisational contexts. Positivism's structured approach allows for a clear focus on empirical data, which is crucial for testing quantitative research hypotheses.

Theory development involves determining the type of argument used in research (Al-Ababneh, 2020). Saunders *et al.* (2016) proposed two methods of research: deduction and induction. The deduction method begins with the pre-existing theory, formulates hypotheses based on the pre-existing theory, and then designs a research method to test the hypothesis (Silverman, 2013). On the other hand, inductive research develops theories based on empirical observations, moving from specific examples to general conclusions or patterns, and is not based on preconceived assumptions (Trochim & Donnelly, 2006). Saunders *et al.* (2007) classify methodological choices into single, multiple or mixed methods. The Mono method uses only qualitative or quantitative data collection and analysis approaches. Mixed or multi-methods are described by Creswell (2003), Mertens (2005), Flick (2011), and Saunders *et al.* (2019) as the process of combining qualitative and quantitative methods.

Saunders *et al.* (2007) described the research strategy focusing on how the researcher plans to conduct the study. The selection of a specific research strategy depends on the nature of the research questions, the availability of resources, and other contextual factors (Cooper & Schindler, 2011). These strategies include action research, which evaluates practices within a community (Locke *et al.*, 2013); case study, offers insights into individual cases (Silverman, 2013); grounded theory, involves inductive pattern development from collected data (May 2011; Flick, 2011); ethnography, observes cultural interactions (Bryman, 2012), archival research pertains to utilising existing materials (Flick, 2011), systematic review involves synthesising existing literature (Cooper & Schindler, 2014), experimental research establishes cause-and-effect relationships (Saunders *et al.*, 2016), and surveys pertaining to the gathering of data through questionnaires or interviews (Marsden & Wright, 2010; Bryman & Bell, 2011). Each strategy has a specific purpose, allowing researchers to effectively address their research questions and objectives.

Research time horizons refer to the timeframe for completing research (Saunders *et al.*, 2016). Research literature identified two main types: longitudinal and cross-sectional (Goddard & Melville, 2004; Bryman, 2012). Cross-cutting time horizons capture specific moments and provide images of phenomena (Flick, 2011). Long-term time horizons are related to data collection over a long time and are primarily helpful for studying change over time (Bryman, 2012). Data collection is collecting information relevant to the research objectives through various means, such as surveys, interviews, or observations. Analysis techniques include systematically analysing collected data to identify patterns, trends or relationships using statistical analysis or thematic coding for qualitative data. Collecting and analysing data ensures accuracy, reliability and validity throughout the research process, including data validation, cleaning and interpretation.

This Chapter provides an overview of the six components (research philosophy, approach to theory development, methodological choice, research strategy, time horizon, techniques, and procedures) used in this research study. It further emphasises the study's methodological limitations, validity and reliability concerns, and ethical considerations.

3.2. RESEARCH PHILOSOPHY

This study adopts the positivism philosophy. Burrell and Morgan (1979) describe positivism as a research philosophy that aims to understand and predict social phenomena by examining patterns and causal relationships among its elements. Positivism is an important philosophy in

organisational research (Boyacigiller & Adler, 1991; Guba & Lincoln, 1998; Usunier, 1998). The positivist philosophy, initially introduced by French philosopher Auguste Comte (1798-1857), establishes a research framework rooted in the scientific method of investigation. Comte (1856) proposed that based on empirical evidence, human behaviour should be understood through experimentation, observation, and reasoning, arguing that these methods provide the only valid approach for expanding knowledge and enhancing human understanding. Thus, the positivist philosophy aligns this research with the principles of empirical investigation and emphasises the importance of experience as a foundation for knowledge. Positivism is best suited for this study because it is characterised by its focus on seeking cause-and-effect relationships in nature (Guba & Lincoln, 1998). Positivism research can be viewed as a preferred worldview for interpreting observations of facts or measurable entities (Fadhel, 2002). Positivist philosophy aims to provide explanations and predictions based on quantifiable results (Bryman *et al.*, 2014).

Positivism is based on empirical evidence and can generate quantitative results to establish cause-effect relationships (Guba & Lincoln, 1998). However, there are limitations, such as the possible lack of subjective experience and the complexity of human behaviour, which may lead to an excessive simplification of social phenomena. To mitigate these limitations, the study ensured that the quantitative method was robust and comprehensive. These included using valid measurement instruments and providing sufficient and representative samples to improve the generalisation of the results. The study prioritised methodological rigour and transparency.

3.2.1. Research Paradigm

Žukauskas, Vveinhardt and Andriukaitienė (2018) established that researchers must clearly understand paradigms or worldviews, and the investigation of paradigms relies on those foundational elements (Alghamdi & Li, 2013). A paradigm reflects a researcher's perspective (Lincoln *et al.*, 2011). According to Kuhn (1962), it represents a researcher's fundamental beliefs. Guba and Lincoln (1994) define a paradigm as a set of core beliefs that guide the actions and investigations in research. Paradigms can be identified by their ontology, epistemology, methodology, and axiology, which are the key elements that characterise them (Lincoln & Guba, 1985; Guba, 1990;). These elements explain each paradigm's basic norms, values, assumptions and beliefs (Lincoln & Guba, 1985). Exploring these elements further can provide a better understanding of the chosen philosophy.

Ontology is a philosophical study of the fundamental nature of reality and existence (Scott & Usher, 2004; Bonache & Festing, 2020). It involves understanding entities' nature, properties and relationships (Kivunja & Kuyini, 2017). Ontology deals with what exists, what can be considered natural or fundamental, and how entities and concepts are classified. By studying ontology, the aim is better to understand the world's nature and its contents. On the other hand, epistemology refers to the nature of knowledge and addresses questions such as knowledge acquisition, the characteristics of truth and reality, and the communication of knowledge with others (Lincoln & Gada, 1985; Cohen *et al.*, 2007). It includes the study of the nature, source, and limitations of knowledge, as well as the methodology and the validation and dissemination of knowledge. Epistemology explores the forms and processes through which individuals acquire knowledge and how knowledge is shared and transmitted among humans (Kivunja & Kuyini, 2017).

The methodology of the positivist paradigm is quantitative and scientific, emphasising systematic observation, experimentation, and the use of statistical analysis and aims to uncover general laws and causal relationships through controlled and replicable methods (Creswell, 2003; Mackenzie & Knipe, 2006; Della Porta & Keating, 2008; Kivunja & Kuyini, 2017; Hotho *et al.*, 2018). Quantitative methods provide a foundation for this study to precisely describe the parameters and coefficients in the collected, analysed, and interpreted data. Applying quantitative methods aims to understand the relationships embedded within the data.

Axiologically, the positivist paradigm values beneficence (Kivunja & Kuyini, 2017). Within the positivist paradigm, beneficence is highly valued, prioritising the welfare and well-being of individuals and society (Killam, 2013). The aim is to enhance human conditions and address societal needs through knowledge generation. This involves maximising positive outcomes for various stakeholders, including research participants, while minimising potential risks. Adhering to the principle of beneficence ensures ethical commitment, where proactive measures are incorporated to protect research participants and ensure that benefits outweigh possible harm (Martens, 2015).

3.2.2. Approach to theory development

Inductive reasoning, characterised by its bottom-up approach, is advantageous in generating new theories directly from empirical observations (Saunders *et al.*, 2016). However, this approach also requires researchers to suspend their personal beliefs entirely, which can be challenging and may introduce subjective interpretations (Bryman & Bell, 2011). In contrast,

deductive reasoning follows a top-down approach, starting with general principles or theories and testing them through empirical observation. This approach offers the advantage of providing clear guidance and structure to the research process, as hypotheses are formulated based on existing theories (Al-Ababneh, 2020). By systematically testing these hypotheses, researchers can evaluate the validity of established theories and contribute to accumulating empirical evidence in their respective fields (Blaikie & Priest, 2019).

In addition, deductive research is suitable for research, and this study, in which many participants participate, uses standardised data collection methods such as structured questionnaires (Saunders *et al.*, 2016). This is consistent with quantitative research methodologies, which often prioritise objectivity and generality. However, deductive research has limitations, including reliance on existing theories that can restrict researchers' ability to study new concepts and phenomena (Saunders *et al.*, 2009). In addition, the rigidity of deduction reasoning can ignore the nuances and complexity of phenomena in the real world that do not fit appropriately into existing theoretical frameworks (Silverman, 2013).

Several factors justify the choice of inductive reasoning in this study. The quantitative nature of research, including large sample sizes and structured questionnaires, is consistent with the systematic approach provided by deduction reasoning. Furthermore, the research tested hypotheses derived from existing theories and, therefore, required a deductive approach to verify the validity and reliability of the findings. Both deductive and inductive methods have unique advantages and challenges. Still, it was considered that the deductive method is the most suitable for the specific purposes and methodologies of the study.

3.2.3. Methodological Choice

Based on the characteristics described by Flick (2011), this study opted for the mono method, using quantitative measures to address the research problem. Quantitative research relies on measurable data and statistical analysis, reducing researcher bias. It allows for replication and standardisation, enhancing the reliability of results (Creswell, 2003; Saunders *et al.*, 2019). Quantitative research often involves gathering data from many participants or respondents and using standardised, structured questions with predetermined responses (Hair *et al.*, 2013). Quantitative research helps the analysis of large sample sizes, improving the statistical power and generalisability of the findings (du Plooy-Cilliers & Cronje, 2014). The findings obtained from quantitative research are used to explain, predict, or validate theories, allowing for the identification of patterns, trends, and correlations in the data, leading to a deeper understanding

of the research topic. The quantitative approach assumes that reality should be investigated objectively, necessitating a certain degree of separation between the researcher and the subject of investigation (Kivunja & Kuyini, 2017). By maintaining a certain distance between the researcher and the respondent, the study aims to enhance the reliability and validity of the findings. This is discussed further in the reliability and validity section of this study.

3.2.4. Research Strategy

The study employs distinct research strategies to address specific objectives and questions across its two phases. Chapter 4 (Phase 1: Systematic Literature Review and Chapter 5 (Phase 3: Owner-manager-level analysis using a questionnaire for data collection). Phase 1 used a systematic literature review to synthesise existing knowledge, identify gaps in the literature, and establish a theoretical framework for the research. This method was chosen for its rigour and comprehensive nature, allowing for an in-depth analysis of prior studies. In Phase 2, a questionnaire was administered to owner-managers to gather primary data directly related to their experiences and perspectives. This method was selected for its efficiency in collecting quantitative data from a larger sample, enabling the researcher to identify patterns and correlations that can inform practical implications. These strategies are discussed in more detail in the subsequent chapters, Chapters 4 and 5.

3.2.5. Time Horizon

The study chose a cross-sectional time horizon (Malhotra, 2010). The cross-sectional time horizon enables data to be collected simultaneously and provides a population snapshot. The time horizon contributed to consolidating data collection into a single point, allowing the study and comparison of a single variable (growth of firms) in multiple subgroups (human capital, entrepreneurial orientation, motivation and innovation) (Cummings, 2018). Usually, cross-sectional studies are compiled using survey questionnaires with human participants as the main analysis unit. Although mainly quantitative, cross-sectional design can include statistical conclusions or subgroup comparisons to describe or compare population characteristics through various measures (Cummings, 2018).

3.2.6. Data collection, analysis techniques, and procedures

This section specifically addresses the selection of the target population, sampling, data collection and analysis procedures for this study. However, it should be noted that the data

collection, analysis techniques and procedures used in the two phases of this study are different and will be discussed in more detail in the subsequent chapters, Chapters 4 and 5.

3.2.6.1. Population and Sampling

The empirical study's sampling process followed the specific steps recommended by Malhotra (2007). The process involved identifying the target population, finding the sampling frame, selecting the sampling method, determining the sample size, and validating the sample.

- **Target Population**

The population in a study refers to the entire group of interest (Kadam & Bhalerao, 2010; Sekaran & Bougie, 2016). Various target populations are used in the two phases of this study.

In Phase 1, the systematic literature review focused on scholarly articles concerning firm growth published between 2000 and 2020, specifically during the pre-COVID-19 period. This time frame was selected to capture the dynamics of firm growth before the pandemic, providing a clear understanding of established trends. The study used inclusion and exclusion criteria from the research questions to ensure transparency and replicability in the systematic literature review. These criteria are essential for selecting research related to the review but exclude research that does not meet the requirements set out in Kitchenham and Charters (2007). However, grey literature was excluded to maintain focus on peer-reviewed articles, consistent with the approach taken by Calabrò *et al.* (2019).

Phase 2 targeted SMEs across all manufacturing and services sectors in South Africa. The number of SMEs was estimated using data from the Quarterly Labour Force Survey (QLFS) and the Small Enterprise Development Agency (SEDA), which regularly collects data about SMEs. As of the latest update in 2023, the number of SMEs in South Africa increased from 2,363,513 in Q3 of 2020 to 2,683,602 in Q3 of 2022, highlighting the growth and relevance of SMEs within the economic landscape. The targeted population of SMEs was defined based on specific characteristics relevant to the research objectives. Although the goal was to include a wide range of SMEs, practical limitations like time, resources, and feasibility required a more focused sample selection. This decision highlights the challenges of including an entire population in research while trying to produce valid and reliable results, which are discussed in more detail in Chapters 4 and 5.

- **Sampling**

Sampling Frame

A sampling frame is a database or list containing individuals or entities that constitute the target population, serving as the basis for a sample (Acharya *et al.*, 2013). The sampling frame serves as a reference or source from which the researcher can draw a representative subset of the population for the study (Kadam & Bhalerao, 2010). Various sampling frames are used in the three phases of the study. Phase 1 reviewed ISI Web of Science and Scopus articles on firm growth, human capital and innovation in SMEs. The sampling frame for Phase 2 was SME owner-managed firms established before and after 27 March 2020 in South Africa. These are discussed in more detail in Chapters 4 and 5.

Sampling technique(s)

Sampling refers to choosing a sample for a research study (Uprichard, 2013; Bryman *et al.*, 2014; Latham, 2014). Sampling designs are broadly categorised into two main types: probability and non-probability sampling. Probability sampling is a research method wherein a sample is selected from a larger population that affords every individual in the population a known and non-zero chance of being included in the sample (Bryman *et al.*, 2014). On the other hand, non-probability sampling encompasses methods in which the probability of any individual being selected for the sample is either unknown or intentionally unequal (Latham, 2014). In non-probability sampling, researchers do not have a basis for calculating the likelihood of any specific element being included in the sample (Uprichard, 2013). In Phase 2, non-probability sampling was used.

Probability Sampling Methods

Sampling methods are essential in research as they determine how participants or elements are selected from a population (Csikszentmihalyi & Larson, 2014). Various sampling methods are used in the two phases of the study. Phase 1's sampling method is based on the inclusion and exclusion criteria. Phase 2 uses convenience sampling. Convenience sampling involves selecting participants based on their easy accessibility or proximity to the researcher rather than through random selection (Zikmund, 2010). Although convenience sampling is often criticised for introducing bias and limiting the generalizability of findings, it was chosen for several reasons in this study. First, convenience sampling made data collection more efficient by allowing the researcher to gather data from willing and able participants.

It was important to acknowledge the limitations of convenience sampling. The main concern was that the validity of the results could be affected if the sample did not represent the larger population. To address this, several techniques were used: efforts were made to recruit participants from diverse backgrounds within the available population to enhance diversity; data were collected using various methods to validate findings and reduce sample biases; and the results were analysed in the context of the study, considering how the sampling method might have influenced the conclusions. By addressing these limitations and implementing these measures, the study aimed to maintain rigour while recognising the inherent constraints of the sampling approach. Chapters 4 and 5 discuss these methods in more detail.

Sample Size

The sample size must be carefully chosen to ensure valid and broadly applicable conclusions (Singh & Masuku, 2014). According to Macfarlane (2003), calculating the sample size for research projects is a crucial component of a study protocol when submitting it to ethical committees, research funding bodies, and specific peer-reviewed journals. Sample size determination is selecting the number of observations for a sample (Singh & Masuku, 2014). It is a crucial aspect of studies aiming to conclude a population from a sample. The chosen sample size typically considers data collection cost and statistical power. The sample size for Phase 1 was 202 articles. The study included a sample size of 492 SME owner-managers from various sectors in South Africa for Phase 2. This sample size was based on recommendations from existing literature, highlighting the need for a strong participant pool to ensure reliable results in partial least squares structural equation modeling (PLS-SEM) (Hair et al., 2021). While PLS-SEM can operate effectively with smaller samples, larger sizes enhance estimation precision and generalisability (Hair *et al.*, 2011, 2021). While PLS-SEM can work effectively with smaller samples, larger sizes improve estimation precision and generalizability (Hair et al., 2011, 2021). The sample included participants from diverse industries, such as manufacturing, retail, and services, which enriched the study's findings. Participants were also selected from various regions within South Africa to capture regional differences in SME operations. This strategic sampling approach ensured that the sample was representative of the SME landscape, enabling a thorough analysis of the relationships between human capital, innovation, and firm growth. Despite the target of 500 owner-managers, the final sample from fully completed questionnaires was 492 deemed adequate, adhering to established guidelines for effective sample size in PLS-SEM studies (Kline, 2016; Comrey & Lee, 2013). This decision was informed by considerations of practicality, time, and resource constraints while

still aiming to achieve a sample that could yield meaningful insights into the research questions. These are discussed further in Chapters 4 and 5.

3.2.7. Data Collection

The data collection can be thorough, analytical, and sometimes challenging (du Plooy-Cilliers & Cronje, 2014). Primary and secondary methods can be used to collect data (Bryman *et al.*, 2014). Primary data collection is based on raw participant information. Secondary data collection is based on information from publicly available data that can be accessed from the internet, government and non-government sources and documents (Bryman *et al.*, 2014). Phase 1 of this study makes use of the five general steps of conducting a systematic literature review as utilised by Denyer and Tranfield (2009), Briner and Denyer (2012), Yang *et al.* (2017), and Williams *et al.* (2021). Phase 2 of the study is based on primary data collected through a structured questionnaire. Structured questionnaires are administered through various means, like paper, online, or interviews, to gather data from a sample of participants (Saunders *et al.*, 2016). Chapters 4 and 5 discuss the data collection methods applied in this study in more detail.

3.2.8. Data Analysis

Data analysis is a cyclic and interactive procedure of manipulating and comprehending numerical information to derive meaning (Mertens *et al.*, 2017). It involves addressing research questions, testing hypotheses, or exploring insights that can be inductively inferred from the data (Mertens *et al.*, 2017). In a quantitative study, data analysis should be performed using appropriate statistical software and techniques relevant to the research design and the collected data type (Awang, 2012). The goal is to draw meaningful conclusions and insights from the data that can address the research questions and hypotheses. Data analysis techniques can be adopted, including descriptive and inferential statistics (Babbie & Mouton, 2010). Descriptive statistics can summarise and describe the main features of the collected data, and inferential statistics enable researchers to draw conclusions and make predictions about the larger population based on the survey sample (Babbie & Mouton, 2010).

In Phase 1, the study used descriptive statistics, bibliometric analysis, and content analysis to review the literature. Descriptive statistics offered an overview of publication trends, while bibliometric analysis, using VOSviewer software, allowed for a systematic examination of bibliographic data to identify publications and research trends. Content analysis then examined the articles identified through bibliographic coupling, highlighting three main themes that addressed the research questions regarding the impact of human capital and innovation on

small firm growth before COVID-19. This approach effectively tackled challenges like data fragmentation (Di Vaio *et al.*, 2020; Hurmelinna-Laukkanen & Yang, 2022).

Phase 2 uses descriptive statistics to describe the essential characteristics of the study's data, and Smart PLS (version 3.2.9) was used for inferential statistics using partial least squares structural equation modelling (PLS-SEM) (Ringle *et al.*, 2005; Hair *et al.*, 2017). These are discussed further in Chapters 4 and 5.

3.2.9. Instrumentation

Instrumentation involves developing and utilising research tools to collect study data (Salkind, 2010). The most used instruments for data collection are questionnaires, interviews, and observations (Salkind, 2010; Bryman *et al.*, 2014). To address researcher bias, the study used a rigorous approach by conducting a systematic literature review in Phase 1 and using a structured questionnaire in Phase 2. The research process was transparently documented, ensuring that findings were based on objective data analysis and minimising the potential for subjective interpretation.

In Phase 1, the systematic literature review was conducted, guided by a review protocol to ensure rigour and transparency while minimising bias (Hiebl, 2021). The process adhered to the five general steps that require documenting each review stage to enhance methodological integrity outlined by Tranfield *et al.* (2003).

In Phase 2, the questionnaire was developed based on the study's research questions and informed by a thorough review of existing literature on firm growth, entrepreneurial orientation, human capital, innovation and motivation (Krosnick, 2018). After the initial development of the questionnaire, a pilot study was conducted to gather feedback, resulting in revisions that refined the questionnaire better to capture the intended constructs (Nardi, 2018). Challenges encountered, such as ensuring clarity in questions and achieving a representative sample, were addressed through iterative revisions and pre-testing of the instrument. The final self-administered online survey included a cover letter explaining the research purpose, ensuring respondent anonymity, and providing contact details for further questions. The screening question confirmed that respondents were owner-managers, followed by six sections covering demographics, entrepreneurial orientation, human capital, innovation, motivation, and firm growth. These are discussed further in Chapters 4 and 5.

3.3. RELIABILITY AND VALIDITY

It is essential to consider both the reliability and validity of the data. Chapter 5, which collected primary data, discussed how the validity and reliability of the study were maintained. The researcher took some important steps to ensure the application of validity and reliability of the study. First, the methodology section detailed the methods used to establish internal and external validity, face validity, content validity, and construct validity. Lincoln and Guba (1981) argued that positivist researchers have established criteria that align with the positivist perspective's ontological and epistemological assumptions. To address researcher bias, the study applied the Lincoln and Guba (1981) reliability and validity framework, focusing on internal and external validity, reliability, and objectivity to enhance the rigour of the research by systematically evaluating various types of validity—such as face, content, construct, convergent, and discriminant validity—the researcher ensured that the instruments accurately measured the intended constructs, thereby improving the quality and impact of the empirical data and findings. Reliability refers to the extent to which the measures in the instrument are error-free, consistent, and repeatable (Thanasegaran, 2009). According to Creswell (2014), validity in research refers to the quality of the research process and the accuracy of the obtained results. It is crucial to ensure that the instruments used in the study can accurately measure the intended data (Heale & Twycross, 2015).

There are different aspects of validity, including external, internal, face, content, construct, convergent, and discriminate validity. Detailed contextual descriptions of the sample and setting were provided to support external validity, allowing inferences to be drawn from the findings and applied to other settings and populations (Cooper & Schinder, 2014). To enhance internal validity, the study ensured that relationships between variables were accurately measured and established within the specific context (Creswell, 2014). The researcher ensured face validity by conducting preliminary reviews of each item in the data collection instruments to confirm that they appeared relevant and appropriate representations of the measured constructs (Bolarinwa, 2015; Singh, 2017). Content validity was established by ensuring the questionnaire covered all essential items and components relevant to the constructs of interest, thereby accurately measuring the intended traits (Maroof, 2012; Heale & Twycross, 2015). Construct validity refers to how a measurement instrument, such as a test or questionnaire, accurately assesses the specific trait, attribute, or theoretical construct designed to measure (Thanasegaran, 2009). It includes convergent and discriminate validity. To assess construct validity, the study evaluated both convergent and discriminant validity. Convergent validity is the association between multiple measurement scales created to determine a common

underlying construct (Hair *et al.*, 2012). This was demonstrated by associating multiple measurement scales with the same underlying constructs. Discriminant validity assesses how different constructs are not correlated, explaining that the instrument is distinct from others (Hair *et al.*, 2012; Sarstedt & Cheah, 2019). It was established by ensuring that the constructs were not correlated, highlighting the uniqueness of the measurement instruments. Second, the researcher described the questionnaire, explaining how items were developed to ensure face and content validity and pilot testing results. Third, the results section reported statistical analyses assessing convergent and discriminant validity, while the discussion reflected on the implications of these evaluations.

3.4. ETHICAL CONSIDERATIONS

In all academic fields, maintaining ethical standards of research is important (Blaxter 2010). Research must be carried out responsibly and ethically, and research ethics should be an essential framework for achieving this objective (National Committee on Social Science and Human Research Ethics, 2022). According to Aish (2016), ethics is the moral principles and values that define appropriate behaviour standards for professionals and groups and play an important role in designing research activities. Research ethics is commended by researchers and research institutions and is extended to other individuals involved in research, who should adhere to ethical standards and guidelines (Annsah, 2016). This study found that recognising all sources of information was an active practice to prevent plagiarism, safeguard intellectual property rights, and preserve the integrity of research processes (Blaxter 2010). This study follows the steps in Phases 1 and 2 in upholding ethical best practices.

Phase 1

- No clearance was required as Phase 1 involved secondary data.

Phase 2

- Obtained ethical clearance from the University of the Witwatersrand. The application process proceeded within a manageable timeframe, during which the necessary documentation was submitted to the Research Ethics Committee for their review and approval. The University of the Witwatersrand awarded ethical clearance for this study and issued ethical clearance with the identification number H21/10/20 to verify this study. (See Appendix D).

- The explanatory statement provided to participants included the contact details of the research supervisor and the researcher to address any concerns or queries during the research process.
- Participation in the study was voluntary, and individuals were only involved after providing full consent.
- Participants were informed that through participating in this study, no harm would result from their involvement.
- No form of coercion or payment was offered to influence participation.
- Participants' confidentiality was strictly maintained, and no information they did not wish to be disclosed was disclosed.
- Participants remained anonymous.
- Participants were assured that all data collected would be securely stored.

3.5. LIMITATIONS

In Phase 1, while systematic literature reviews provide valuable insights, they also have significant limitations. Cook *et al.* (1997) identify two key concerns: the quality and quantity of selected studies and the rigour of the review process. This SLR focused specifically on pre-COVID-19 literature regarding the relationships between human capital, innovation, and SME growth, excluding post-COVID-19 studies. While this choice streamlined the review, it may have led to a less comprehensive understanding of the evolving landscape and could have overlooked emerging trends. Additionally, excluding studies published before 2000 further narrowed the scope. Furthermore, the SLR relied on databases like Web of Science (WoS) and Scopus for data extraction, which may have also limited the breadth of the literature included. Although this approach aligns with conventional best practices, future research could benefit from incorporating a more comprehensive range of databases, such as ProQuest, Science Direct, Google Scholar, and PubMed, to enhance the findings.

In Phase 2, one methodological limitation of cross-sectional studies is that they provide only a snapshot of data at a single point in time. This restricts explaining changes or trends over longer periods (Solem, 2015). This design can be affected by selection bias, recall bias, and difficulties in establishing timelines, which may impact the sample's representativeness (Wang & Cheng, 2020). The researcher took several steps to address the limitations of the cross-sectional research design. A larger and more diverse sample was used to reduce selection bias and improve representativeness. Strategies were implemented to minimise recall bias, such as using

objective measures or data sources and enhancing the accuracy of the information gathered. Additionally, the researcher clearly defined timelines and controlled for confusing factors to clarify the relationships between variables and improve the reliability of the findings (Wang & Cheng, 2020).

3.6. CONCLUSION

Finally, the following section provides an overview of the methodology used in this study. The research paradigm was established with a positive perspective. The methodology chapter provided a basis for discussing the two stages discussed in Chapters 4 and 5. Considerations of research approach, design, population and sample were examined. A detailed explanation of the data collection and analysis procedures, including the approval and distribution of the questionnaire, has been provided. This chapter emphasised the importance of ensuring the reliability and validity of the study. Ethics were addressed, and methodological limitations were recognised in the study.

CHAPTER 4: PHASE 1 – METHODOLOGY AND FINDINGS

4.1. INTRODUCTION

Phase 1 of this study used a systematic literature review approach. A systematic literature review is a widely recognised research approach used to comprehensively review and synthesise existing literature on a specific topic or research question (Thomé *et al.*, 2016; Xiao & Watson, 2019). Tranfield *et al.* (2003); Denyer and Neely (2004); Pittaway *et al.* (2004); Denyer and Tranfield (2009); Macpherson and Jones (2010); Pickering and Byrne (2014); Rowe (2014); Cacciotti and Hayton (2015); Snyder (2019); Ceipek *et al.* (2019); Hiebl (2021); Simsek *et al.* (2021). Thomas and Tee (2022) have provided numerous in-depth discussions on systematic literature reviews. According to Denyer and Tranfield (2009), a systematic review refers to a particular approach that involves finding relevant studies, assessing and analysing their contributions, synthesising the data, and presenting the evidence to enable reasonably definitive conclusions regarding the current state of knowledge. As Williams *et al.* (2021) state, a systematic literature review offers a thorough and all-encompassing examination of the existing literature about a specific research question.

According to Breslin *et al.* (2020), literature reviews have a crucial role in influencing the formation and progression of theory within a particular field of study. Tranfield *et al.* (2003), Rowe (2014), and Snyder (2019) have made notable advancements in improving the overall rigour of literature review methodologies. An SLR involves a rigorous and systematic approach to identifying, selecting, evaluating, and synthesising existing literature relevant to a research question or topic (Ritz *et al.*, 2016). It follows a predefined protocol and criteria for literature search, inclusion/exclusion of studies, data extraction, and data analysis. The goal is to provide a comprehensive and unbiased summary of the existing evidence on a particular subject (Snyder, 2019). This research approach was selected for Phase 1 of the study because it provides a comprehensive summary and critical analysis of the existing evidence, identifies research gaps, and makes informed conclusions or recommendations for further research or practice (Ritz *et al.*, 2016).

Therefore, this chapter outlines the data collection process, data analysis and findings of the systematic literature review.

4.2. METHODOLOGY

4.2.1. Development And Validation Of The Review Protocol

The review protocol in systematic reviews serves as a pre-determined plan that outlines the specific approaches and strategies used to conduct the review. The review protocol is of utmost importance in comprehensive systematic reviews. This reporting requirement is emphasised by Brereton *et al.* (2007), Okoli and Schabram (2010), Petticrew and Roberts (2012), Okoli (2015), Niazi (2015), Booth *et al.* (2016), Obaidi and Klünder (2021), Williams *et al.* (2021), and Fan *et al.* (2022). The review protocol ensures the review process is structured, rigorous, and transparent, enhancing the findings' reliability and validity (Kitchenham & Charters, 2007; Thomé *et al.*, 2016).

Hiebl (2021) mentions that systematic reviews have become the standard approach for evaluating research in the management field. The literature offers several processes for conducting a systematic literature review (Tranfield *et al.*, 2003; Briner & Denyer, 2012; Jones & Gatrell, 2014; Pickering & Byrne, 2014; Okoli, 2015; Yang *et al.*, 2017; Kraus, Breier & Dasí-Rodríguez, 2020; Chhabra *et al.*, 2021; Hurmelinna-Laukkanen & Yang, 2022). To reduce bias, maintain rigour, and ensure transparency, in this study, a review protocol is devised to document the process they follow in conducting the SLR. The five general steps used by Tranfield *et al.* (2003), Denyer and Tranfield (2009), Briner and Denyer (2012), Pickering and Byrne (2014), Yang *et al.* (2017), Williams *et al.* (2021) and Hurmelinna-Laukkanen and Yang (2022) are adopted as the data collection procedure in Phase 1 of this study.

These five stages are illustrated in Figure 4.1 below.

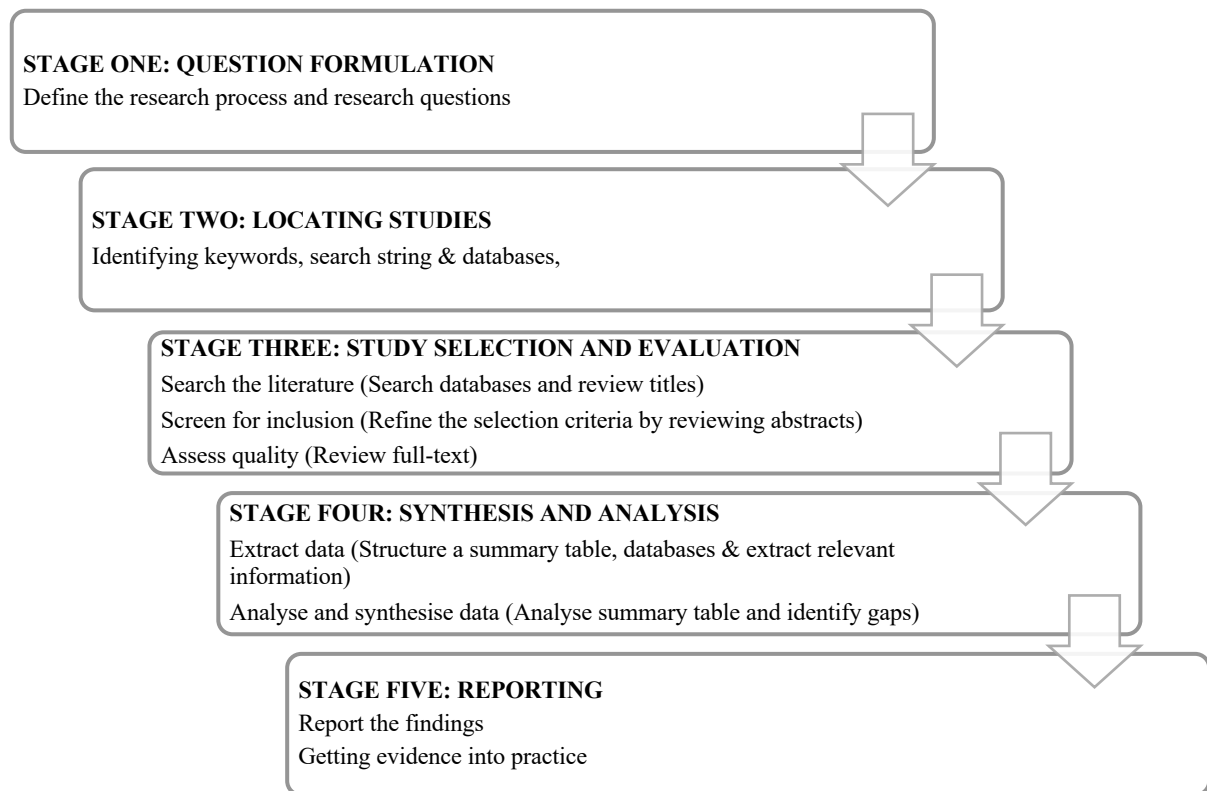


Figure 4.1: Systematic literature review process

Source: Adopted from Tranfield *et al.* (2003), Denyer and Tranfield (2009), Pickering and Byrne (2014), Yang *et al.* (2017), Williams *et al.* (2021) and Hurmelinna-Laukkanen and Yang (2022).

The following five phases explain the review protocol used in this study.

4.2.2. Stage One: Question Formulation

Literature reviews are considered research projects, so research questions should guide them. The research questions play a crucial role in shaping the focus of the literature review. Kitchenham and Charters (2007), Kitchenham (2012), and Garousi *et al.* (2016) highlight the importance of research questions in directing the literature review process. The data extraction, synthesis, and reporting methods should align with and be geared toward effectively addressing the research questions. The research questions are provided below. They seek to identify the influence of human capital and innovation on small firm growth before COVID-19.

- Does human capital influence small firm growth?
- What extent does innovation influence small firm growth?

4.2.3. Stage Two: Locating Studies

Stage two involves locating multiple studies guided by the research questions. Studies can be found by identifying the keywords, search terms, strings, and channels for literature searches.

4.2.3.1. *Keywords used for the search*

The research question(s) is crucial in generating relevant search terms for a systematic literature review (Tranfield *et al.*, 2003). By breaking down the research question into multiple themes or critical concepts, this study identified specific search terms that effectively captured the essence of the investigation (Kitchenham & Charters, 2007; Osterrieder *et al.*, 2020). The search terms were then used to retrieve relevant literature from databases and other sources. This study ensured that the literature found and analysed directly applied to the study by combining search terms with the relevant research questions. The keywords used in this study were firm growth, small firm growth, SME, human capital and innovation. These were found in the title, abstract or keywords of academic articles.

4.2.3.2. *Search Strings*

Search terms can generate a few documents quickly, and this may allow the researcher to adjust the search terms. Boolean operators can be used in many search engines. The proper use of Boolean “AND” and “OR” while creating search strings is crucial (Briner & Denyer, 2012; Beyer & Dangl, 2018; Dash *et al.*, 2018; Fink, 2019). “AND” is frequently used to link the key phrases, and “OR” is used to add synonyms (Xiao & Watson, 2019). Before manually removing irrelevant literature from the search results, the following search strings were used to find as many possibly relevant publications as were available:

“firm growth” OR “small firm growth” OR “SME” AND “human capital”

“firm growth” OR “small firm growth” OR “SME” AND “innovation”

“firm growth” OR “small firm growth” OR “SME” AND “human capital” AND “innovation”

4.2.3.3. *Channels for literature search*

Various channels can be used to search and identify relevant studies, such as backward searches, database searches, forward searches, and manual searches of individual journals (Xiao & Watson, 2019; Harari *et al.*, 2020). Using these different search methods enhances the comprehensiveness of the literature review, further ensuring that a broad range of relevant studies have been identified to inform the research in this study.

4.2.3.4. Database Searches

According to Pettitrew and Roberts (2006), Ferreras-Fernández *et al.* (2016) and Harari *et al.* (2020), electronic databases are the primary source of existing literature. Researchers often conduct comprehensive searches in electronic databases, such as PubMed, Scopus, or Web of Science, using relevant keywords and search terms (Harari *et al.*, 2020). This allows researchers to identify relevant articles and research studies related to their interests. The chosen database influences the breadth of a search; hence, a systematic literature review search should employ many databases because no database has the entire collection of published content (Bramer *et al.*, 2017; Harari *et al.*, 2020). For this study, searches were done using Scopus and Web of Science core collection to ensure comprehensiveness. This is similar to those of Grégoire, Corbett and McMullen (2011), Baier-Fuentes *et al.* (2019), Verma and Gustafsson (2020), Hurmelinna-Laukkanen and Yang (2022), and Mariani *et al.* (2023).

4.2.4. Stage Three: Study selection and evaluation

4.2.4.1. Selection criteria (inclusion and exclusion)

Defining inclusion and exclusion criteria is crucial in conducting a systematic review (Kitchenham & Charters, 2007). These criteria are guidelines for selecting relevant studies that align with the research question(s) and help exclude papers unrelated to the review's objectives (Garousi *et al.*, 2016). The inclusion and exclusion criteria should be derived from the research question(s) and be explicitly described to ensure transparency and replicability (Kitchenham & Charters, 2007). They should be designed to capture studies most relevant to the research topic while excluding those not meeting the predefined criteria. Clear and well-defined inclusion and exclusion criteria enable the researcher to streamline the literature search process and reduce the quantity of literature to a manageable level (Kitchenham & Charters, 2007; Okoli & Schabram, 2010).

To ensure a comprehensive search, it is essential to include grey literature sources such as books, conference proceedings, chapters, working papers, publications, and dissertations. Excluding specific sources of information could introduce bias in the publication selection process (Petticrew & Roberts, 2006; Kitchenham & Charters, 2007; Briner & Denyer, 2012). By incorporating a wide range of literature sources, researchers can minimise the risk of overlooking relevant studies and enhance the overall robustness of the systematic review. The exclusion of grey literature in this study presents a potential limitation. While this decision aligns with some existing research (Calabrò *et al.*, 2019), it is essential to acknowledge the

potential biases arising from such a choice. By excluding grey literature, the study may have missed critical contributions to the field, potentially limiting the comprehensiveness of the findings. However, the decision to exclude grey literature was made after careful consideration and can also be justified. Kraus *et al.* (2020) argue that there is an ongoing debate surrounding the inclusion of grey literature in systematic reviews. They highlight the varying opinions and considerations researchers must weigh when making the appropriate decision. While grey literature can reduce publication bias and increase comprehensiveness (Paez, 2017), its inclusion presents challenges such as maintaining methodological rigour, ensuring transparency, and managing the search process (Hoffecker, 2020; Phillips & Barker, 2021).

To maintain relevance to the business field, this study considered only articles included in the Academic Journal Guide of the Chartered Association of Business Schools (AJG, 2021). This approach aligns with the research conducted by Nguyen *et al.* (2018), Ott and Michailova (2018), and Creevey *et al.* (2022), who also utilised the AJG as a criterion for selecting relevant articles in their reviews. In this study, journal articles are narrowed down after three selection rounds. These are illustrated in Table 4.1 below.

Table 4.1 Selection criteria used in this study

Round	Inclusion	Exclusion
1	Publication Year: 2000 – 2020 Document Type: Journal Article OR Journal Article in Press Database: Web of Science and Scopus	Not in English
2	Full Text	Not Full Text
3	Published in a journal ranked 3, 4 and 4* in Academic Journal Guide of the Chartered Association of Business Schools (AJG, 2021)	

Source: Adapted from Hurmelinna-Laukkanen and Yang (2022)

4.2.4.2. Backward and forward searches

To complement the literature search, backwards and forward searches were conducted. Backward searching involves examining the reference lists of identified articles to find additional relevant studies that may have yet to be captured in the initial database search

(Webster & Watson, 2002; Xiao & Watson, 2019; Watson & Webster, 2020; Haddaway *et al.*, 2022). Finding these articles was made more accessible by using the list of references after the article.

Forward searching involves exploring articles cited by the identified studies (Webster & Watson, 2002; Xiao & Watson, 2019; Haddaway *et al.*, 2022). Forward searching of papers is possible with search engines like Google Scholar and the ISI Citation Index (Levy & Ellis, 2006; Gusenbauer & Haddaway, 2020). Google Scholar should not be used for a systematic literature review because it lists too many non-academic sources, and the algorithm shows results for the author based on previous searches and interactions (Gusenbauer & Haddaway, 2019). However, Google Scholar can help to find full texts of papers and discover grey literature and can also serve as an additional basis for cross-checks (Haddaway, 2015). Therefore, in this study, Google Scholar was used only as a basis for cross-checking and triangulating this research through forward searching.

Therefore, this study uses forward and backward searches for triangulation (Greenhalgh & Peacock, 2005). Additional studies missed through the initial search strategy were identified by incorporating forward and backwards searches. First, 128 articles were randomly selected from a larger pool of 1279 using a credible system called Zotero. This aimed to keep the sample manageable due to the substantial number of references in these papers. Secondly, Zotero was used to compare the reference lists of the 128 articles to identify those cited more than three times in separate papers. Fifty articles were selected as they were considered influential. Thirdly, the selection criteria described above for these 50 articles ultimately added 143, bringing the total number of primary studies to 1422 before removing duplicates. Figure 4.2 below illustrates the search results from the two databases.

4.2.4.3. *Assessing Quality*

The quality evaluation is the final step in preparing the research collection for data extraction and synthesis, and it acts as a filter to ensure that only high-quality studies were included (Tranfield *et al.*, 2003). Ludvigsen *et al.* (2016) emphasise that quality appraisal is an essential initial step before comparing and combining the results of multiple studies. Assessing the quality of a study involves carefully examining the rationale behind each step of the research process, including data collection, analysis, and the resulting findings and conclusions (Fink, 2019). Management researchers often rely on the implied quality ranking of specific publications instead of explicitly applying quality evaluation criteria to the articles included in

their reviews (Hurmelinna-Laukkanen & Yang, 2022). This study followed the quality ranking Tranfield *et al.* (2003) suggested.

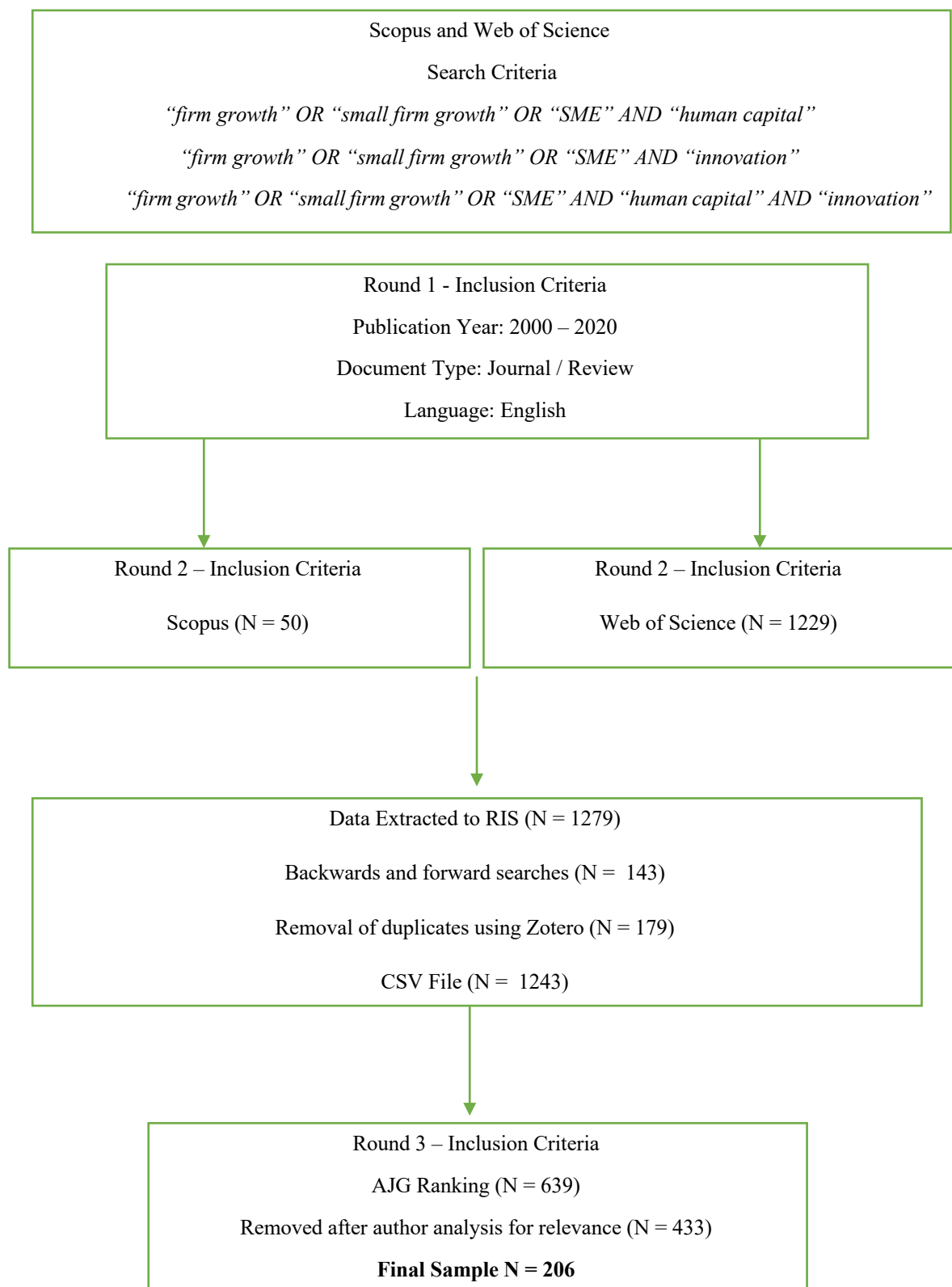


Figure 4.2: Selection Process

Source: Author (2023)

4.2.5. Stage Four: Extracting, Synthesis And Analysis

4.2.5.1. Data Extraction

After the selection phase, a database comprising the 206 primary studies was established. A data extraction form was then created and used as a summary table in Microsoft Excel. The data extraction form had the following columns: publication year, author(s), article title and publication title (see Appendix B). The approach of developing the summary table and conducting further analysis to identify patterns and quantify results is in line with the practices by Newbert (2007), Pittaway and Cope (2007), Pickering and Byrne (2014), Liñán and Fayolle (2015), Yang *et al.* (2017), Stephan (2018), and Hurmelinna-Laukkanen and Yang (2022). By systematically extracting data using standardised forms, the rigour and consistency of the review process of the study were enhanced (Petticrew & Roberts, 2006; Newbert, 2007; Xiao & Watson, 2019; Kraus *et al.*, 2020).

- **Data synthesis**

Synthesis of research is critical for a systematic literature review (Tranfield *et al.*, 2003; Kraus *et al.*, 2020). This includes techniques for summarising, integrating, and, when necessary, combining the results of several studies on specific subjects or research questions (Kraus *et al.*, 2020). Synthesising data, the study identified common patterns, trends, and topics and provided a comprehensive overview of existing evidence. This process allows the researcher to understand the research topic better and helps draw meaningful conclusions and implications from the reviewed literature.

4.2.5.2. Data analysis

- **Descriptive analysis**

Commonly used approaches include charts, tables, and written reports (Kraus *et al.*, 2020). In this study, the descriptive analysis is based on the publication year, geographical location of the study, and journal article. These are provided in the findings section.

- **Bibliometric analysis**

Bibliometric analysis uses statistical techniques to examine bibliographic data (Pritchard, 1969). Bibliometric analysis entails quantitative and systematic scrutiny of a given field (Hota

et al., 2019). It serves various purposes, including identifying highly cited publications, exploring global trends within a research area, delineating subdomains, and creating visual representations such as co-authorship networks and thematic maps (Delecroix & Epstein, 2004; Zupic & Čater, 2015; Niu *et al.*, 2016; Aria & Cuccurullo, 2017; Fouroudi *et al.*, 2020). Researchers can conduct comprehensive literature evaluations using bibliometric methods with meticulous quantitative rigour, establishing robust theoretical frameworks for the categories or themes identified during literature review studies (McCain, 1990; Kraus *et al.*, 2020). Bibliometric analysis is increasingly used in social sciences and management literature reviews to quantify and identify research trends and gaps (Ellegaard & Wallin, 2015; Verma & Gustafsson, 2020; Donthu *et al.*, 2021; Donthu *et al.*, 2021; Horvatinović & Matošec, 2022; Pietronudo *et al.*, 2022; Mariani *et al.*, 2023). Using bibliometric mapping, researchers can better understand a scientific field's structure, evolution, and leading contributors (Noyons *et al.*, 1999; Noyons, 1999; Podsakoff *et al.*, 2008; Luor *et al.*, 2014; Cancino *et al.*, 2017). This mapping leads to more precise data visualisation (Merigó *et al.*, 2016; Gaviria-Marin *et al.*, 2018; Baier-Fuentes *et al.*, 2019).

Library technology serves two main functions: assessing performance and mapping scientific fields (Cobo *et al.*, 2011). Performance evaluation involves analysing the research and publication productivity of individuals and institutions. At the same time, scientific mapping helps to explore the structure and dynamics of scientific fields and to understand specific research trends (Cobo *et al.*, 2011). These methods provide quantitative accuracy for subjective literature assessments and empirical support for categories derived from theoretical sources in review articles. There are five main bibliometric approaches: citation analysis, attribution analysis, bibliographical correlation, co-author analysis and attribution analysis (Zupic & Čater, 2015). Citation analysis, co-citation analysis and bibliographic coupling use citation data to measure impact and similarity. The results of these methods are detailed in the research results section.

Citation analysis often involves generating top-N lists of the most frequently cited studies, authors, or journals within the examined area, with citations as a measure of influence (Usdiken & Pasadeos, 1995). The importance of heavily cited articles stems from the belief that authors reference documents they consider fundamental to their research. Co-citation analysis utilises co-citation counts to establish similarity metrics among documents, authors, or journals (McCain, 1990). Co-citation refers to the frequency with which two units are cited together

(Small, 1973). Bibliographic coupling assesses the similarity between two documents by examining the number of shared references (Kessler, 1963). Co-author analysis quantifies collaboration based on co-authorship data (Acedo *et al.*, 2006). Co-word analysis detects connections among concepts in document titles, keywords, or abstracts (Callon *et al.*, 1983). The content analysis method investigates word co-occurrences in documents to reveal relationships and construct a conceptual framework of the literature, thereby identifying closely related concepts (Callon *et al.*, 1983). Co-word analysis uniquely utilises the actual content of documents to gauge similarity based on word association frequency, presuming that terms appearing together are thematically related.

Researchers often use VOSviewer, a popular open-source software tool which has now become a standard (Van Eck & Waltman, 2010; Van Eck *et al.*, 2010; Waltman *et al.*, 2010; de Alcantara & Martens, 2019; Sarin *et al.*, 2020; Mariani *et al.*, 2023). VOSviewer is a software application designed to create and visualise bibliometric networks (VOSviewer, 2023). These networks can encompass various elements, such as journals, scholars, or specific research articles, and they can be built using different types of relationships, such as citations, bibliographic associations, co-citations, or co-authorships (VOSviewer, 2023). Furthermore, VOSviewer provides text mining capabilities that enable the development and visualisation of co-occurrence networks, showcasing significant terms extracted from a collection of literature (VOSviewer, 2023). VOSviewer facilitates the allocation of all nodes into distinct clusters using a clustering method outlined by Waltman *et al.* (2010). Interpreting these clusters in the network context allows for critically examining potential assertions regarding fragmentation (Dayé, 2023). The VOSviewer software was also used in this study to provide an overview map of human capital, innovation, and small firm growth.

4.2.6. Stage Five: Reporting

Combining and synthesising the findings of primary research papers provides a more accessible and comprehensible understanding of the overall study in the context of a systematic literature review (Tranfield *et al.*, 2003). The report systematically organised the information to help researchers understand the overall research landscape, key findings, and literature themes. In the systematic literature review, the reporting process focuses on conclusions derived from data extraction forms (Tranfield *et al.* 2003; Hurmelinna-Laukkanen & Yang 2022). This stage involved deeply examining collected data and identifying selected studies' patterns, themes, and trends. A descriptive and bibliographic analysis was carried out, further explained in the

SLR results. Bibliometric analysis ensures the transparency and reproducibility of the review (Aria & Cucurullo, 2017). Minimising the risk of over-reading important contributions, regardless of publication date, provides a safer and more comprehensive approach to collecting scientific literature (Ellegaard & Wallin, 2015).

Presenting the SLR in a detailed and transparent manner enhanced the credibility and trustworthiness of the findings, allowing for a critical evaluation of the review process and facilitating future research in the field (Grodal *et al.*, 2021). The importance of reliability, dependability, and reproducibility in conducting SLRs is underscored by Snyder (2019). Additionally, other scholars emphasise the significance of transparency in the process (Tranfield *et al.*, 2003); Callahan, 2014; Torraco, 2016; Aguinis *et al.*, 2018; Lamé, 2019). This study provides a visual illustration in Figure 4.2 to represent the number of studies included in each stage of the identification, screening, eligibility, and inclusion processes (Rios *et al.*, 2020; Csizmadia & Katona, 2022).

4.3. FINDINGS

The systematic literature review's findings follow the structure adopted by Pietronudo *et al.* (2022) and Mariani *et al.* (2023). Therefore, the findings are provided using descriptive analysis and a bibliometric analysis. These were complemented with a content (thematic) analysis, allowing interpretation of the findings.

4.3.1. Descriptive Analysis

4.3.1.1. Publication by year

Publications on topics related to enterprise growth from 2000 to 2020 were monitored. This is illustrated in Figure 4.3. Between 2000 and 2020, the number of publications varies. The increased published research on business growth, particularly between 2010 and 2020, shows increased scientific interest in this subject. Among these studies, the study conducted by Coad is remarkable. From 2010 to 2020, this author's research studies examined various aspects of company growth and innovation. Important works include the study of the growth process of companies using vector auto-regression (2010), the application of Gambler's Relapse theory to the growth path and survival probability (2013), and the study of the relationship between company growth and investment in R&D (2019). Other studies have examined the impact of diversification and survival, innovation capabilities, and the age of enterprises on growth.

These contributions reflect a strong academic engagement with the dynamics of enterprise growth over the past decade.

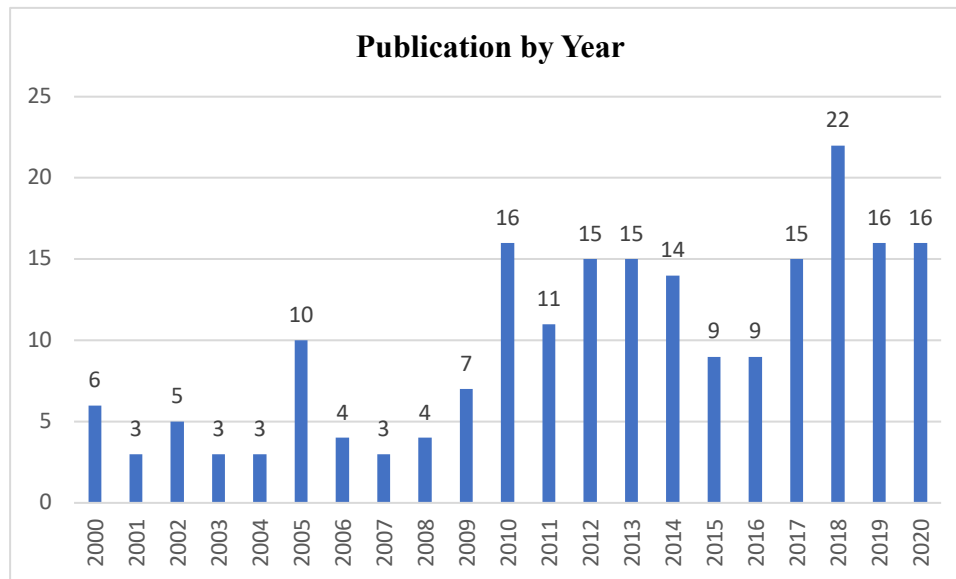


Figure 4.3: Publication by year

Source: Author (2023)

4.3.1.2. Geography of Scientific Production

Regarding the geographical distribution of the leading scientific products, the data reveal a global landscape of research on firm growth in which the United States emerges as a dominant force, leading in terms of publications and outputs. European countries such as England, Spain, Italy, Sweden, Germany, France, and the Netherlands have made significant contributions, demonstrating a diverse and active research community. Scandinavian countries such as Sweden, Denmark, and Finland have shown remarkable performance, and Sweden is particularly renowned for its high impact on the number of citations. Asian countries, such as Japan, South Korea, and China, contribute to the research landscape, but their publications and citations are relatively low, suggesting potential for future research growth.

Table 4.2 Geographical location

Country	N. Publications	N. Citations
USA	78	7838
England	42	3216

Spain	25	1736
Italy	25	1497
Sweden	23	3261
Germany	16	595
France	13	467
Netherlands	12	1191
Denmark	11	660
Finland	7	199
Canada	7	804
Japan	5	676
South Korea	5	172
Switzerland	5	372
Scotland	5	113
People R China	5	491

Source: Author (2023)

4.3.1.3. Scientific outputs by journal

Numerous publications on firm growth research have been distributed across various journals over time. Figure 4.4 below illustrates the top journals with three or more articles. The data presents a comprehensive overview of the distribution of publications across various journals within business and economics. The list encompasses many journals covering diverse topics such as entrepreneurship, innovation, management, economics, and regional development, underscoring the interdisciplinary nature of research in these fields. Additionally, the varying publication counts across journals highlight the significance of specific outlets in disseminating scholarly work and shaping academic discourse in business and economics. Small Business Economics is the most prolific journal with 39 publications, followed by Industrial and Corporate Change with 15, Research Policy with 14, and Journal of Business Venturing with 12. Other notable journals include Entrepreneurship and Regional Development and Industry

and Innovation, with 9 publications. The data also includes notable contributions from journals such as Strategic Management Journal and Journal of Business Research, each with seven publications. The Journal of Small Business Management and Entrepreneurship Theory and Practice are also represented with 6 publications each.

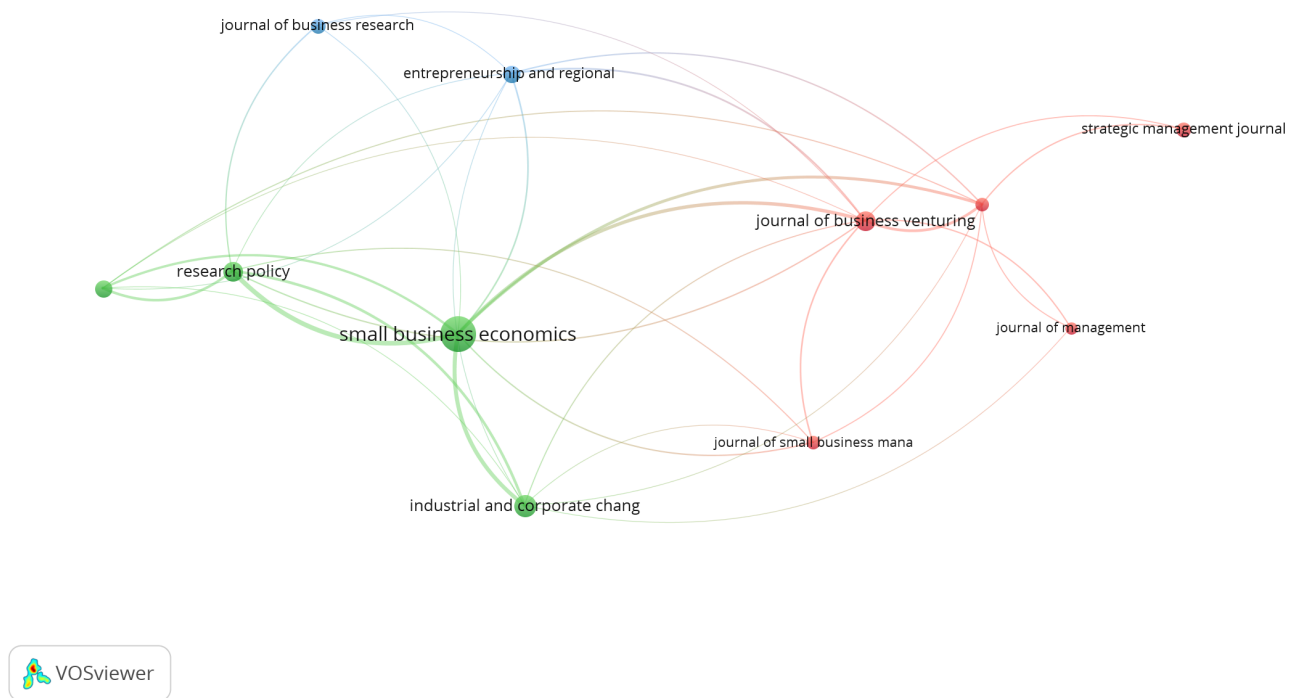


Figure 4.4: Scientific Outputs by Journal

Source: Author derived from VOSviewer (2023)

4.3.2. Bibliometric Analysis

Similar to Zupic & Čater (2015), Pietronudo *et al.* (2022), and Mariani *et al.* (2023), the findings of the systematic literature review of this study rely on fundamental bibliometric techniques. Below are the findings from the bibliometric analysis.

4.3.2.1. Citation analysis

The citation analysis revealed insights into the scholarly discourse surrounding the topic, indicating the formation of shared conversations among researchers (Pietronudo *et al.*, 2022). The co-citation analysis revealed a nuanced picture of the research landscape, showcasing diversity and fragmentation. In the case of this study, the research needs to be more cohesive

in that there is a dispersed pattern where citations are unevenly distributed among a large pool of authors, countries, or journals, indicating limited cohesion and interconnectedness within the research network. Among 459 authors, only 8 emerge as frequently co-cited, indicating a select group of influential authors. Similarly, out of 43 countries and 62 journals, only 16 countries and 11 journals are prominently cited. This suggests that while there is a breadth of contributors and sources, there are clear patterns of selectivity, with specific authors, countries, and journals exerting outsized influence. Such findings point to a research landscape characterised by diversity and fragmentation, where a few key authors, countries (USA and European Countries), and journal sources play significant roles in shaping scholarly discourse.

Among the authors, Coad emerges with 12 documents and 1140 citations, indicating significant contributions to the field. Other prominent contributors include Wiklund, with six documents and 1342 citations, and McKelvie, with 3 documents and 437 citations. These findings shed light on scholarly engagement and collaboration dynamics within-firm growth, innovation and human capital, highlighting the interconnectedness and fragmentation within the academic discourse. Figure 4.5 below illustrates the 2 clusters (Red and Green) that emerged from the citation analysis. The articles in the clusters are interconnected through the collaborative efforts of several authors, with Coad being the most prominent contributor, establishing 21 links within the clusters. Segarra and Wennberg also play significant roles in connecting the articles, with 7 links each. From the data extracted from the red and green clusters, the journals with the most significant impact include Small Business Economics, Research Policy, Journal of Business Venturing, Industrial and Corporate Change, and Entrepreneurship Theory and Practice.

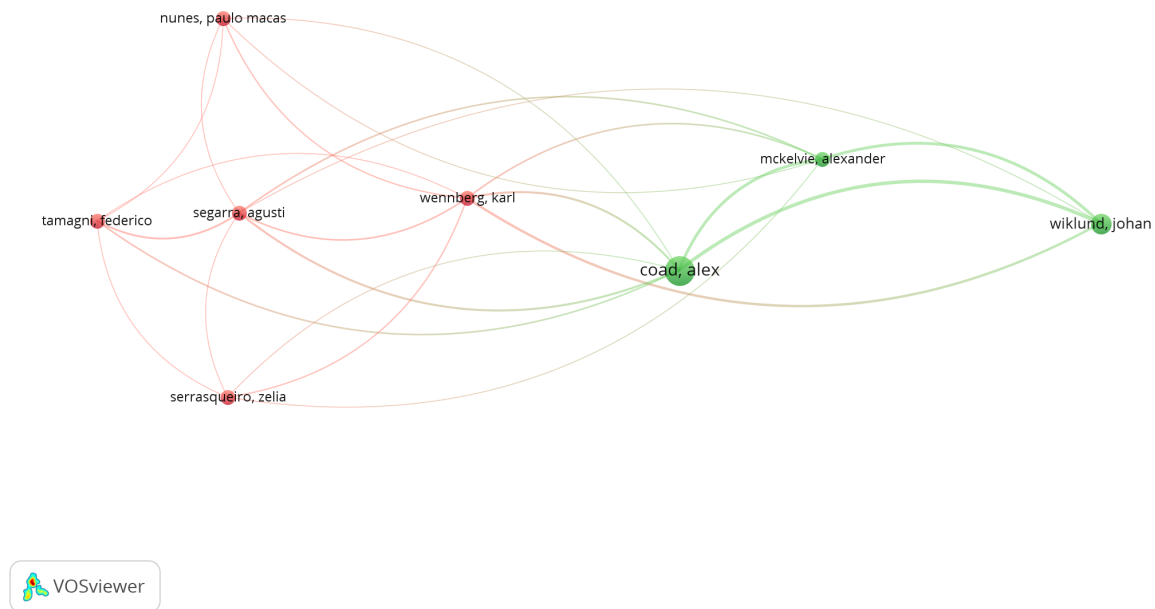


Figure 4.5: Citation Analysis

Source: Author derived from VOSviewer (2023)

Cluster 1, represented in red, showcases a collection of studies focusing on various aspects of firm growth, innovation, and determinants of growth across different sectors and regions. Nunes *et al.* (2012) explore the relationship between R&D intensity and growth in both high-tech and non-high-tech SMEs, revealing contrasting effects on growth depending on the level of R&D intensity. Bianchini *et al.* (2018) discuss innovation complementarities and their role in sustaining firm growth and market shares, emphasising the effectiveness of combining internal R&D with product and process innovations. Guarascio and Tamagni (2019) challenge common theories of innovation persistence, suggesting that persistent innovators do not necessarily experience more growth. Wennberg *et al.* (2016) examine risk preferences in new firm growth and survival, providing insights into decision-making processes and their impact on venture outcomes. Segarra and Teruel (2014) analyse the relationship between R&D investments and high-growth firm (HGF) status, highlighting the positive effect of R&D on the probability of becoming an HGF. Serrasqueiro and Nunes (2016) investigate determinants of growth in Portuguese small and medium-sized hotels, identifying factors such as size, age, financial crisis, and productivity as significant determinants of growth. Lastly, Serrasqueiro *et*

al. (2010) employ quantile regressions to study the relationship between SME growth and its determinants, revealing significant non-linearities across different growth distributions and highlighting the importance of factors such as size, R&D intensity, and cash flow in promoting growth.

Cluster 2, highlighted in green, features a selection of studies primarily focusing on firm growth, entrepreneurial management, innovation, and their interrelations. McKelvie *et al.* (2017) investigate the intermediary mechanisms between growth orientation and firm growth, highlighting the role of innovative activities in translating growth orientation into realised growth. McKelvie and Wiklund (2010) advocate for a shift in focus within-firm growth research towards growth mode rather than the growth rate, proposing a research agenda to advance understanding in this area. Bradley *et al.* (2011) explore the complex relationship between resource slack, entrepreneurial management, and firm growth, shedding light on the dual role of resource slack in fuelling and hindering growth. Delmar and Wiklund (2008) examine the impact of small business managers' growth motivation on firm growth, emphasising the unique influence of growth motivation on employment growth. Lockett *et al.* (2011) delve into the distinctions between organic and acquisitive growth strategies, elucidating their differential effects on future organic growth. Nason and Wiklund (2018) assess resource-based theorising on firm growth, highlighting the association between versatile resources and higher growth levels. Shepherd and Wiklund (2009) scrutinise the appropriateness of knowledge accumulation across growth studies, emphasising the importance of robustness in measuring and comparing firm growth. Coad's studies (2010, 2013, 2016, 2017, 2018, 2020) contribute significantly to understanding firm growth dynamics, innovation, and the role of diversification, drawing on empirical evidence from various contexts such as Sweden, Germany, and India. These studies collectively enrich the understanding of firm growth processes, entrepreneurial behaviour, and innovation strategies, offering valuable insights for scholars and practitioners.

4.3.2.2. *Co-citations analysis*

In addition to the citation network, this study uses a co-citation analysis to delve into the literature on firm growth, innovation and human capital's intellectual structure. This analysis focused exclusively on the references cited within the scientific publications examined in this study. Co-citation occurs when two documents are mentioned in the same article by different authors (Pietronudo *et al.*, 2022). Co-citation involves linking documents, authors, or journals

based on how writers reference them. It is a systematic categorisation method often used by experts who cite works they consider significant or engaging. Since the lengthy publication process, the co-citation representation portrays the field's status at a previous point rather than reflecting its current or future outlook (Zupic & Čater, 2015). Figure 4.67 illustrates the co-citation analysis.

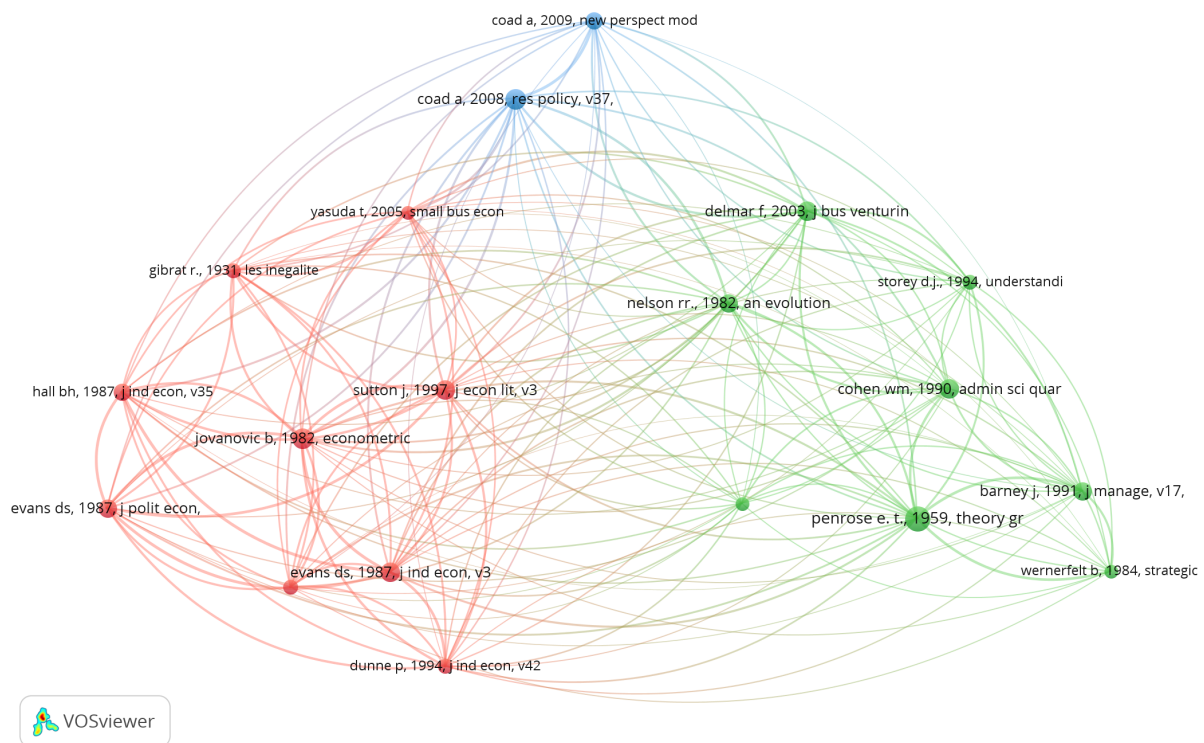


Figure 4.6: Co-Citation Analysis

Source: Author derived from VOSviewer (2023)

As depicted by the co-citation table, the intellectual structure of literature on firm growth, innovation, and human capital reveals several prominent themes and critical contributors. Seminal works such as Penrose's 1959 publication are central to this field, which has garnered significant citations, indicating its foundational importance. Other pivotal figures include Jovanovic (1982), Evans (1987), and Sutton (1997), whose contributions from the 1980s onwards have shaped discussions on firm growth and innovation. Researchers like Cohen (1990), Delmar (2003), and Coad (2008) are notable, as their works bridge various concepts within the literature, connecting discussions on innovation, human capital, and firm performance. The diffusion of these concepts through the research literature has been

facilitated by both central and peripheral researchers, with core ideas often emanating from foundational works and subsequently branching out through citations and discussions in subsequent publications. The structure of the scientific community in this field is characterised by a diverse range of contributors, including economists, management scholars, and innovation researchers, each bringing unique perspectives to the study of firm growth and innovation.

The co-citation highlights three distinct literature clusters on firm growth, innovation, and human capital. The first cluster, represented by the colour red with nine items, comprises a significant portion of the cited references, indicating its prominence in the field. Within this cluster are numerous seminal works, including those by Jovanovic (1982), Evans (1987), and Sutton (1997), which have garnered substantial citations over time, suggesting their foundational importance in shaping discussions on firm growth and innovation. The second cluster, denoted by the colour green, has eight items and also contains notable contributions, with key references such as Penrose (1959), Nelson (1982), and Delmar (2003) featuring prominently. These works likely represent foundational theories and empirical studies on innovation and human capital that have influenced subsequent research in the field. Lastly, the third cluster, identified by the colour blue, appears smaller than the other two clusters, with only 2 items, indicating a more focused subset of literature within the broader domain of firm growth and innovation. Literature within this cluster, such as those by Coad (2008, 2009), may represent more specialised topics or emerging research areas within the field.

4.3.2.3. *Bibliographic coupling*

Bibliographic coupling involves the examination of articles relating to the same sources on the assumption that the more documents have referenced each other, the greater the alignment between them (Pietronudo *et al.*, 2022). The bibliographical coupling analysis explores the fragmentation of literature to illustrate current research trends that can inform future research and set research agendas (Vogel & Güttel, 2013). Despite the different methods, this study uses a similar approach to co-citation analysis, examining articles that show the current intellectual structure of emerging and recent literature. Three groups emerge from the bibliographic coupling. Cluster summaries and representative articles are provided in Annexure C.

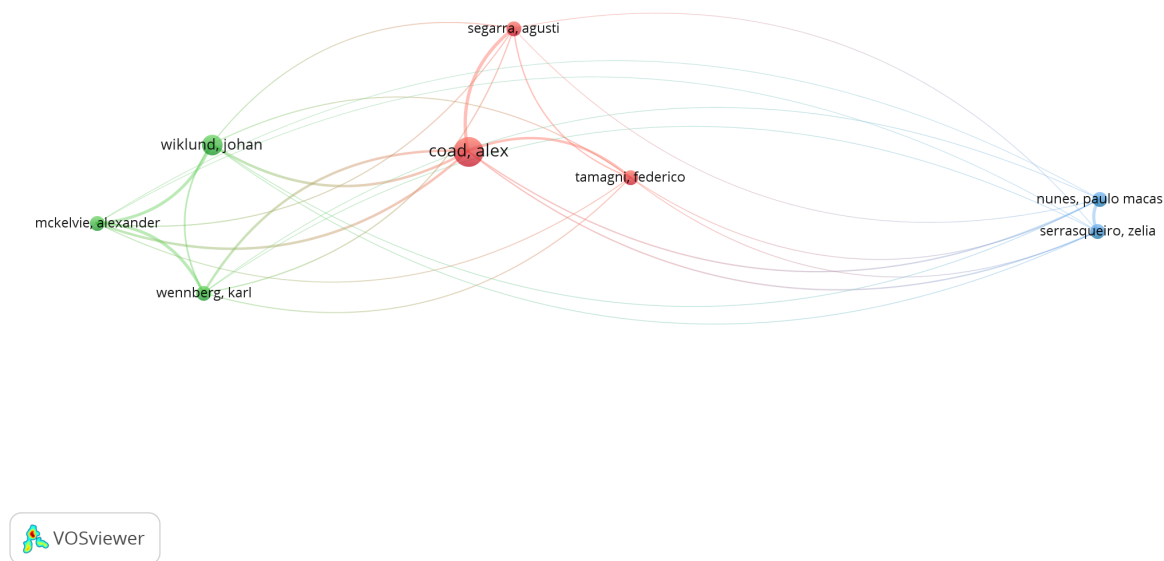


Figure 4.7: Bibliographic coupling

Source: Author derived from VOSviewer (2023)

Figure 4.7 illustrates the structure of the emerging or recent literature on firm growth, innovation, and human capital, characterised by three distinct clusters (red, green and blue) of publications. The red cluster, predominantly led by Coad, encompasses twelve publications with 1140 citations. Key themes include firm growth processes, diversification patterns, and the impact of innovation capabilities on performance. The green cluster, spearheaded by McKelvie and Wennberg, comprises six publications garnering 778 citations. Topics explored include growth motivation, the roles of R&D in new firm growth, and the effect of slack on entrepreneurial management. Lastly, the blue cluster, led by Nunes and Serrasqueiro, comprises six publications with 278 citations. These publications investigate the relationship between R&D intensity and growth and the determinants of growth in SMEs.

The intellectual structure of the research stream reflects a richness of theoretical approaches by showcasing diverse perspectives on firm growth, innovation, and human capital. Each cluster is led by prominent authors who have contributed significantly to their thematic areas, illustrating a breadth of theoretical frameworks and methodologies employed in the literature. For instance, Coad's publications in the red cluster focus on empirical evidence and theoretical frameworks to understand firm growth processes. In contrast, McKelvie and Wennberg, in the green cluster, emphasise the role of growth motivation and innovative activities. Nunes and

Serrasqueiro, in the blue cluster, investigate non-linear relationships between R&D intensity and growth in SMEs, adding a nuanced perspective to the discussion.

The intellectual structure of the small niche of small firm growth, human capital, and innovation has developed through time by showcasing evolving themes and research directions. Initially, the literature predominantly focused on firm growth processes and determinants, as evidenced by Coad's contributions in the red cluster. Over time, researchers like McKelvie and Wennberg in the green cluster have delved into the nuanced role of growth motivation and innovative activities. Additionally, Nunes and Serrasqueiro, in the blue cluster, have expanded the discourse to reflect a maturation of theoretical frameworks and empirical methodologies.

4.3.2.4. Co-author analysis

Authors from different disciplinary backgrounds, such as Coad, Storey, Segarra, Teruel, and Daunfeldt, are not extensively collaborating on a new research field, as their work appears to remain primarily within disciplinary boundaries (see Figure 4.8). The links between institutions such as the European Commission, Aalborg University, University of Sussex, Ratio Institution, Indiana University, University of Nottingham, Syracuse University, and Jonkoping International Business School do not indicate significant interdisciplinary collaboration among these authors. However, co-authored articles, particularly those involving prolific authors like Coad, tend to receive more citations. Prolific authors in the red cluster (Davidsson, Wiklund, McKelvie, Wennberg, and Stam), green cluster (Teruel, Segarra, Storey, and Coad), and blue cluster (Serrasqueiro and Nunes) collaborate more frequently, suggesting a higher level of productivity in terms of collaboration within these clusters. Additionally, there is evidence of intercountry collaboration, indicating that internationally co-authored papers tend to be more cited.

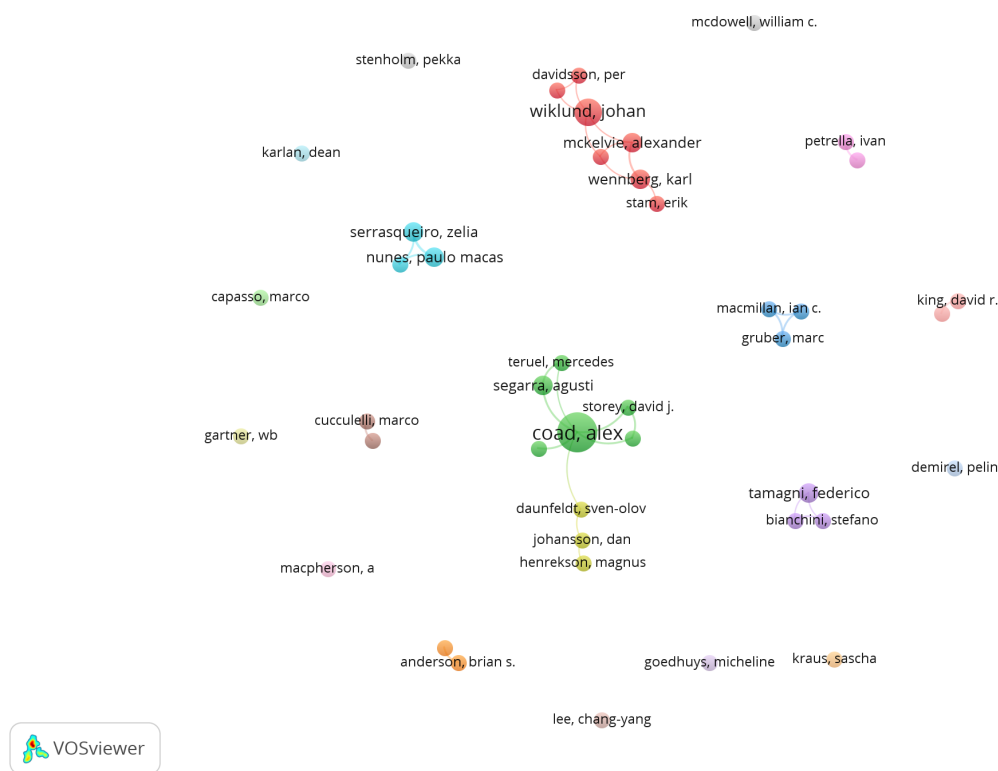


Figure 4.8: Co-author analysis

Source: Author derived from VOSviewer (2023)

4.3.2.5. Co-word analysis

The effectiveness of co-word analysis hinges on several factors, including keyword quality, database comprehensiveness, and statistical analysis sophistication (He, 1998). Relying solely on keywords poses challenges as many journal databases lack them and may suffer from the “indexer effect,” potentially skewing results. While utilising abstracts or full texts can mitigate these issues, noise may arise due to the difficulty in algorithmically discerning word importance in large text (Zupic & Čater, 2015). The co-word analysis generated 1015 keywords, grouped into 6 clusters comprising 84 items (see Figure 4.9). The occurrence of specific words based on the search string or similar meaning was as follows: “Firm growth” appeared 89 times, “Innovation” 66 times, “Human Capital” 5 times, “SMEs” 6 times, “Corporate Growth” 10 times, “R & D” 50 times, “Product Innovation” 7 times, “Experience” 6 times, “Small Firm” 5 times, “Sales Growth” 8 times, “Employment Growth” 7 times, “Firm Performance” 14 times, and “Business Performance” 8 times.

et al. (2021), Hurmelinna-Laukkanen and Yang (2022), and Pietronudo *et al.* (2022). The themes are (1) Patterns, Processes, and Persistence of Innovation and Firm Growth (2) Firm Growth: Motivation, Innovation, and Growth Strategies (3) Growth Dynamics Across Industries and Firm Sizes.

4.3.3.1. Theme 1: Patterns, Processes, and Persistence of Innovation and Firm Growth

This theme comprises 18 articles focusing on understanding the various patterns, processes, and persistence of innovation regarding firm growth. It delves into how innovation influences firm growth over time and explores the factors contributing to the sustainability of growth.

Audretsch, Coad, and Segarra (2014) and Segarra and Teruel (2014) emphasise the role of innovation as a determinant of firm growth. Audretsch *et al.* (2014) highlight the complexity of R&D activities and the need for a multidimensional approach to examine the contribution of innovation to firm growth, while Segarra and Teruel (2014) analyse the effect of R&D investment on firm growth using empirical data from Spanish manufacturing and service firms. Coad *et al.* (2016) focus on the relationship between innovation and firm growth for firms of different ages. The article complements the findings of Audretsch *et al.* (2014) by investigating the riskiness of R&D investment for young firms and its impact on their growth. Bianchini *et al.* (2018) explored the relationship between firm growth and various innovation indicators, such as in-house R&D, external sourcing, product innovation, and process innovation. They stipulated the importance of considering the combined effects of different innovation activities on growth. Dosi *et al.* (2020) article addresses firm growth patterns over long periods, aiming to understand whether growth is a transitory phenomenon or persists over time. They analyse a dataset spanning 50 years and find that while growth rate persistence exists for some firms, it is rare. Using a panel of Spanish manufacturing firms, Guarascio and Tamagni (2019) posited the long-run contribution of innovation persistence to sales growth and market share dynamics. In contrast to the common theory that permanent innovators enjoy a sustainable advantage, this study found that companies that continually innovate only sometimes show more consistent growth patterns over time.

4.3.3.2. Theme 2: Firm Growth: Motivation, Innovation, and Growth Strategies

This theme comprised of 12 articles and centres on the motivations behind firm growth, the role of innovation in driving growth, and the strategies firms employ to achieve growth

objectives. It examines the intersection between motivation, innovation, and strategic decision-making in the context of firm expansion.

Stam and Wennberg (2009) provide insights into the role of R&D in the early stages of firm life, particularly for high-tech and high-growth firms. Their research complements the findings of McKelvie *et al.* (2017) by highlighting the importance of innovative activities, including R&D, in mediating the relationship between growth orientation and firm growth. Wennberg *et al.* (2016) outline and test a decision-making theory of new venture growth and survival, hypothesising that entrepreneurs' risk preferences change based on venture age, size, and performance decision domain. McKelvie and Wiklund (2010) and McKelvie *et al.* (2017) emphasise the importance of understanding the mechanisms behind firm growth, particularly for young firms. McKelvie and Wiklund (2010) highlight the need to shift focus to growth mode (organic, acquisition, hybrid) to advance growth research, which aligns with McKelvie *et al.* (2017) examining growth orientation and its mediation through innovative activities.

4.3.3.3. *Theme 3: Growth Dynamics Across Industries and Firm Sizes*

Theme 3 comprises three articles and examines growth dynamics across different industries and firm sizes. It sought to understand how growth patterns vary across sectors and company scales, considering market conditions, regulatory environments, and technological advancements that shape growth.

Nunes *et al.* (2012) and Serrasqueiro and Nunes (2016) investigated the determinants of growth in SMEs across various industries. Nunes *et al.* (2012) compare the relationship between R&D intensity and growth in high-tech and non-high-tech SMEs in manufacturing industries, highlighting differences in growth dynamics and the importance of financing restrictions. Serrasqueiro and Nunes (2016) focused on small and medium-sized Portuguese hotels, examining the effects of size, age, financial crisis effects, cash flow, government subsidies, and labour productivity on growth dynamics. Serrasqueiro *et al.* (2010) explored the relationship between the growth of Portuguese SMEs and its determinants using quantile regressions. In that study, the nonlinear relationship between growth determinants and growth over the distribution of growth is determined, and the importance of factors such as past growth, size, age, intensity of research and development, and cash flow influences the growth of SMEs.

4.3.4. Connecting Gaps and Research Questions

The systematic literature review provided a comprehensive overview of the factors influencing small firms' growth. The findings suggest that human capital does play a crucial role in supporting innovation and firm growth. The identified gaps in the literature primarily relate to the need for more direct and in-depth studies that explicitly examine the relationship between human capital and firm growth.

4.3.4.1. Research Question 1: Does human capital influence small firm growth?

Innovation, a key driver of growth, is often driven by skilled employees and researchers (Audretsch *et al.*, 2014; Segarra & Teruel, 2014). Furthermore, effective growth strategies require a capable workforce to implement and adapt to changing market conditions (Stam & Wennberg, 2009; McKelvie *et al.*, 2017). For instance, the emphasis on innovation in Themes 1 and 2 suggests that human capital, skilled employees and researchers are essential for developing and implementing innovative strategies. Additionally, the discussions on firm growth strategies in Theme 3 implied that human capital can significantly impact a firm's ability to adapt to changing market conditions and pursue effective growth paths.

4.3.4.2. Research Question 2: Does innovation influence small firm growth?

The findings from all three themes provide strong evidence for the positive relationship between innovation and small firm growth. The literature consistently emphasises the importance of innovation patterns, processes, and persistence (Theme 1) (Audretsch *et al.*, 2014; Bianchini *et al.*, 2018; Dosi *et al.*, 2020) were identified as key factors driving growth. Innovation as a motivator and strategy (Theme 2) (Stam & Wennberg, 2009; McKelvie *et al.*, 2017) was also emphasised. Finally, analysing growth dynamics across industries and firm sizes (Theme 3) (Nunes *et al.*, 2012; Serrasqueiro & Nunes, 2016) demonstrated innovation's role in competitive advantage.

4.4. NEW THEORETICAL FRAMEWORK

A new integrated theoretical framework for understanding small firm growth was developed based on the existing theoretical frameworks discussed in Chapter 2 and the systematic literature review findings. This framework incorporates four core component: Resource Utilisation, Innovation Dynamics, Entrepreneurial Orientation, and Human Capital

Development. As the literature highlights, each component influences firm growth through various pathways. This approach underscores the study's originality and contribution to entrepreneurship and small business research.

4.4.1. Resource Utilisation

Drawing from Penrose's theory of firm growth and RBV, this component emphasises that a firm's growth depends on its ability to leverage tangible and intangible resources effectively. Findings from Nunes *et al.* (2012) highlight the varying impacts of R&D intensity on growth, suggesting that firms must strategically allocate resources to optimise growth outcomes. This aspect also acknowledges the influence of financial constraints and resource slack, as discussed by Bradley *et al.* (2011).

4.4.2. Innovation Dynamics

The component is based on patterns, processes, and innovation persistence. It emphasises that innovation is not a one-time event but a continuous process affecting the growth of companies over time. Bianchini *et al.* (2018) and Dosi *et al.* (2020) reinforce the importance of integrating different types of innovations (products, processes, R&D) to maintain competitive advantages. This emphasises the need to develop an innovation culture and understand the nonlinear dynamics of innovation persistence and the effects across different sectors.

4.4.3. Entrepreneurial Orientation

This component incorporates the concept of entrepreneurial orientation from Lumpkin and Dess (1996) and suggests that a potent EO enhances a firm's propensity to innovate and adapt, thus driving growth. The findings of Wennberg *et al.* (2016) further support the idea that risk preferences, which are integral to EO, significantly impact decision-making and growth outcomes. This component emphasises the need for firms to adopt a proactive view, enabling them to capitalise on opportunities and navigate challenges.

4.4.4. Human Capital Development

In Becker's human capital theory, this aspect highlights the critical role of knowledge, skills, and training in facilitating firm growth. The literature indicates that investments in human capital—such as education and training—are crucial for innovation and overall performance

(Asaju *et al.*, 2013). This component also considers the implications of human capital on management practices and growth strategies, reinforcing the interconnectedness between individual capabilities and organisational performance.

Table 4.3: Theoretical Framework Summary Table

Theoretical Aspect	Key Literature	Knowledge Extension
Resource Utilisation	Penrose' theory of firm growth, resource-based view, Nunes <i>et al.</i> (2012), Bradley <i>et al.</i> (2011)	Extended understanding of the strategic allocation of tangible and intangible resources for optimal growth, considering financial constraints and resource slack. Enhances understanding of the Resource-Based View in SMEs. Illustrates resource constraints and creative utilization for growth.
Innovation Dynamics	Bianchini <i>et al.</i> (2018), Dosi <i>et al.</i> (2020)	Deepened understanding of the importance of integrating different types of innovations for sustained competitive advantage, emphasizing the role of innovation culture and nonlinear dynamics. Integrates findings on innovation persistence and its impact on growth. Advances theories on dynamic capabilities and resilience in SMEs.
Entrepreneurial Orientation	Lumpkin and Dess (1996), Wennberg <i>et al.</i> (2016)	Enhanced understanding of how entrepreneurial orientation, including risk preferences, influences innovation, adaptation, and growth outcomes. Links entrepreneurial behaviours to performance and growth outcomes. Expands theoretical frameworks on strategic decision-making in turbulent environments.
Human Capital Development	Becker's human capital theory, Asaju <i>et al.</i> (2013)	Expanded knowledge of the critical role of human capital investments in facilitating firm growth, including implications for management practices and growth strategies.

Source: Author (2024)

4.5. CONCLUSION

Following the established data collection protocols, this chapter summarises a systematic literature review on the growth of enterprises, innovation and human capital before COVID-19. Analysis of 206 primary studies has revealed increased research output between 2010 and 2020, with considerable contributions from different scholars. Geographically, the United States has emerged as a dominant geographical location for some articles in this review. Using basic bibliometric techniques, insights were made. The three clusters identified by the bibliographic coupling guided the theme development for content analysis. This approach is consistent with previous research and provides valuable insights into the patterns and processes of firm growth. Chapter 6 of this study further summarises the results.

CHAPTER 5: PHASE 2 – METHODOLOGY AND FINDINGS

5.1. INTRODUCTION

This chapter describes the research strategy, data collection, analysis, technology, and procedures for Phase 2 of this study. The results and interpretations are then provided.

5.2. RESEARCH STRATEGY

The study used primary data in the form of a survey. Surveys involve gathering data through questionnaires or interviews to obtain information about a sample's attitudes, opinions, or behaviours (Bryman & Bell, 2011). Survey strategies allow researchers to gather data from numerous respondents (Hair *et al.*, 2013; Hair *et al.*, 2017). Questionnaires can be administered through various methods such as telephone, personal interviews, mail, or electronically (Marsden & Wright, 2010). The questionnaire was sent electronically because it was convenient and suitable in the context of the COVID-19 pandemic. However, the disadvantage of using an online survey is that (1) only individuals with Internet access can participate in the survey, and (2) respondents who are primarily technologically competent can respond (Andrade, 2020).

5.3. DATA COLLECTION, ANALYSIS TECHNIQUES, AND PROCEDURES

This section includes the methods and procedures for collecting and analysing data for this study, specifically addressing the selection of the target population, sampling, data collection, and analysis processes.

5.3.1. Population and Sampling

5.3.1.1. Population

The target population was SMEs across all manufacturing and services sectors in South Africa. The number of SMEs in South Africa is estimated from the Quarterly Labour Force Survey (QLFS) data (Small Enterprise Development Agency, 2021). The QLFS provides valuable information about the labour market, including the number of businesses operating in different sectors. The Small Enterprise Development Agency (SEDA) has implemented its Quarterly SMEs Statistical update to collect data specifically on SMEs. This initiative by SEDA aims to regularly gather relevant data and statistics on SMEs in South Africa. According to the data

provided by SEDA (2023), the number of SMEs rose from 2 363 513 in 2020 Q3 to 2 683 602 in 2022 Q3. The population represents the SMEs in South Africa and serves as the target group for the study. However, due to practical constraints such as time, resources, and feasibility, involving the whole population in research is often impossible.

5.3.1.2. Sampling

- **Sampling Frame**

The sampling frame was SME owner-managed firms established in South Africa. Respondents were identified through publicly available data online. Their details were obtained from the SEDA website, Small Business Directory, various incubation hubs, Global Entrepreneurship Monitor (GEM) Reports, and government and non-government websites.

- **Non-Probability Sampling Method: Convenience Sampling**

Given the large size of the target population, a non-probability sampling approach, specifically convenience sampling, was used. According to Etikan *et al.* (2016), convenience sampling is a method wherein respondents participate voluntarily, with the researcher primarily responsible for selecting sampling units. Convenience sampling was used because it was easy to access SME owner-managers email addresses from lists obtained from the SEDA website, Small Business Directory, various incubation hubs, Global Entrepreneurship Monitor Reports, and government and non-government websites. This was a speedy, simple, and cost-effective way to reach the respondents (Given, 2008; Johnson & Christensen, 2014; Etikan *et al.*, 2016).

Convenience sampling has some disadvantages. The most notable issue is the sampling bias, which means that certain subgroups are not represented in the sample compared to the target population (Obilor, 2018). Consequently, the conclusions drawn from the convenience sample cannot be generalised to the entire population but only to the sample itself (Bornstein *et al.*, 2017). Due to the potential for sampling errors and the inability to adequately represent the population, this lack of representation makes practical sampling less recommended for research (Obilor, 2023). In addition, convenience samples cannot detect differences between subgroups of the population and further limit external validity.

Nevertheless, the study managed these challenges in the following ways: (1) different websites were used to obtain details on the owners and managers to achieve a diversity of samples; (2) large samples and random selection of respondents from lists tried to represent the target population; (3) respondents from different populations tried to ensure that a more

representative sample from the lists was selected; and (4) a pilot study was conducted to assess the robustness of the findings given potential biases provided valuable insights into the reliability and validity of research results.

- **Sample Size**

One of the critical issues when using PLS-SEM is data characteristics with sample size as one of the indicators (Hair *et al.*, 2021). PLS-SEM is adequate for handling complex models and small sample sizes (Cassel *et al.*, 1999; Chin & Newsted, 1999; Hair *et al.*, 2019). Nonetheless, larger sample sizes improve the precision or consistency of estimations in PLS-SEM (Hair *et al.*, 2011; Hair *et al.*, 2019; Hair *et al.*, 2021). Larger samples yield more reliable results (Sekaran & Bougie, 2016). There needs to be more consensus on a universally accepted definition of a large sample size in research.

Many researchers still need help to determine the most appropriate method of data collection using surveys, mainly survey research (Memon *et al.*, 2020), despite numerous propositions and thumb rules for calculating sample sizes in social science research. For example, if less than 50 respondents are engaged, exploratory factor analysis is impossible (although these criteria still depend on other factors). Conversely, in most research contexts, a simple regression analysis requires at least 50 participants, and 100 would usually be deemed appropriate (Hair *et al.*, 2018). Pearson's correlation analysis requires at least 200 participants (Guilford, 1954). Kline (2005, 2016) recommended the sample size in the analysis of structural equation models, with 100 samples being considered small, 100 to 200 as medium, and more than 200 as the most applicable.

Roscoe (1975) set of guidelines for determining sample size has remained popular over the past several decades. Roscoe (1975) proposed that a sample size greater than 30 and less than 500 is appropriate for most behavioural studies. These varying recommendations underscore the importance of considering the specific context and objectives of the research when determining a suitable sample size (Hashim, 2010). Based on the views of Roscoe (1975), Ringle *et al.* (2012), Sekaran and Bougie (2016), Kline (2016) and Hair *et al.* (2021), researchers are to consider time, financial constraints and PLS-SEM data characteristics in determining the sample size. Considering the varied views on selecting the appropriate sample size, this study used a minimum sample size of 500 SME owner-managers.

Additionally, based on previous studies, a sample size of 500 SME owner-managers is justified because other studies using PLS-SEM have used sample sizes close to this; for example, Hair

et al. (2012) found that the average sample size in their review was 154.9. In contrast, reviews in marketing (with a mean of 211.3) and management information systems (MIS) (averaging 238.1) reported larger average sample sizes (Ringle *et al.*, 2012). Mitchell and Nault (2007) used a sample size of 120, whereas Cording *et al.* (2008) used a sample size of 129; Ashill and Jobber (2010) had a sample size of 568; and Gruber *et al.* (2010) used a sample size of 230. Generally, PLS-SEM studies use smaller sample sizes in the strategic management discipline than in other fields.

5.3.2. Data Collection

An online, self-administered, structured questionnaire was used to collect data. It can be found in Appendix E. The questionnaire was designed using Survey Monkey and distributed via email. A participant information sheet was attached to the questionnaire (Appendix E). Respondents were informed that they consent to this study by clicking the survey link and completing the questionnaire.

5.3.2.1. Questionnaire Design

The questionnaire was designed based on the study's research questions (Krosnick, 2018). A comprehensive review of existing literature and past studies on firm growth, entrepreneurial orientation, human capital, innovation, and motivation were conducted to develop the questionnaire. This literature review provided insights into relevant constructs, variables, and measurement scales to be included in the questionnaire (Nardi, 2018). After the initial development of the questionnaire, a pilot study was conducted (this is discussed in detail later). Based on the feedback received during the pilot study, necessary revisions and modifications were made to the questionnaire. This process allowed for refining the questionnaire, ensuring it captured the intended constructs and measures (Krosnick, 2018). The final version of the questionnaire post-pilot testing was used to collect data for the main study. The self-directed online survey included a cover letter detailing the purpose of the study and providing assurance to the participants of their anonymity. The cover letter also provided contact information for researchers and supervisors and facilitates communication with respondents who may need clarification on any research-related issue(s). The questionnaire began with a screening question to determine whether the respondents were owners/managers of SMEs, as the target group of interest in the study was this group. The main questionnaire consisted of six sections: demographics, entrepreneurial orientation, human capital, innovation, motivation, and business growth. The items are listed in Annex E.

- **Section A: Demographics**

Respondents were asked about their background or biographic information (gender, age, education, marital status, number of children, location, and the year they started their business, industry, and products or services).

- **Section B: Entrepreneurship Orientation**

EO was measured using a seven-point Likert scale, ranging from one (strongly disagree) to seven (strongly agree). The chosen Likert scale and the consideration of Cronbach's alpha values ensured the measurement instrument's reliability and consistency. The questionnaire items for EO were derived from previous studies conducted by Miller *et al.* (1989) and Hughes and Morgan (2007). EO was measured as a multidimensional construct comprising 36 items. Specifically, six items were combined to form the autonomy factor, while nine were risk-taking, innovativeness, and proactiveness. Three items represented competitive aggressiveness. Previous studies have also used multidimensional and unidimensional constructs to measure EO (Miller, 1983; Lumpkin & Dess, 1996; Hughes & Morgan, 2007; Covin & Wales, 2011; Fatoki, 2014).

- **Section C: Human Capital**

The attributes of human capital, including experience, education, skills, and knowledge, have long been recognised as necessary resources for achieving entrepreneurial success in firms (Edvinsson & Malone, 1998; Bueno *et al.*, 2011; Mention & Bontis, 2013; Vidotto *et al.*, 2017). In alignment with previous research conducted by Unger *et al.* (2011), Rauch and Rijdsdijk (2013), Laguir and Den Besten (2016), El Shoubaki *et al.* (2020), and this study used education and work experience as indicators of human capital. The questionnaire items related to human capital were adapted and revised from the World Bank Enterprise Survey (2021).

- **Section D: Innovation**

The survey questions related to innovation were adopted from the World Bank Enterprise Survey (2021). These questions included:

- Has this establishment introduced a new or improved product during the last three years?
- Were any new or improved products also new for the establishment's primary market?

- Has this establishment introduced new or improved processes during the last three years?
- During the fiscal year, did this establishment spend on in-house research and development activities or contract with other companies, excluding market research surveys?
- How much did this establishment spend on in-house research and development activities or contracts with other companies during the fiscal year?

These questions assess different aspects of innovation within firms. They capture information about introducing new or improved products and processes and expenditures on research and development activities (World Bank Enterprise Survey, 2021).

- **Section E: Motivation**

Motivation was measured using a five-point Likert-type scale, ranging from 1 (does not correspond at all) to 5 (corresponds exactly). The questionnaire comprised 18 items derived from the Work Extrinsic and Intrinsic Motivation Scale (WEIMS) (internal motivation (IM), motivation (AMO), external regulation (ER), introjected regulation (INTRO), identified regulation (IDEN), and integrated regulation (INTEG) (Tremblay, Blanchard, Taylor, Pelletier, & Villeneuve, 2009). These scales were revised after the pilot study.

- **Section F: Firm Growth**

The measurement items for firm growth were adapted from the World Bank Enterprise Survey (2021). These questions were on employment and sales growth.

These questions on employment growth include:

- Looking back, at the end of 2019, how many employees (permanent and full-time) worked for this firm? Please include all workers and managers.
- Looking back, at the end of 2020, how many employees (permanent, full-time) worked for this firm? Please include all workers and managers.
- Looking back, at the end of 2021, how many employees (permanent, full-time) worked for this firm? Please include all workers and managers.
- Looking back, at the end of 2019, how many permanent, full-time workers were female in this firm?
- Looking back, at the end of 2020, how many permanent, full-time workers were female in this firm?

- Looking back, at the end of 2021, how many permanent, full-time workers were female in this firm?

These questions on sales growth include:

- For the financial year-end 2019, what was this firm's total annual sales for all products and services?
- For the financial year-end 2020, what was this firm's total annual sales for all products and services?
- For the financial year-end 2021, what was this firm's total annual sales for all products and services?

5.3.2.2. Pilot Study

Pilot studies are small initial studies investigating various methods proposed for a more extensive research project (Aran *et al.* 2010). Pilot testing was done to prevent issues that could waste time and resources (Polit & Beck, 2017). The reliability and effectiveness of the survey questionnaires are evaluated by implementing a pilot study (Gudmundsdottir & Brock-Utne 2010; Malmqvist *et al.* 2019). Jones and Brooks (2010) suggest that a minimum sample size of 30 respondents is reasonable for a pilot study. As a result, the pilot study for this research was carried out on 30 owner-managers of SMEs in South Africa from October 2020 to January 2021. A summary of this pilot study is provided below.

• Recruitment of Respondents

The survey invited respondents to participate online by e-mailing the questionnaire link to their email addresses. This link contained a statement explaining the study, and the respondents indicated their consent to participate by clicking on the (accept to participate) link. The respondents answered the study questions using the link and recorded their answers effortlessly.

• Testing the Questionnaire

The SME owner-managers were requested to respond to all the questionnaire questions. The pilot phase aimed to determine if the questions were formulated correctly, easily understandable, and consistently presented. During the pilot phase, specific issues were identified and addressed, including:

- a) Clarifying the language used in Sections B and E of the questionnaire.

- b) Addressing inconsistencies in the Likert scale items of Section E.
- c) Modifying the questionnaire format.
- d) Reducing the length of the questionnaire by removing open-ended questions.

- **Data Entry and Analysis**

Data from 30 respondents was entered into the latest Statistical Package for Social Sciences (SPSS) software, where distinct codes were assigned to each questionnaire item. Subsequently, SPSS was used to analyse the data. The analysis comprised descriptive statistics to summarise the data, and Cronbach's alpha was used to evaluate the reliability and internal consistency of the questionnaire scales for EO and Motivation.

- **Critical Reflections on Pilot Study Findings**

The pilot study improved the structure and clarity of the questionnaire and the data quality used in this study. For example, language clarity required consideration of the linguistic diversity of South African entrepreneurs and managers. Additionally, discrepancies in the Likert scale indicated that the primary study's design needs careful formulation to avoid bias. Two limitations of the pilot study are the sample size and the potential similarity of the respondents, which may not accurately represent the diverse landscapes of South African firms. Due to these constraints, recruitment tactics in the primary study had to be revised to improve the sample's representativeness. The pilot study improved the questionnaire and highlighted the importance of iterative feedback in research design. The implemented changes enhanced the robustness of the main study findings and contributed to a broader understanding of factors influencing the growth of SMEs following COVID-19.

5.3.2.3. Data Analysis

This research involved descriptive statistics and inferential statistics. Descriptive statistics are used to describe the main characteristics of the data (Statistics, 2013). Inference statistics are used to infer from the study data (Statistics, 2013). Two data analysis software programs were used, namely SPSS (descriptive statistics) and Smart PLS (version 3.2.9) (Hair *et al.*, 2005) for the moderation and mediation tests. Finally, the hypothesis was tested in three steps: first, determined the main effect results using regression analysis; second, test the mediation effect using the bootstrapping method (Preacher & Hayes, 2004); and third, determined the

significant interaction between the proposed conceptual model moderating variable (Z) and interaction variable (X).

5.3.3. Hypotheses

The research questions and hypothesis were provided in Chapter 1 in sections 1.8 and 1.9, respectively. After that, in the literature review (Chapter 2), the hypotheses and how they were derived were presented. A significance level of 5% was assumed to assess whether the hypotheses were supported ($p < 0.05$).

5.3.3.1. Descriptive statistics

Description statistics use numbers to summarise and explain information about a group or the relationship between different things. Statistics help to describe samples' characteristics and connections (Babbie, 2010; Babbie & Mouton, 2010). These statistics include variation measurements such as standard deviations and ranges, percentage proportions, numbers, frequency counts, and central trend measurements such as median, median, and mode (Fink, 2006).

5.3.3.2. Partial Least Squares Structural Equation Modelling (PLS-SEM)

PLS-SEM, initially termed PLS path modelling by its originator Herman Wold in 1982, has more recently been labelled as PLS-SEM by scholars such as Hair *et al.* (2011). There has been a significant increase in the adoption of this approach over the last ten years (Guenther *et al.* (2023). Notably, PLS-SEM has garnered significant attention in studies focusing on human resource management, marketing, and related fields (Hair *et al.*, 2011; Hair *et al.*, 2012; Peng & Lai, 2012; Kura *et al.*, 2015; Kaufmann & Gaeckler, 2015; Richter *et al.*, 2016; do Valle & Assaker, 2016; Ali *et al.*, 2018; Li *et al.*, 2020; Min *et al.*, 2020; Ringle *et al.*, 2020; Sarstedt *et al.*, 2020; Sarstedt *et al.*, 2022a; Tian *et al.*, 2020).

From a methodological perspective, PLS-SEM solutions are derived by estimating partial components of structural models, combining principal components analysis with ordinary least squares regressions (Mateos-Aparicio, 2011). PLS-SEM follows a two-step process: assessing the outer and inner models. The outer model evaluates construct validity, reliability consistency, convergent validity, and discriminant validity, while the inner model focuses on testing procedures for the direct and indirect effects. PLS-SEM combines factor and regression analyses, comprehensively examining the relationships between manifest and latent variables within the measurement (outer) and structural (inner) models (Hair *et al.*, 2017). Therefore,

PLS-SEM, specifically SmartPLS version 3.2.9, was appropriate for this study. This analytical approach is based on the characteristics of the data collected and the sample size, necessitating moderation and mediation analyses. While Baron and Kenny's (1986) approach delineates the conventional steps for examining mediation, Preacher and Hayes (2004) have critiqued Baron and Kenny's causal procedure and introduced an alternative method known as bootstrapping the indirect effect. This testing procedure for mediation was considered well-suited for PLS-SEM (Henseler *et al.*, 2009; Albers, 2010).

Similarly, Dava and Rezazadeh (2013) recommend this method to simultaneously predict the equation sets within the proposed research model, which helps test the relationship between variables. Following the well-known practice, the study uses PLS-SEM to conduct robust analysis in management studies (Hair *et al.*, 2012). Like other statistical methods, PLS-SEM requires several important decisions, which can lead to wrong conclusions, inaccurate interpretations, and unreliable conclusions (Hair *et al.*, 2012c). When conducting PLS-SEM analysis, it is crucial to address the issues highlighted by Gefen *et al.* (2011) concerning structural equation modelling in general, as well as those identified by Hair *et al.* (2012a, b, c) specific to the PLS-SEM method. These requirements can be categorised into key areas, as outlined by Hair *et al.* (2011, 2012b, c, 2013, 2021):

1. Data characteristics

- Assess Sample Size
- Provide Comprehensive Sample Description
- Characterise Variable Distributions
- Utilise Holdout Sample
- Facilitate Replication
- Explain Variable Scales

2. Model characteristics

- Graphical Representation of Structural Model
- Characterise Measurement Models

3. PLS algorithm settings and software used.

4. When reporting the supplementary procedures used in your analysis (e.g., bootstrapping, blindfolding, CTA-PLS, analysis of moderating effects, multi-group analysis, FIMIX-PLS), it is essential to provide explicit details about the algorithm settings. This ensures transparency and allows for the analysis to be reproducible.

5. Conduct a comprehensive evaluation of the research study's results. This is done through the measurement and structural model explained in Table 5.1 below.

Table 5.1: Validation of Measurement and Structural Model

Guidance	Technique	Acceptable Level
Reflective Measurement Model		
Internal Consistency Reliability	Composite reliability (CR)	$CR > 0.7$
	Cronbach's Alpha	$\alpha > 0.7$
Convergent Validity	Average Variance extracted (AVE)	≥ 0.50
Discriminant Validity	Cross loading	The loading value of the construct should be greater than all the loadings in the other constructs 0.40 – 0.80
	Heterotrait-Monotrait Ratio (HTMT)	Verify whether the HTMT (Heterotrait-Monotrait ratio of correlations) is significantly lower than the specified threshold values to assess construct relationships: If dealing with conceptually similar constructs, check if HTMT is < 0.90 .

		For constructs that are conceptually distinct, it is advisable to confirm if HTMT is < 0.85 Perform a significance test to ascertain whether the observed HTMT values significantly fall below the specified threshold values.
Formative Measurement Models		
Collinearity analysis	VIF < 3 (best criteria) or VIF < 5	
Indicator weights	Indicator weight, significance levels, t-values/p-values, standard errors	
Structural model		
Collinearity	Serious collinearity problems are anticipated when VIF ≥ 5 Collinearity concerns are typically deemed moderate if VIF = 3–5 Collinearity is generally not considered problematic if VIF < 3	
Relevance and significance of the path coefficients	Closer to [1] = stronger; 95% or 99% CI When applying bootstrapping to assess the significance of path coefficients, t-values or confidence intervals can be utilised. Bootstrapping involves resampling with replacement from the dataset to generate multiple samples, and then estimating the distribution of a statistic	

	(such as path coefficients) based on these resampled datasets. Evaluate the path coefficients magnitude Assess the f^2 values for each path and ensure that they exhibit a consistent rank order with the magnitude of the path coefficients.
Coefficients of determination (R^2)	R^2: ≥ 0.25 (weak); ≥ 0.50 (moderate); ≥ 0.75 (strong) However, when interpreting R^2 values, it is crucial to take into account the complexity of the model. High R^2 values may indicate the risk of overfitting the data by the model.
Effect size (f^2)	Less than 0.02 (trivial effect); 0.02 to 0.15 (small effect); 0.15 to 0.35 (medium effect); 0.35 and above (large effect)

Source: Adapted from Hair *et al.* (2013), Hair *et al.* (2016), Kamis *et al.* (2020), and Hair *et al.* (2021)

After reviewing the original PLS path model, performing additional PLS-SEM analyses such as a mediator, facilitator, multigroup, or importance-performance analysis is described in the following step.

The use of SEM to analyse firm growth as an outcome variable aligns with similar approaches employed in previous studies (Neneh & Van Zyl, 2014; Ngeke, 2014; Dele-Ijagbulu *et al.*, 2021; Neneh & Van Zyl, 2021). These studies have used SEM to examine the relationships between multiple variables and understand the factors influencing firm growth. The current study used this methodology to contribute to the existing knowledge on firm growth.

5.3.3.3. Assessment of the measurement model (outer model)

The reflective measurement model aimed to validate the reliability and validity of construct measures, thus affirming their suitability for incorporation into the path model (Hair *et al.*, 2021). Evaluating the reflective measurement model involved assessing discriminant validity, indicator reliability, convergent validity and internal consistency reliability (including measures such as Cronbach's alpha, reliability coefficient rhoA, and composite reliability)

(Hair *et al.*, 2019). Figure 5.1 below illustrates the steps taken in a reflective measurement model assessment.

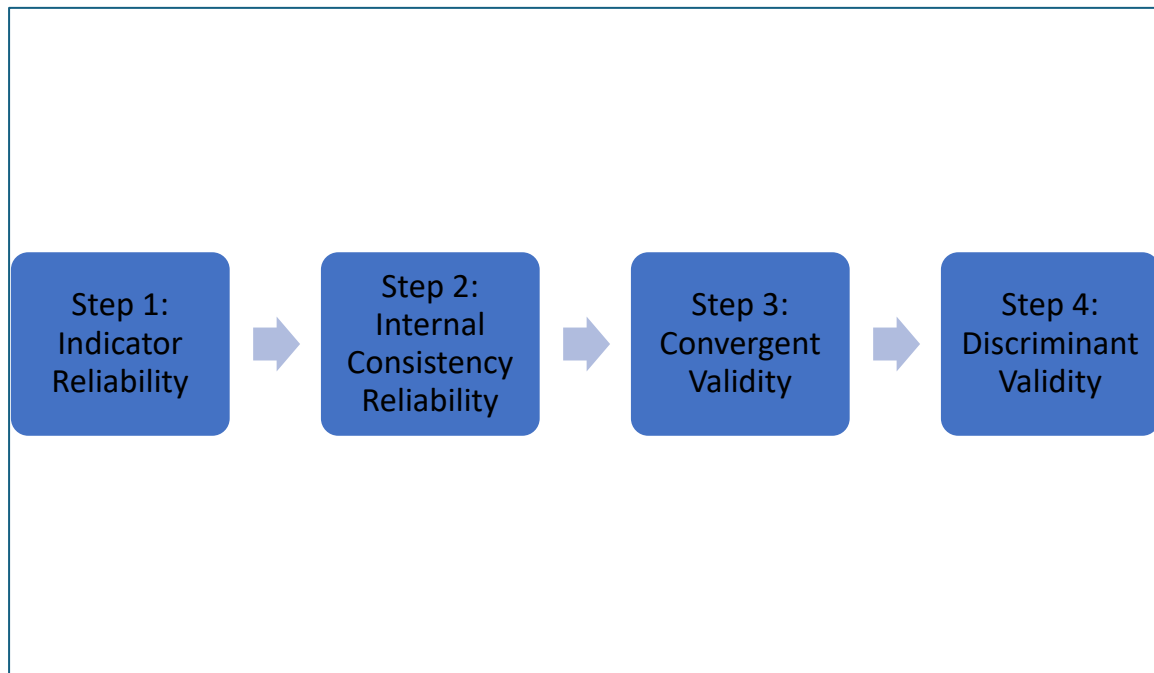


Figure 5.1: Reflective measurement model assessment steps

Source: Adopted from Hair *et al.* (2021).

- **Step 1: Indicator reliability**

The initial step in evaluating the reflective measurement model involves assessing the indicator loadings. It is advisable to consider loadings surpassing 0.708, as the construct accounts for over 50% of the indicator's variance (Hair *et al.*, 2012a). This threshold ensures acceptable item reliability. Malhotra (2007) characterises construct validity as the extent to which an instrument accurately gauges what it is intended to measure.

- **Step 2: Internal consistency reliability**

To establish the validity of a research instrument, it is important to ensure its reliability. Reliability refers to the extent to which the measures in the instrument are error-free, consistent, and repeatable (Thanasegaran, 2009). It assesses the consistency and stability of the research findings, indicating the extent to which measurements and procedures yield consistent results when repeated under similar conditions (Cooper & Schindler, 2014). Reliability ensures that random or systematic errors do not significantly influence the research outcomes. Internal consistency reliability is assessed through composite reliability, and Cronbach's alpha, with

values of at least 0.70, is considered satisfactory (Bolarinwa, 2015; Hair & Sarstedt, 2019). In this study, the internal consistency reliability of the research instrument is assessed using Cronbach's alpha and composite reliability (CR) tests (Cooper & Schindler, 2014). Babin and Zikmund (2016), Babbie (2012), and Connaway and Powell (2010) highlight that both Cronbach's alpha and composite reliability values for each construct must surpass 0.7.

Cronbach's alpha

Cronbach's alpha is widely employed, especially in situations involving multiple Likert questions within a questionnaire where a scale is utilised. Tavakol and Dennick (2011) highlight that researchers often rely on Cronbach's alpha to assess the scale's reliability (see Table 5.2).

Table 5.2: Guidelines for assessing the reliability of constructs

Cronbach's alpha α	Reliability
$\alpha < 0.5$	Unacceptable
$0.6 > \alpha \geq 0.5$	Poor
$0.7 > \alpha \geq 0.6$	Questionable
$0.8 > \alpha \geq 0.7$	Acceptable
$0.9 > \alpha \geq 0.8$	Good
$\alpha \geq 0.9$	Excellent

Source: Chabata (2021)

Composite Reliability

Composite reliability allows researchers to assess the internal consistency and reliability of constructs proposed within a research instrument (Chabata, 2021). CR offers a strong reliability measure as it considers each latent factor's contribution to each item and the error associated with each item (Mkhatshwa, 2015). Like Cronbach's alpha, CR values range from 0 to 1, where higher values (typically between 0.80 and 0.90) indicate higher reliability. In empirical research, CR values ranging from 0.60 to 0.70 are acceptable (Hair *et al.*, 2017). Sarstedt and Cheah (2019) emphasise that CR is a more precise approach for assessing reliability in structural equation modelling than Cronbach's alpha. It considers separate reliabilities for

individual items, ensuring equal weight for all items in the calculation. Recognising the limitations of relying solely on Cronbach's alpha, Hair *et al.* (2017) suggest that internal consistency reliability is better measured using CR, with a minimum accepted CR value specified at 0.70.

Validity of the measurement model

Validity in research refers to the quality of the research process and the accuracy of the obtained results (Creswell, 2014). Validity is mainly concerned with how much a theory is accurately measured in a quantitative study (Heale & Twycross, 2015). It is important to ensure that the instruments used in the study can accurately measure the intended data. Various general validity estimates exist, including convergent and discriminant validity.

Construct Validity

Construct validity focuses on the relationship between a variable and other variables (Thanasegaran, 2009). It includes convergent and discriminant validity. This research examines the survey items with the conceptual constructs from which they were derived. This analysis ensures the items effectively capture the intended theoretical concepts and relationships. Additionally, construct validity is established when the necessary fitness indexes meet the required thresholds (Awang, 2012). Fitness indexes are statistical indicators that assess the goodness of fit between the observed data and the proposed theoretical model (Garver & Mentzer, 1999). This study ensured that the questionnaire accurately represented the theoretical relationships under investigation by carefully scrutinising the survey items and comparing them with the conceptual constructs. Moreover, by assessing the fitness indexes and ensuring they meet the required thresholds, the study verifies the alignment between the collected data and the proposed theoretical model, further strengthening construct validity.

- **Step 3: Convergent validity**

Convergent validity concerns the degree of convergence or agreement among different instruments that assess the same construct (Maroof, 2012). An important consideration in determining convergent validity is the size of factor loadings, which indicate the strength of the relationship between the items and the underlying construct. When items consistently load on a factor, it demonstrates convergence on a common point, thereby supporting convergent validity. Convergent validity is examined using the AVE, where an AVE above 0.50 indicates that the structure explains at least 50% of the variance in its items (Chin, 1998). Two primary

indicators to confirm convergent validity are (1) ensuring that each item's outer loading exceeds 0.7 and is statistically significant and (2) ensuring that the AVE for the constructs is greater than 0.5 (Awang, 2012; Hair *et al.*, 2017).

- **Step 4: Discriminant validity**

Discriminant validity pertains to the degree to which a construct exhibits no correlation with measures of other constructs (Hair *et al.*, 2012). It is commonly assessed using the Fornell-Larcker criterion, cross-loadings, or a combination of both. However, Henseler *et al.* (2015) argued that these methods lack sensitivity and proposed the HTMT ratio as a more accurate criterion. Ringle *et al.* (2005) and Hair *et al.* (2012) suggest adequate discriminant validity evidence is observed when the ratio is less than and not more than 0.85.

Structural Model (Inner model)

After confirming satisfactory construct validity by assessing the outer model, the study uses PLS-SEM (variance-based SEM) to test hypotheses and evaluate the inner model. Testing the inner model allows for proposed hypotheses to be accepted or rejected. Evaluation indicators encompass the significance of path coefficients, the coefficient of determination (R^2), effect sizes (f^2), and predictive relevance (Henseler *et al.*, 2009).

The structural model's inner section comprises relationships involving exogenous and endogenous variables. According to Hair *et al.* (2017), exogenous variables, termed independent variables, are those investigated in a model that influences it without being influenced by it. In the present study, the exogenous variables are human capital and entrepreneurial orientation, which affect the endogenous variable, the dependent variable in the model under examination (Hair *et al.*, 2017). Specifically, the dependent variable in this study is firm growth.

In assessing the structural model, the initial step typically involves verifying whether VIF values are below 3.0 to identify potential multicollinearity issues. Researchers must ensure that such problems do not adversely affect the structural model. Tests were conducted to assess multicollinearity issues, a crucial step in scrutinising all constructs under study to ensure adherence to prescribed thresholds (Hair *et al.*, 2017). Examining multicollinearity problems relies on evaluating the variance inflation factor (VIF). If VIF values surpass 5.0, it indicates the existence of multicollinearity (Sarstedt & Cheah, 2019). Therefore, it is crucial to address collinearity concerns if VIF values exceed the threshold of 5.0.). However, issues may also

arise with VIF values above 3 (Becker *et al.*, 2015), influenced by factors like research field and sample characteristics. Ideally, VIF values around or below 3 indicate that correlations between explanatory variables do not unduly impact the regression model.

In this study, R-squared is used to assess the strength of the relationships within the inner model, specifically between the antecedents in the conceptual model and the dependent variable. Frost (2018) highlights that R-squared is used as a goodness-of-fit measure for linear regression models to measure the predictive accuracy of the sample. Furthermore, a threshold of $\alpha = 0.05$ (using a two-tailed test) was used to determine the statistical significance of inner loadings within the inner model.

In the PLS-SEM context, the p-value is derived through bootstrapping, a nonparametric method used to assess the significance of various PLS-SEM results, including path coefficients (Shmueli *et al.*, 2019). Bootstrapping was utilised to compute the two-tailed p-value and the 95% bias-corrected confidence interval. Criteria proposed by Ringle *et al.* (2005) were adopted to accept an alternative hypothesis, which necessitates the following conditions: the 95% Bias-corrected Confidence Interval should not encompass '0' and a two-tailed p-value of ≤ 0.05 , the path coefficient aligning with the anticipated direction according to the hypothesis.

Assessing Mediation Effects

Mediation occurs when a mediator intervenes between two associated constructs, involving direct and indirect effects (Hair *et al.*, 2021). A direct effect signifies a direct relationship between two constructs, whereas indirect effects involve a chain of relationships incorporating at least one intervening construct. As a result, multiple arrows visually represent an indirect effect, depicting a sequence of two or more direct effects.

Although many PLS path models incorporate mediation effects, they are frequently not explicitly hypothesised and tested (Hair *et al.*, 2022). A thorough and precise comprehension of cause-and-effect relationships can only be attained when potential mediation is both theoretically considered and empirically examined. Nitzl *et al.* (2016), Cepeda Carrión *et al.* (2017), and Memon *et al.* (2018) provide detailed discussions of mediation analysis in PLS-SEM.

Ensuring adherence to quality standards in measurement and structural models is essential for evaluating a mediation model. Mediation analysis can begin once the criteria for reflective and

formative measurement models and the structural model are satisfied. The methodological exploration of mediation testing has attracted considerable attention. Baron and Kenny (1986) introduced the causal step approach to mediation analysis, a widely adopted method by researchers (Rasoolimanesh *et al.*, 2021). However, Preacher and Hayes (2004, p. 2008) criticised Baron and Kenny's "causal procedure" and proposed an alternative approach called "bootstrapping the indirect effect." This mediation testing method is well-aligned with PLS-SEM Modeling (Henseler *et al.*, 2009; Albers, 2010).

Preacher and Hayes (2004) and Preacher and Hayes (2008a) recommended using bootstrapping to ascertain the sampling distribution of the indirect effect. Bootstrapping does not rely on assumptions about variable distribution, making it suitable for large sample sizes (Hair *et al.*, 2022). It can also be applied to the PLS-SEM method (Hair *et al.*, 2021). Therefore, the bootstrapping method was utilised to assess the effects of mediation in this study.

Testing for Moderation

Moderation is a scenario where the association between two constructs does not agree but varies based on an additional variable (Hair *et al.*, 2021). This moderator variable alters the strength or direction of the relationship between the two constructs in a model. Researchers hypothesise moderating relationships a priori, and the testing depends on whether specific model relationships or all relationships are expected to rely on the moderator (Hair *et al.*, 2021). Moderators are assessed using one or several items, employing reflective or formative indicators. The key distinction in the single item or multiple items lies in the moderator's measurement scale, specifically categorising moderators as either categorical (often dichotomous) or continuous (Hair *et al.*, 2021).

When modelling moderating effects, the measurement model for the moderator is incorporated twice within the model. Integrating a moderator variable into a path model entails the representation of the moderator variable and formulating the interaction term (Hair *et al.*, 2021). To incorporate a moderator variable into the equation of the path model, it is crucial to express the equation in the following manner:

$$Y_2 = p_1 \cdot Y_1 + p_2 \cdot M + p_3 \cdot (Y_1 \cdot M).$$

This equation demonstrates that integrating a moderator effect entails defining the exogenous construct ($p_1 \cdot Y_1$), the impact of the moderator variable ($p_2 \cdot M$), and the product term ($p_3 \cdot Y_1 \cdot M$), commonly referred to as the interaction term (Hair *et al.*, 2021). Consequently, the coefficient

p_3 indicates how the effect of p_1 changes as the moderator variable M increases or decreases. In moderation analysis, it is important to analyse the interaction term. When the impact of the interaction term on the endogenous construct is statistically significant, it indicates that moderator M significantly influences the moderation of the relationship between Y_1 and Y_2 (Hair *et al.*, 2021).

5.4. FINDINGS

The study's findings are provided below. This section comprises four main parts. Part A presents the descriptive statistics, while Part B provides the inferential results, including the structural model assessment. Following this, Part C outlines the results of the hypothesis. Finally, the chapter concludes with a summary.

5.4.1. Part A: Descriptive statistics

Section A of the questionnaire gathers demographic data on the total sample, including gender, age, ethnicity, education, the province in which the firm is located, the year the business started, industry, marital status, and legal status of the firm. Malhotra (2007), Hair *et al.* (2017), and Maziriri (2018) emphasise that demographic information offers socio-economic insights into survey respondents as a form of classification. Visual aids in the form of charts, tables, and graphs, as recommended by Hair *et al.* (2017), were used for clarity.

5.4.1.1. Gender

Figure 5.2 presents the gender distribution of respondents. Approximately 52% of owner-managers were male, 46% were female, and 2% chose not to disclose their gender. The sample had more males than females.

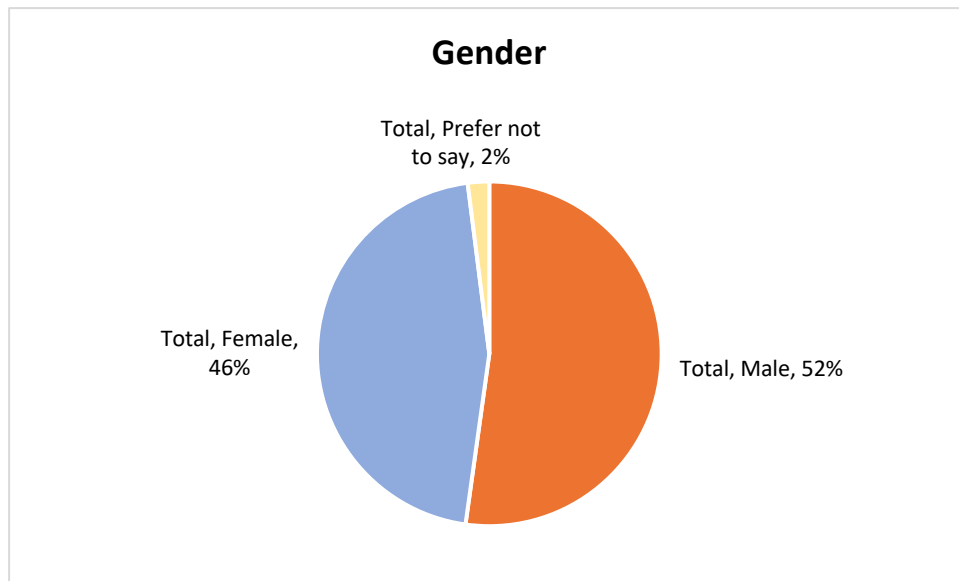


Figure 5.2: Gender

Source: Author (2023)

5.4.1.2. Age

The respondents' ages ranged from 20 to 71+, with the youngest being 20 and the oldest 71+. The average age was 44 (SD = 11.0769). Figure 5.3 illustrates that the majority fell in the 41-45 age range (17.9%), followed by 36-40 (15.3%), 31-35 (13.7%), and 51-55 (12.9%) categories. The 46-50 age group constituted 12.1%, while the 26-30 and 56-60 groups were 9.3% and 7.6%, respectively. The 61-65 age group represented 4.6%, 20-25 were 4%, and 2% were in the 60-70 range. Few respondents fell in the 71+ category (0.6%).

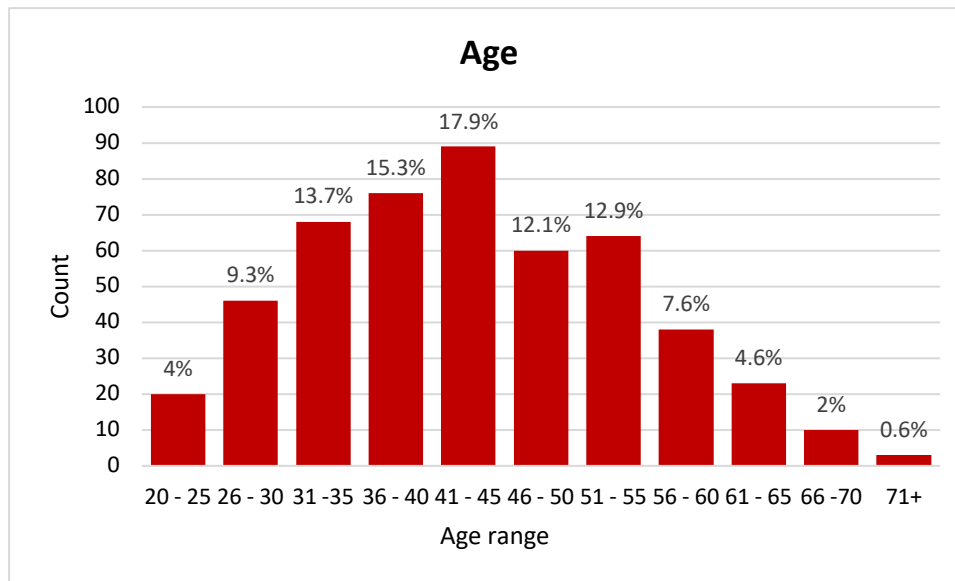


Figure 5.3: Age

Source: Author (2023)

5.4.1.3. Ethnicity

Figure 5.4 presents the ethnicity distribution of respondents. Approximately 32.6% of owner-managers were Black Africans, 26.6% were White, 21.5% were coloured, and 19.3% were Indian/Asian. The sample provided a higher representation of Black African owner-managers.

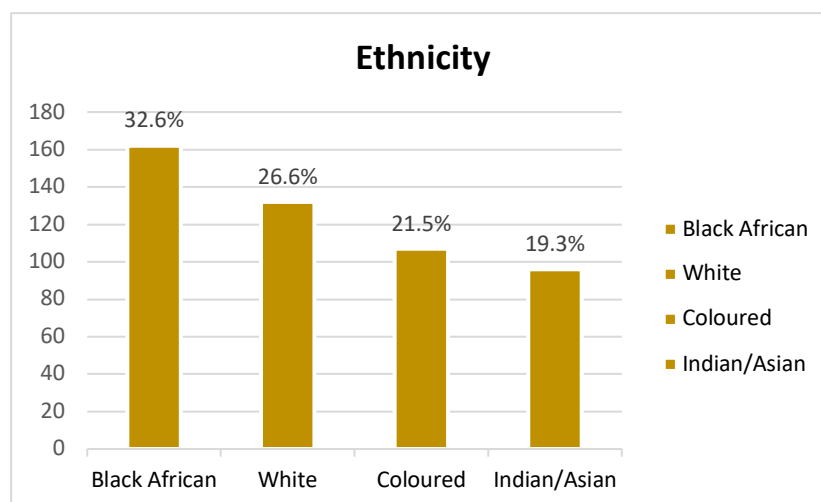


Figure 5.4: Ethnicity

Source: Author (2023)

5.4.1.4. Education

The educational qualifications of the respondents, as illustrated in Figure 5.5 below, reveal a diverse distribution. Most hold a Master's degree, accounting for 25.8%, followed closely by those with Honour's degree/Postgraduate diplomas at 22.3%. Bachelor's degree holders constitute 19.1%, while individuals with Diplomas comprise 15.9% of the sample. Respondents with Doctoral degrees represent 7.4%, and those with Higher Certificates and National Certificates/Grade 12 are 5.4% and 2.8%, respectively. Only a small percentage, 1.2%, did not attend school.

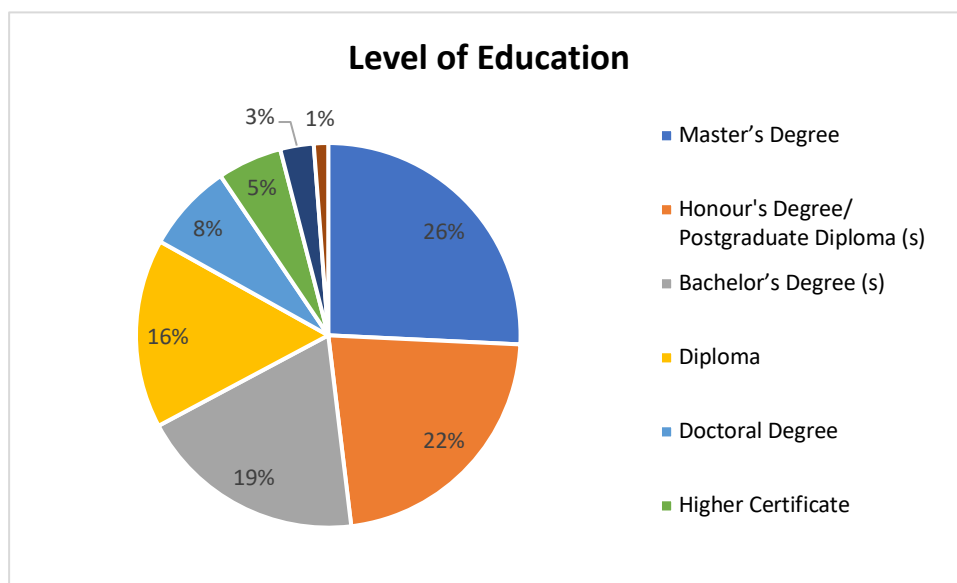


Figure 5.5: Level of education

Source: Author (2023)

5.4.1.5. Marital status

The data in Figure 5.6 reveals that 55% of the respondents are married, 35% are single, and 10% chose not to disclose their marital status.

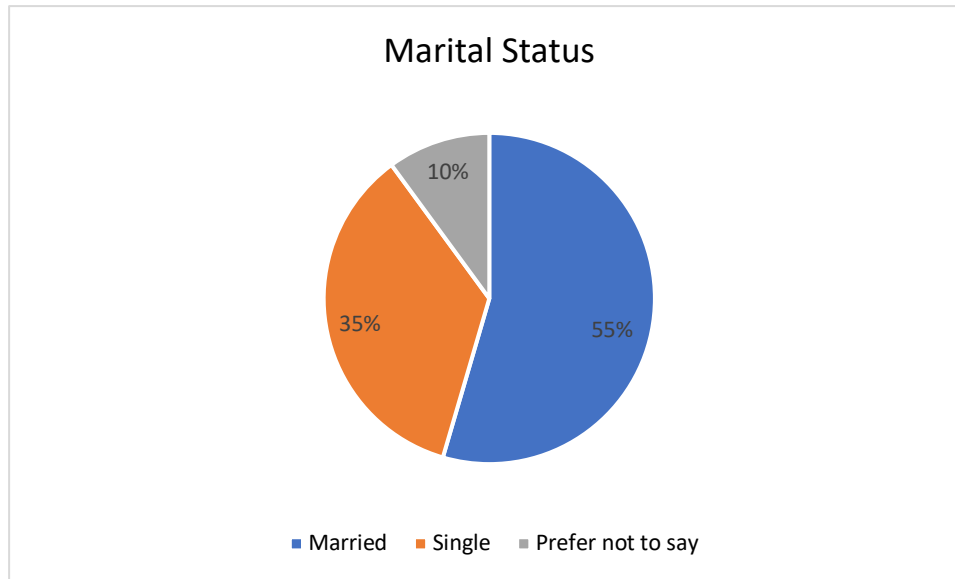


Figure 5.6: Marital status

Source: Author (2023)

5.4.1.6. The province the firm is located

The distribution of respondents across different provinces in South Africa is as follows: Gauteng with 23%, Western Cape at 12%, Free State and North West both at 11%, Limpopo and Mpumalanga both at 10%, Eastern Cape and KwaZulu-Natal at 9%, and Northern Cape at 5%.

Table 5.3: The Province firm is located

Province	N	Percentage
Gauteng	115	23
Free State	54	11
North West	53	11
Western Cape	60	12
Limpopo	51	10
Mpumalanga	49	10
Eastern Cape	46	9
KwaZulu-Natal	44	9
Northern Cape	25	5
Grand Total	497	100

Source: Author (2023)

5.4.1.7. Business Start

The business started in 1993 and will continue into 2021, with a noticeable trend of increasing firm establishments in recent years. Notably, there was a steady rise in business formations from the early 2000s, with a pronounced peak in 2015 (45 businesses). Following this peak, the numbers have remained relatively high, with 42 firms starting in 2016 and 2017. The years 2018 (32 businesses), 2019 (25 businesses), and 2020 (22 businesses) also depict sustained entrepreneurial activity. Interestingly, 2021 saw only one business initiation, possibly indicating a unique circumstance within that specific year. This trend suggests a dynamic entrepreneurial landscape with notable fluctuations and particular periods of heightened business initiation.

Table 5.4: Year the firm was started

Year	Count
1993	1
1995	1
1998	5
1999	7
2000	5
2001	7
2002	2
2003	3
2004	9
2005	6
2006	12
2007	13
2008	23
2009	30
2010	34
2011	28
2012	25
2013	38
2014	39

2015	45
2016	42
2017	42
2018	32
2019	25
2020	22
2021	1

Source: Author (2023)

5.4.1.8. Industry

The distribution of firms across different industries, expressed as a percentage, offers insights into the economic landscape and is represented in Figure 5.7. Construction holds the largest share at 13.3%, indicating a significant presence in the surveyed businesses. Following closely are professional, scientific, and technical activities at 12.7%, highlighting the prominence of knowledge-intensive sectors. Accommodation and food service activities constitute 10.1%, reflecting a substantial presence in the service industry.

Manufacturing, wholesale and retail trade, and motor vehicle and motorcycle repair contribute significantly, with percentages of 8.7% and 8.0%, respectively, showcasing the diversity of economic activities. Sectors such as arts, entertainment, recreation, electricity, gas, steam, air conditioning supply, human health, and social work activities contribute around 5%, indicating a balanced distribution. The data reveals a broad representation of industries, each playing a distinctive role in the overall economic composition.

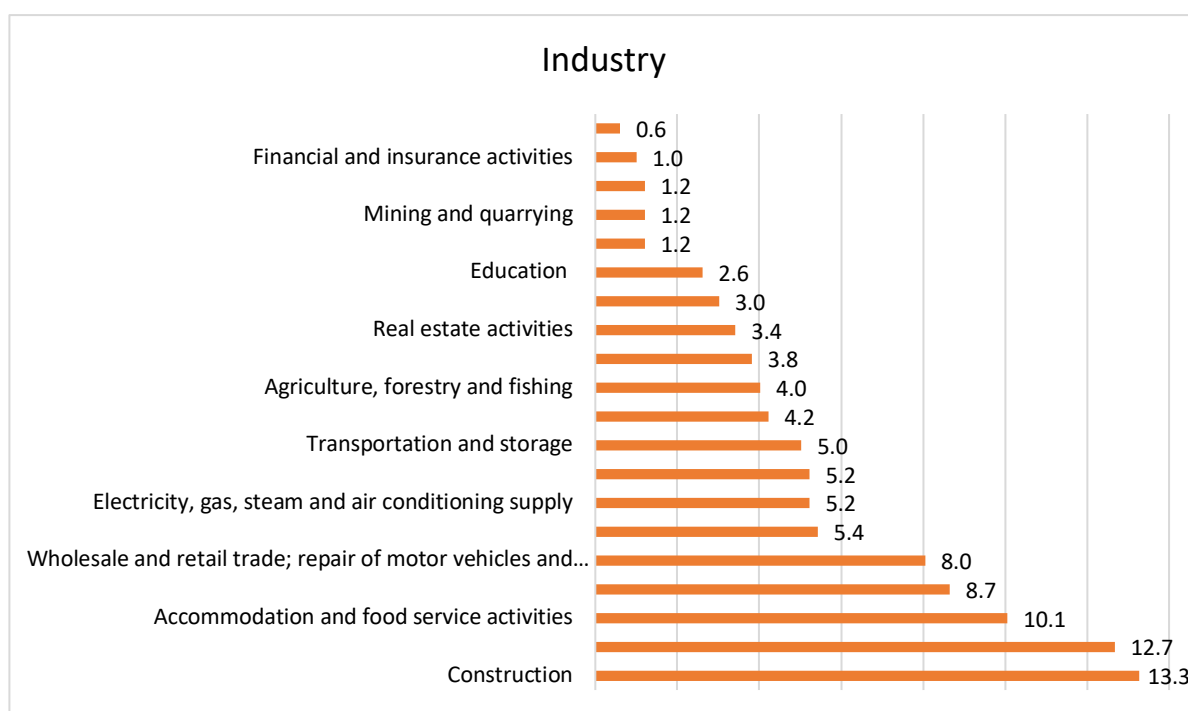


Figure 5.7: Industry

Source: Author (2023)

5.4.1.9. Legal status of the business

Figure 5.8 illustrates the legal status of the firms surveyed. The majority, constituting 61.4%, operate as private companies (Pty) Ltd, indicating a prevalent choice among entrepreneurs. Sole proprietorships and partnerships contribute significantly at 16.7% and 16.5%, respectively, showcasing a substantial presence of individually-owned and collaboratively-run businesses. Cooperative and close corporation structures comprise 2.6% and 2.0%, respectively, contributing to various legal frameworks adopted. Public companies and limited partnerships have a smaller representation at 0.6% and 0.2%, respectively, suggesting a lesser prevalence of these legal structures among the surveyed firms. This diverse distribution of legal statuses underscores the flexibility and adaptability of businesses in choosing structures that align with their operational preferences and goals.

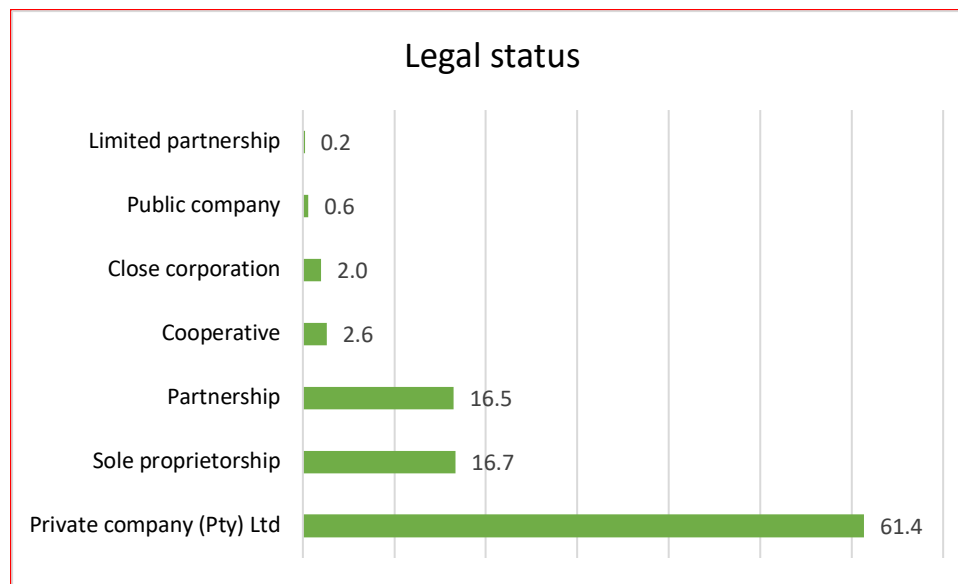


Figure 5.8: Legal status of the firm

Source: Author (2023)

5.4.2. Part B: Inferential results

This section provides the results of the two-step approach for conducting PLS-SEM analysis. It begins by presenting the assessment outcomes of the measurement model (outer model) and then presents the results from the evaluation of the structural model.

5.4.2.1. The outcomes of the assessment of the outer model

The PLS-SEM technique assessed the conceptual model, including examining the internal consistency by reviewing the composite reliability values for each construct. Construct validity within the outer model was evaluated, encompassing both convergent and discriminant. Construct reliability, as determined by composite reliability, required that indicators be statistically significant and equal to or greater than 0.708. Following this, the evaluation of the outer model was reinforced by gauging the convergent validity of the dataset, considering both the indicators' AVE and outer loading. Constructs with AVE values below 0.5 underwent adjustments, achieved by removing indicators with weak loadings. This process aimed to enhance the overall robustness and validity of the conceptual model.

Hair *et al.* (2009) and Kipkebut (2010) highlight that Cronbach's alpha coefficients range from 0.6 to 0.7 and are deemed reliable. The study's findings reveal that all constructs have Cronbach's alpha values surpassing the recommended threshold of 0.7, affirming the reliability

of the measurement items employed. As per existing literature, composite reliability values within the range of zero to one are considered acceptable (Ramayah *et al.*, 2011). An index exceeding 0.7 indicates satisfactory internal consistency for the construct (Nunnally, 1978; Hair *et al.*, 2009). The computation of composite reliability and average variance extracted for each construct utilised the formula proposed by Fornell and Lacker (1981). For internal consistency of the constructs under study, CR should exceed the established criterion of 0.70. As Fraering and Minor (2006) suggested, AVE should be above 0.4 to be considered acceptable. The results in Table 7 indicate that the measurement model exhibits acceptable reliability and convergent validity.

Table 5.5: Results of the measurement model

Construct	Cronbach's Alpha	Cronbach's Alpha based on standardised items	Composite reliability	AVE	Discriminant validity (HTMT < 0.85)
Entrepreneurial orientation	0.710	0.728	0.815	0.524	YES
Human capital	0.726	0.714	0.791	0.628	YES
Innovation	0.755	0.814	0.852	0.588	YES
Motivation	0.904	0.876	0.796	0.725	YES
Firm growth	0.788	0.775	0.782	0.691	YES
Firm age	0.894	0.895	0.779	0.864	YES
Industrial sector	0.797	0.766	0.724	0.626	YES

Source: Author (2023)

The table provides a comprehensive assessment of key metrics, including Cronbach alpha, composite reliability, AVE and discriminant validity, which are pivotal in evaluating the robustness of the measurement model in this study. These constructs serve as crucial indicators of the reliability and validity of the measurement instruments employed.

Notably, the Cronbach alpha scores reveal a high degree of internal consistency within the constructs, underscoring the reliability of the measurement items. Motivation leads with a notable score of 0.904, while entrepreneurial orientation follows at 0.710, surpassing the

widely accepted threshold of 0.7. This implies that the items within each construct reliably measure the intended underlying concept.

Regarding composite reliability, the highest value of 0.852 for innovation reflects a strong internal consistency, while the lowest value of 0.724 for the industrial sector remains within the acceptable range of 0.70. These outcomes affirm the reliability of the constructs, indicating that the covariance between observed variables is well-captured.

The assessment of AVE demonstrates how each construct explains the variance within itself relative to measurement error. Firm factors exhibit the highest AVE at 0.864, emphasising a substantial proportion of variance explained by the construct. On the other hand, entrepreneurial orientation, with the lowest AVE at 0.524, still surpasses the recommended threshold of 0.4, ensuring satisfactory convergent validity.

All constructs met the HTMT threshold, confirming adequate discriminant validity. This suggests that the constructs are distinct from one another, reinforcing the validity of the measurement model. The HTMT ratios, which are all below the conventional threshold of 0.85, ensure that the constructs are not unduly correlated, supporting the robustness of the measurement model in capturing the intended theoretical distinctions among variables.

5.4.2.2. Hair, Tatham, and Anderson (HTMT) ratios of correlations for the measurement model

All HTMT ratios of correlations should be below 0.85. If any ratios exceed this threshold, it indicates that the measurement model lacks discriminant validity. In such cases, further testing of hypotheses would be compromised. The cross-loading matrix will be examined to address the discriminant validity among constructs. High cross-loadings would be identified, and items would be systematically removed to achieve discriminant validity. This step-by-step process aims to reduce HTMT ratios to less than 0.85, ensuring the reliability of the measurement model for hypothesis testing. The results are depicted in Table 5.6 below.

Table 5.6: HTMT ratios of correlations for the measurement model

	Entrepreneurial orientation	Human capital	Innovation	Motivation	Firm growth	Firm Age	Industrial sector
Entrepreneurial orientation							

Human capital	.584						
Innovation	.368	.317					
Motivation	.197	.129	.498				
Firm growth	.391	.269	.728	.085			
Firm age	.346	.435	.300	.324	.320		
Industrial sector	.268	.010	.261	.435	.586	.349	

Source: Author (2023)

Table 5.6 presents the HTMT ratios of correlations for the measurement model, assessing the discriminant validity between different constructs. Each cell in the table represents the HTMT ratio between the corresponding constructs. The recommended threshold for HTMT ratios is typically 0.85 or lower. It can be observed that the HTMT ratios for most of the correlations are below the recommended threshold, suggesting satisfactory discriminant validity. However, a few ratios, such as the one between Motivation and Innovation (0.498) and Firm Growth and Innovation (0.728), exceed the 0.85 threshold.

If the thresholds were unmet, an alternative process could involve revisiting the measurement model. This may include reconsidering the conceptualisation and operationalisation of the constructs, exploring additional indicators, or removing items that contribute to the high correlations. Alternatively, exploring the modification indices from a confirmatory factor analysis (CFA) could provide insights into potential adjustments to improve the model fit and meet the recommended thresholds. Adjustments might involve refining the measurement model structure or considering correlations between measurement errors of related items. It's important to ensure that the chosen modifications align with theoretical and substantive considerations to maintain the model's validity.

5.4.2.3. Results of the assessment of the inner model

Table 5.7 below depicts the direct relationships tested in the study.

Table 5.7: Results of the assessment of the direct relationships of the inner model

Constructs and hypothesis	p-values (one-tailed)	Accepted or rejected of null hypothesis	R ² measures
H1a	0.020	Rejected	.104
H2a	0.297	Accepted	.047
H3a	0.000	Rejected	.107
H4a	0.000	Rejected	.096
H5a	0.140	Accepted	.532
H6a	0.009	Rejected	.112

Source: Author (2023)

5.4.2.4. Mediation Relationships

This study's conceptual model has two independent variables, EO and human capital, which are considered in association with two mediating variables, innovation and motivation. The model further includes one dependent variable, firm growth. Following the approach outlined by Bao *et al.* (2011), the mediation analysis is conducted in four main steps based on Baron and Kenny's (1986) suggested procedure. The initial step involves assessing the significance of the relationship between the independent and dependent variables without the mediator. The second step focuses on establishing the relationship between the independent variable and the mediator. In the third step, the analysis examines whether the mediator significantly and uniquely affects the dependent variable. The final step entails constructing the entire model to determine whether the previously observed significant relationship between the independent and dependent variables becomes zero (indicating full mediation) or is diminished (indicating partial mediation) (Bao *et al.*, 2011).

Preacher and Hayes (2004; 2008) criticised Baron and Kenny's (1986) causal procedure for mediation analysis and proposed an alternative method known as bootstrapping the indirect effect. This contemporary approach to testing mediation is particularly well-suited for PLS-SEM (Henseler *et al.*, 2009; Albers, 2010). In alignment with this, the current study employed the PLS-SEM technique to investigate the mediating effects of innovation and motivation. PLS path analysis was utilised for evaluating mediation models and testing mediation hypotheses, leveraging the bootstrapping method (Hayes *et al.*, 2011; Hernández-Perlines *et al.*, 2016).

According to Gye-Soo (2016), to establish a significant relationship, both t-statistics and p-values must meet specific thresholds. Specifically, the t-value should be equal to or greater than 1.96, and the p-value should be less than 0.05. It is essential for both the t-value and p-value to simultaneously meet these criteria to demonstrate and define the significance of the proposed relationships in the study.

Table 5.8: Results: T-statistics and P-values

	T-statistics	P values	Explanation
H3a: Entrepreneurial orientation > innovation > small firm growth	-4.801	0.000	The negative t-statistic indicates that the relationship between entrepreneurial orientation, innovation, and firm growth is statistically significant. The p-value of 0.000 is less than the significance level of 0.05, providing strong evidence to reject the null hypothesis. Therefore, there is support for the hypothesis that entrepreneurial orientation has a greater impact on small firm growth compared to innovation.
H4a: Human capital > innovation > small firm growth	-5.154	0.000	The negative t-statistic and a p-value of 0.000 suggest a statistically significant relationship. The p-value of 0.000 is less than the significance level of 0.05, providing strong evidence to reject the null hypothesis. The evidence supports the conclusion that human capital has a greater impact on small firm growth compared to innovation.
H5a: Entrepreneurial orientation > motivation > small firm growth	1.478	0.140	The positive t-statistic and a p-value of 0.140 suggest that the relationship between entrepreneurial orientation, motivation, and firm growth is not statistically significant at the significance level of 0.05. Therefore, there is insufficient evidence to reject the null

			hypothesis, indicating that entrepreneurial orientation may not have a greater impact on small firm growth compared to motivation.
H6a: Human capital > motivation > small firm growth	2.629	0.009	The positive t-statistic and a p-value of 0.009 suggest that the relationship between human capital, motivation, and firm growth is statistically significant. The p-value of 0.000 is less than the significance level of 0.05, providing strong evidence to reject the null hypothesis. The evidence supports the conclusion that human capital has a greater impact on small firm growth compared to motivation.

Source: Author (2023)

The t-statistics and p-values are used to assess the statistical significance of the relationships described in each hypothesis. A low p-value (typically below 0.05) indicates that the results are unlikely to have occurred by chance, supporting the rejection of the null hypothesis in favour of the alternative hypothesis.

Table 5.9: Mediation Conclusion

	Mediation conclusion
H3a: Entrepreneurial orientation > innovation > small firm growth	A t-value of -4.801 and a p-value of 0.000 indicate that the mediation effect is statistically significant. The negative sign of the t-value indicates the direction of the effect. Since the t-value is significantly different from zero and negative, it suggests that there is a significant negative mediation effect. The p-value being 0.000 means that the probability of observing a mediation effect as extreme as the one found in the sample,

	assuming the null hypothesis (no mediation effect), is extremely low. In conventional terms (using a significance level of 0.05), the p-value is less than 0.05, providing strong evidence to reject the null hypothesis. In conclusion, based on the provided t-value and p-value, it would likely be concluded that there is a statistically significant negative mediation effect. This implies that the proposed mediator variable plays a significant role in explaining the relationship between the independent variable and the dependent variable in the population being studied.
H4a: Human capital > innovation > small firm growth	A t-value of -5.154 and a p-value of 0.000 indicate that the mediation effect is statistically significant. In conclusion, based on the provided t-value and p-value, it is concluded that there is a statistically significant negative mediation effect.
H5a: Entrepreneurial orientation > motivation > small firm growth	Based on the provided t-value 1.478 and p-value 0.140, it is concluded that the mediation effect is not statistically significant. Therefore, there is not enough evidence to support the presence of a mediation effect between the independent and dependent variables in the population being studied. In conclusion, based on the provided t-value and p-value, it is concluded that there no mediation effect.
H6a: Human capital > motivation > small firm growth	A t-value of 2.629 and a p-value of 0.009 suggest that the mediation effect is statistically significant. This implies that the proposed mediator variable plays a significant role in explaining the relationship between the independent variable and the dependent variable in the population being studied. In conclusion, based on the provided t-value and p-value, it is concluded that there is a statistically significant positive mediation effect.

Source: Author (2023)

5.4.2.5. Moderation Relationship Effects

In moderation analysis, particular attention should be given to the coefficient associated with the interaction term. The statistical significance of this coefficient serves as an indicator of moderation. The sign and magnitude of the coefficient provide insights into the nature and strength of the moderation effect. A statistically significant interaction term signals the presence of a moderation effect. When interpreting the results of moderation analysis, the p-values associated with the independent variable, moderator variable, and interaction term play a crucial role. These p-values help assess the significance of each variable's contribution to the moderation effect, providing valuable information for understanding the nuanced dynamics within the model.

Table 5.10: Moderation Interaction terms

	P-value Interaction term
H1b: Firm age moderates the relationship between entrepreneurial orientation and small firm growth	0.178
H2b: Firm age moderates the relationship between human capital and small firm growth	0.178
H1c: Industrial sector moderates the relationship between entrepreneurial orientation and small firm growth	0.020
H2c: Industrial sector moderates the relationship between human capital and small firm growth	0.160
H1d: Gender moderates the relationship between entrepreneurial orientation and small firm growth	0.706
H2d: Gender moderates the relationship between human capital and small firm growth	0.595

Table 5.11: Moderation Conclusion

Factors	p-values	Conclusion

H1b: Firm age moderates the relationship between entrepreneurial orientation and small firm growth	Entrepreneurial orientation = 0.51 Firm age = 0.32 Interactive term = 0.178	Moderation does not exist. While the main effect of the independent variable (entrepreneurial orientation) was not statistically significant, the main effect of the moderator variable (firm age) was significant. However, the interaction effect, which would indicate moderation, was not statistically significant. This suggests that while the moderator has a main effect on the dependent variable (small firm growth), it does not appear to significantly moderate the relationship between entrepreneurial orientation and small firm growth. Therefore, there is no moderation among the variables of interest.
H2b: Firm age moderate the relationship between human capital and small firm growth	Human capital = 0.284 Firm age = 0.26 Interactive term = 0.178	Moderation does not exist. The main effect of the independent variable (human capital) was not statistically significant, but the main effect of the moderator variable (firm age) was significant. However, the interaction effect, indicating moderation, was not statistically significant.
H1c: Industrial sector moderates the relationship between entrepreneurial orientation and small firm growth	Entrepreneurial orientation = 0.023 Industrial sector = 0.113 Interactive term = 0.020	Moderation does exist. This suggests that the relationship between the independent variable and the dependent variable is moderated by the presence of the moderator variable.
H2c: Industrial sector moderates the	Human capital = 0.166	Moderation does not exist.

relationship between human capital and small firm growth	Industrial sector = 0.089 Interactive term = 0.160	The main effect of the independent variable (human capital) was not statistically significant, but the main effect of the moderator variable (industrial sector) was significant. However, the interaction effect, indicating moderation, was not statistically significant.
H1d: Gender moderates the relationship between entrepreneurial orientation and small firm growth	Entrepreneurial orientation = 0.022 Gender = 0.749 Interactive term = 0.706	Moderation does not exist. The main effect of the independent variable (entrepreneurial orientation) was not statistically significant, but the main effect of the moderator variable (gender) was significant. However, the interaction effect, indicating moderation, was not statistically significant.
H2d: Gender moderates the relationship between human capital and small firm growth	Human capital = 0.296 Gender = 0.826 Interactive term = 0.595	Moderation does not exist. The main effect of the independent variable (human capital) was not statistically significant, but the main effect of the moderator variable (gender) was significant. However, the interaction effect, indicating moderation, was not statistically significant.

Table 5.12: Summary of Mediation and Moderation

Hypothesised relationships	P-values	Significant/Insignificant	Outcome
Hypothesis 3a: Innovation mediates the relationship between entrepreneurial orientation and small firm growth	0.00	Innovation significant at $p < 0.05$	There is partial mediation between entrepreneurial orientation, innovation, and firm growth.

Hypothesis 4a: Innovation mediates the relationship between human capital and small firm growth	0.00	Innovation significant at $p<0.05$	There is partial mediation between human capital, innovation, and firm growth.
Hypothesis 5a: Motivation mediates the relationship between entrepreneurial orientation and small firm growth	0.140	Motivation insignificant at $p<0.05$	There is no mediation between entrepreneurial orientation, motivation, and firm growth.
Hypothesis 6a: Motivation mediates the relationship between human capital and small firm growth.	0.09	Motivation significant at $p<0.05$	There is partial mediation between human capital, motivation, and firm growth.
Hypothesis 1b: Firm age moderates the relationship between entrepreneurial orientation and small firm growth	0.178	Interactive term insignificant at $p<0.05$	Therefore, moderation does not exist.
Hypothesis 2b: Firm age moderates the relationship between human capital and small firm growth	0.178	Interaction term insignificant at $p<0.05$	Therefore, moderation does not exist.
Hypothesis 1c: Industrial sector moderates the relationship between entrepreneurial orientation and small firm growth	0.02	Interaction term significant at $p<0.05$	Therefore, moderation does exist.
Hypothesis 2c: Industrial sector moderates the relationship between human capital and small firm growth	0.160	Interaction term insignificant at $p<0.05$	Therefore, moderation does not exist.

Hypothesis 1d: Gender moderates the relationship between entrepreneurial orientation and small firm growth	0.706	Interaction term insignificant at $p < 0.05$	Therefore, moderation does not exist
Hypothesis 2d: Gender moderates the relationship between human capital and small firm growth	0.595	Interaction term insignificant at $p < 0.05$	Therefore, moderation does not exist

Source: Author (2023)

5.5. SYNTHESIS OF THE FINDINGS

5.5.1. Research Questions 1 & 2: Influence of Entrepreneurial Orientation and Human Capital on Firm Growth

Hypothesis 1a was supported, revealing a positive and significant association between entrepreneurial orientation and firm growth ($p = 0.020$). However, Hypothesis 2a was not supported, as the relationship between human capital and firm growth was not statistically significant ($p = 0.297$). This indicates that while EO plays a crucial role in fostering growth among small firms, human capital alone does not significantly drive growth, suggesting that other factors may need to be considered.

5.5.2. Research Questions 3 & 4: Mediating Role of Innovation

Both Hypotheses 3a and 4a were supported, with innovation mediating the relationships between entrepreneurial orientation and firm growth ($p < 0.001$) and between human capital and firm growth ($p < 0.001$). These results highlight the critical role of innovation as a mediator, emphasising that the effects of both entrepreneurial orientation and human capital on firm growth are enhanced through innovative practices.

5.5.3. Research Questions 5 & 6: Mediation by Motivation

Hypothesis 5a was not supported ($p = 0.140$), indicating no significant mediation of motivation in the relationship between entrepreneurial orientation and firm growth. Conversely, Hypothesis 6a was supported, showing significant mediation by motivation in the relationship between human capital and firm growth ($p = 0.009$). This suggests that motivation significantly

influences how human capital translates into growth, while its role in the entrepreneurial orientation context is less pronounced.

5.5.4. Research Questions 7 & 8: Moderation by Firm Age

Neither Hypothesis 1b nor 2b was supported ($p = 0.178$), indicating that firm age does not moderate the relationships examined. This suggests that age-related factors may not significantly influence the dynamics of growth in small firms, pointing towards the need for further exploration of other moderating variables.

5.5.5. Research Questions 9 & 10: Moderation by Industrial Sector

Hypothesis 1c was supported ($p = 0.020$), indicating that the industrial sector moderates the relationship between entrepreneurial orientation and firm growth. However, Hypothesis 2c was not supported ($p = 0.160$). The significant moderation by industrial sector emphasises that growth strategies may need to be tailored to specific industry contexts.

5.5.6. Research Questions 11 & 12: Moderation by Gender

Both Hypotheses 1d and 2d were not supported ($p = 0.706$ and $p = 0.595$, respectively), indicating no moderating effect of gender. This finding suggests that gender may not play a significant role in the growth dynamics of small firms, indicating a potential area for future research.

5.5.7. Reconceptualised model

Figure 5.10 provides a graphical illustration of the conceptual model.

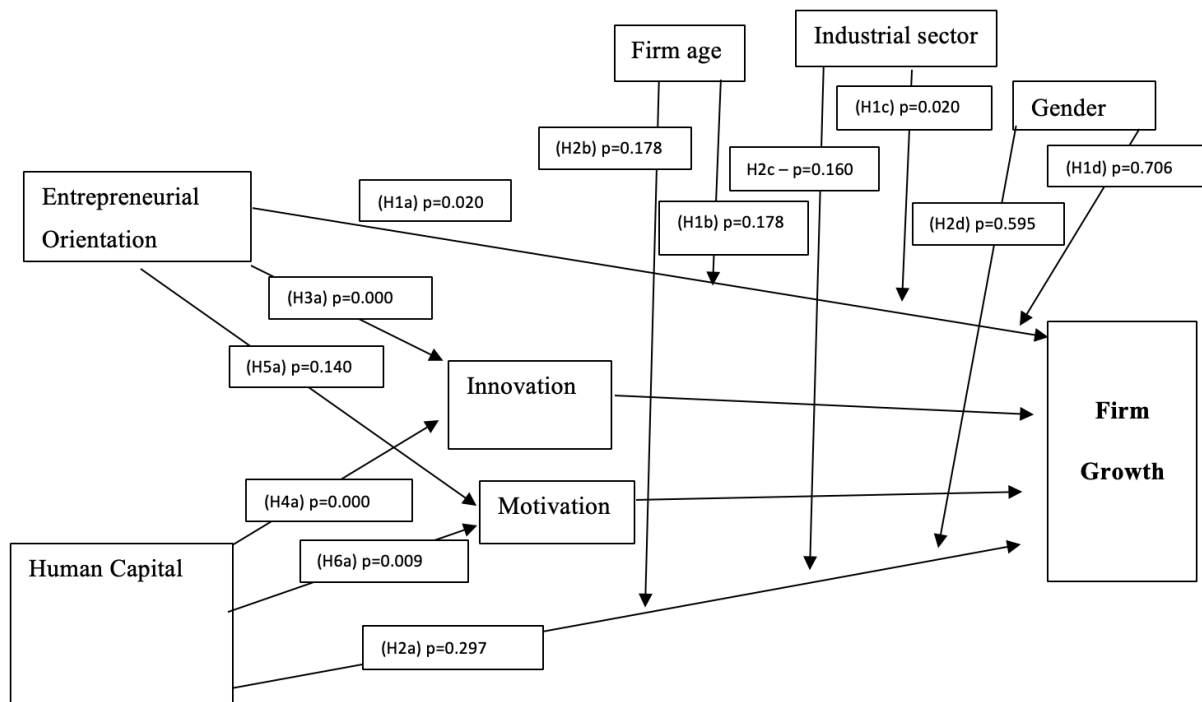


Figure 5.9: Reconceptualised Model

Source: Author (2023)

5.6. CONCLUSION

This study explored the relationships between entrepreneurial orientation, human capital, innovation, motivation, and firm growth through well-defined research questions and corresponding hypotheses. The results of the PLS-SEM analysis revealed that entrepreneurial orientation significantly drives small firm growth, supported by the mediating role of innovation. However, human capital alone did not significantly impact growth, although its influence was enhanced through motivation, which acted as a mediator. Firm age did not moderate the relationships examined, indicating that age may not significantly affect growth dynamics. The industrial sector was found to moderate the relationship between entrepreneurial orientation and growth, highlighting the importance of contextual factors.

In contrast, gender showed no moderating effects on either relationship. These findings underscore the critical roles of entrepreneurial orientation and innovation in fostering growth while suggesting that tailored strategies considering industry contexts may be essential for small firms' success. The following chapter discusses these findings and their implications.

CHAPTER 6: DISCUSSION AND IMPLICATIONS OF FINDINGS

6.1. INTRODUCTION

This chapter discusses the SLR results in Chapter 4 and the empirical analysis in Chapter 5. The discussion of the SLR is structured according to the research questions, and the discussion of the empirical firm-level analysis is structured similarly to that of the literature review. This chapter concludes with a summary.

6.2. DISCUSSION OF PHASE 1

Chapter 4 discusses the findings from the SLR, and the discussion is provided in this chapter. Three clusters were identified through bibliographic coupling, which guided the thematic development of content analysis. This content analysis provides the basis for identifying whether the SLR could answer the two questions posed in the SLR.

6.2.1. To what extent does human capital influence small firm growth?

The co-word analysis outlines that human capital occurred 5 times in the literature. This shows limited publications on the relationship between human capital and small firm growth pre-COVID-19. This contradicts sentiments by Sriyani (2010) and Lafuente and Rabetino (2011), who found that human capital positively impacts small firm growth. None of the themes in this study depict this relationship. However, these two on Firm Growth: Motivation, Innovation, and Growth Strategies provide insights into the relationship between various factors, including growth orientation, innovation activities, and resource slack, and their influence on firm growth. Although the articles do not explicitly focus on the role of human capital in small firm growth, they indirectly address aspects related to human capital. For instance, McKelvie *et al.* (2017) examine how innovative activities mediate the relationship between growth orientation and firm growth, which may involve using human capital to drive innovation.

Similarly, Stam and Wennberg (2009) investigate the effects of R&D on new product development and employment growth, highlighting the importance of human capital in innovation-driven growth. Additionally, Delmar and Wiklund (2008) explore the influence of small business managers' growth motivation on firm growth, which could be associated with utilising and managing human capital within the organisation. However, the relationship between human capital and firm growth is complex, and the reasons for starting a business

mediate this relationship (El Shoubaki *et al.*, 2019). Therefore, while the articles may not directly address the extent of human capital's influence on small firm growth, they provide valuable insights into factors that may be intertwined with human capital dynamics in driving firm growth.

6.2.2. To what extent does innovation influence small firm growth?

The articles provide substantial evidence regarding the influence of innovation on small firm growth across the three themes. Firstly, within the theme of Patterns, Processes, and Persistence of Innovation and Firm Growth, studies such as those by Coad *et al.* (2010) and McKelvie *et al.* (2017) underscore the significance of innovative activities in driving firm growth trajectories. These activities include the launch of new products, engagement in R&D, and adopting growth-oriented strategies, all of which are associated with fostering innovation within small firms. Secondly, under the theme of Firm Growth: Motivation, Innovation, and Growth Strategies, research by McKelvie and Wiklund (2010) emphasises the importance of understanding different growth modes, including organic and acquisition strategies, and how they relate to innovation activities within small firms. Finally, under theme three of Growth Dynamics Across Industries and Firm Sizes, studies by Wennberg *et al.* (2016) and Bradley *et al.* (2011) delve into the nuanced relationship between resource slack, entrepreneurial management, and firm growth, suggesting that effective use of resources for innovation purposes can contribute to sustained growth. The findings across these themes consistently highlight the pivotal role of innovation in influencing small firm's growth, indicating its significance as a key driver of firm success and competitiveness.

6.3. DISCUSSION OF PHASE 2

The results of the statistical testing are reported in Chapter 5. This chapter highlights the core context in which the hypothesised model was tested. The results (see Chapter 5) indicate that 7 out of 12 hypotheses were accepted, and those rejected mainly were on the moderation effects. The discussion proceeds as follows. The results of testing the null hypotheses related to the associations between entrepreneurial orientation, human capital, innovation, motivation, firm age, industry, gender, and small firm growth are discussed below. Each heading, however, is in the form of the hypothesis, not the null hypothesis.

Table 6.1: The results of hypothesis testing

Hypothesis	Result
H1a: There is no association between entrepreneurial orientation and small firm growth	Null Hypothesis Rejected
H1b: Firm age does not moderates the relationship between entrepreneurial orientation and firm growth	Null Hypothesis Accepted
H1c: Industrial sector does not moderate the relationship between entrepreneurial orientation and small firm growth	Null Hypothesis Rejected
H1d: Gender does not moderate the relationship between entrepreneurial orientation and small firm growth	Null Hypothesis Accepted
H2a: There is a no association between human capital and small firm growth	Null Hypothesis Accepted
H2b: Firm age does not moderate the relationship between human capital and small firm growth	Null Hypothesis Accepted
H2c: Industrial sector does not moderate the relationship between human capital and small firm growth	Null Hypothesis Accepted
H2d: Gender does not moderate the relationship between human capital and small firm growth	Null Hypothesis Accepted
H3a: Innovation does not mediate the relationship between entrepreneurial orientation and small firm growth	Null Hypothesis Rejected
H4a: Innovation does not mediate the relationship between human capital and small firm growth	Null Hypothesis Rejected
H5a: Motivation does not mediate the relationship between entrepreneurial orientation and small firm growth	Null Hypothesis Accepted
H6a: Motivation does not mediate the relationship between human capital, motivation, and small firm growth	Null Hypothesis Rejected

Source: Author

6.3.1. Entrepreneurial Orientation

Hypothesis 1a: There is a positive and significant association between entrepreneurial orientation and small firm growth

The study examined the relationship between EO and small firm growth, drawing from findings from Hughes and Morgan (2007), Rauch *et al.* (2009), Kraus *et al.* (2012), Wang and Yen (2012), Rosenbusch *et al.* (2013), Kollmann and Stockmann (2014), Lechner and Gudmundsson (2014), and Rezaei and Ortt (2018).

H1a: The hypothesis suggesting a positive association between EO and small firm growth was accepted, with a p-value of 0.020 (one-tailed). This indicates that statistical evidence supports that EO positively influences small firm growth.

The findings of this study align with seminal works in the field regarding the positive impact of EO on small firm growth. Covin and Slevin (1989) first found the significance of EO in enhancing firm performance, suggesting that proactive, risk-taking, and innovative behaviours lead to competitive advantage and growth. Similarly, Lumpkin and Dess (1996) expanded this framework by identifying distinct dimensions of EO, asserting that each plays a critical role in shaping a firm's growth.

The current study's results, which reject the null hypothesis (H1a), indicate a significant relationship between EO and small firm growth, supporting earlier empirical evidence provided by Rauch *et al.* (2009), who found a positive moderate effect of EO on firm performance. Furthermore, the R^2 value of 0.104 suggests that EO accounts for 10.4% of the variance in small firm growth, which, while modest, underscores the model's predictive capability.

Literature continues to explore the EO-growth relationship. For instance, Wang and Yen (2012) and Kollmann and Stockmann (2014) argue for a similar impact of EO dimensions on firm performance, while researchers like Rauch *et al.* (2009) and Rosenbusch *et al.* (2013) identify varying effects across these dimensions. This nuanced perspective highlights the importance of understanding how different EO attributes interact with specific firm contexts. Moreover, Simmons (2010) suggests that the relationship between EO and performance may only sometimes be directly positive, suggesting that external and internal factors can significantly influence outcomes. Kosa *et al.* (2018) further elaborate on this complexity, finding positive relationships between autonomy, risk-taking, proactiveness and firm growth, emphasising the need for a contextual understanding of EO.

The implications of the current study's findings are consistent with recent research emphasising the significant influence of EO on firm growth across various contexts. For instance, Karimi *et al.* (2021) and Omisakin and Adegoke (2022) demonstrate a positive relationship between EO and firm growth within specific sectors, such as agricultural SMEs in Iran and family businesses in New Zealand. These studies reinforce the robustness of EO as a valuable construct in the contemporary SME landscape.

However, the findings also highlight the ongoing discourse regarding the complexity of the EO-growth relationship. While some studies establish a direct relationship (Bonareri Bosire, 2024), others indicate that this relationship may not be linear and is influenced by additional moderating factors, such as entrepreneurial leadership and market orientation (Karimi *et al.*, 2021; Aftab *et al.*, 2022). Furthermore, Irawan *et al.*'s (2023) work underscores the potential for varying impacts of EO dimensions, as evidenced by their systematic review of studies conducted between 2016 and 2021.

Exploring non-linear relationships, such as the inverted U-shape proposed by Šlogar *et al.* (2023), adds another layer to the discussion, indicating that while EO generally promotes financial performance, there are thresholds beyond which the relationship may change. This aligns with the earlier findings of Zhao *et al.* (2011), who highlight the influence of contextual factors' impact on EO's effectiveness factors on the effectiveness of EO in driving firm growth.

6.3.2. Human Capital

Hypothesis 2a: There is a positive and significant association between human capital and small firm growth

H2a: The hypothesis suggesting a positive association between human capital and firm growth was rejected, with a p-value of 0.297 (one-tailed). This indicates insufficient statistical evidence to support the notion that human capital positively influences small firm growth. The results showed that the null hypothesis (H2a) was accepted, indicating no significant relationship between human capital and small firm growth.

The R² value obtained in this study, which was 0.047, indicates that human capital accounts for only 4.7% of the variance in firm growth. This relatively low value suggests that while human capital may not be a significant predictor in this context, other unaccounted factors could substantially contribute to variations in growth. The acceptance of the null hypothesis, H2a, is somewhat expected given the limited research supporting the positive impact of human

capital on firm growth, specifically in South Africa. Furthermore, contextual variables such as industry characteristics and market conditions play a critical role in shaping the relationship between human capital and firm growth (Khan & Quaddus, 2018; Marvel *et al.*, 2016). This indicates the necessity for further research to explore how different factors interact with human capital to influence firm growth outcomes across various contexts.

The current study's findings indicate that the null hypothesis (H2a) was accepted, revealing no significant relationship between human capital and small firm growth. This contrasts with literature supporting a positive association between these variables. For instance, Unger *et al.* (2011) established a positive correlation between success and general and specific human capital, noting that specific human capital, such as industry-specific skills and expertise, exerts a more pronounced impact on firm performance than general human capital.

Building on this, Becker (1964) theorised that investments in education and work experience yield knowledge and skills that enhance productivity. Marvel *et al.* (2016) supported this view in their systematic review, identifying common constructs used to measure human capital, which include work experience, education, and demographic factors. They emphasised that work experience and education remain important in understanding human capital's contribution to firm success. However, while the literature recognises the beneficial effects of human capital on firm growth, more inquiries still need to be made regarding the influence of additional contextual factors. Khan and Quaddus (2018) and Marvel *et al.* (2016) highlight the potential moderating effects of industry characteristics, firm-specific attributes, and market conditions, suggesting that these elements could significantly impact the relationship between human capital and growth. This indicates that the context in which firms operate must be considered when assessing the role of human capital.

Recent studies have further explored human capital in different contexts. For example, Sisodia *et al.* (2021) argue that investments in human capital are essential for gaining competitive advantage, enhancing workforce productivity, and fostering innovation. Their findings illustrate how such investments can improve a firm's capacity to capitalise on growth opportunities while minimising volatility. On the other hand, Magoutas *et al.* (2012) documented a positive impact of human capital on growth rates, specifically within Greek manufacturing firms, highlighting the contextual nature of these relationships. The complexity of human capital's impact is underscored by Mustafa and Stella (2023), who identified negative correlations between human capital efficiency and firm growth in Nigerian non-financial firms,

contrasting with positive associations with employee growth. This suggests that having high levels of human capital does not guarantee firm growth and emphasises the importance of strategic investment in human resources, including training and retention strategies.

The findings of this study challenge the existing literature that links human capital positively with firm growth. While studies such as those by Marconatto *et al.* (2021) and Gürbüz and Akyol (2020) emphasise the importance of managerial experience and education in promoting firm growth, the current results suggest a more complex reality, particularly within the South African context. Marconatto *et al.* (2021) argue that factors such as firm size, funding, training, and networking connections are significantly correlated with growth, indicating that the impact of human capital may be contingent upon various external and internal factors.

6.3.3. Innovation

6.3.3.1. Hypothesis 3a: Innovation mediates the relationship between entrepreneurial orientation and small firm growth

H3a: The hypothesis suggesting that entrepreneurial orientation positively affects innovation, which positively influences small firm growth, was accepted. The mediation effect was statistically significant, with a t-value of -4.801 and a p-value of 0.000, indicating a significant negative mediation effect.

The findings of the current study, which reject the null hypothesis (H3a), indicate a significant positive relationship between EO, innovation, and small firm growth. This aligns with literature emphasising the critical role of EO in fostering innovation and enabling firm growth. For instance, seminal works by Zahra and Covin (1995) and Wiklund (1998) established the foundational understanding of how EO influences firm performance. Despite these insights, the relationship has produced mixed results, as noted by Shan, Song, and Ju (2016), indicating a further need to explore the direct link between EO and firm growth. Wales *et al.* (2013) conducted a meta-analysis highlighting a gap in understanding how EO interacts with other variables to impact firm growth. They emphasise the necessity of examining mediating variables that explain this relationship, thereby calling for more focused research. Supporting this, Harms *et al.* (2010) demonstrated that innovation partially mediates the relationship between EO and growth, suggesting that EO drives growth directly and through its influence on innovation. Recent studies have supported that EO positively influences firm growth and innovation performance. For example, Karimi *et al.* (2021) and Ince *et al.* (2023) have documented EO's positive effects on innovation outcomes. The findings are similar to Wach

et al. (2022), who noted that the impact of EO on innovation could show a U-shaped relationship depending on the scope of internationalisation. This nuance highlights the complexities inherent in the EO-innovation-growth relationship.

Moreover, the dual role of innovation—both as a driver and an indicator of entrepreneurial activities—has been acknowledged by several scholars. Schumpeter (1934), Covin and Miles (1999), and Ireland and Webb (2007) emphasise that understanding this duality is crucial for understanding the relationship between EO and innovation. The literature further establishes that innovation performance mediates the relationships between EO and firm performance and between social capital and firm performance (Ince *et al.*, 2021). The findings of this study add to this rich body of knowledge by specifically highlighting the mediating role of innovation in the EO-growth relationship. The R^2 measure of 0.107 indicates that the model accounts for 10.7% of the variance in small firm growth, suggesting that EO and innovation are significant predictors of growth. This finding aligns with the claims made by Baker and Sinkula (2009) and Renko *et al.* (2009), who highlighted that EO is a critical factor in driving innovation, further corroborating the current study's results.

Additionally, Wales *et al.* (2013) highlight the important role of innovation as a mediator. Furthermore, the meta-analysis by Reyes-Gómez *et al.* (2024) found that innovation fully mediates the relationship between EO and firm performance while partially mediating the effects of market and learning orientations. The findings of Kraus *et al.* (2023) also underscore the importance of EO in enhancing disruptive innovation within digital entrepreneurship, emphasising that a high level of EO can empower firms to leverage digitalisation as a growth opportunity rather than a constraint.

6.3.3.2. Hypothesis 4a: Innovation mediates the relationship between human capital and small firm growth

H4a: The hypothesis suggesting a positive association between human capital and innovation was accepted. The mediation effect was statistically significant, with a t-value of -5.154 and a p-value of 0.000, indicating a significant negative mediation effect. The R^2 measure of 0.096 indicates that the model accounts for 9.6% of the variance in innovation, suggesting that human capital is a significant predictor of innovation outcomes.

Rejecting the null hypothesis (H4a) in this study indicates a significant relationship between human capital and innovation, reinforcing the literature that identifies human capital as a critical determinant of innovation. Koroglu and Eceral (2015) and Lenihan *et al.* (2019)

emphasise that skilled and knowledgeable employees bring diverse perspectives and problem-solving abilities to the innovation process, driving the development of new products, services, and processes. Their work suggests that human capital is fundamental in fostering innovative capabilities within firms. Coronado *et al.* (2008) further reveal this relationship, indicating that employee qualifications and firm size positively influence innovation outcomes. Their findings demonstrate that employees with advanced degrees or specialised training significantly enhance a firm's capacity for innovative activities. This is consistent with research indicating that larger firms typically have access to broader human capital and resource pools, providing them with a competitive advantage in innovation endeavours.

The relationship between human capital and innovation is further highlighted by Schneider *et al.* (2010), who found no positive correlation between highly skilled employees and firm innovation in Germany's manufacturing sector. McGuirk and Jordan (2012) also contribute to this discourse by highlighting that higher employee education levels correlate positively with a firm's engagement in product innovation. The OECD (2011) emphasises the essential role of human capital in innovation, stating that "a higher level of human capital spurs innovation via various mechanisms, including the generation of new knowledge, adoption and adaptation of existing technologies, and human capital spillovers" (p. 25). This points out the complex role of human capital in promoting an innovative environment. McGuirk *et al.* (2015) find a significant positive relationship between managerial training opportunities and innovation outcomes in small firms. However, they acknowledge mixed results regarding the impact of education on innovation, suggesting that this relationship may depend on contextual factors such as industry characteristics and firm size. For example, Leiponen (2005) notes that technical skills acquired through specialised education significantly drive innovation within manufacturing firms.

The findings of this study align well with existing research that suggests a positive relationship between human capital and innovation. The current study's results support the notion that human capital, including attributes such as education, skills, and experience, contributes positively to innovation in small firms. This is consistent with findings from Koroglu and Ecerel (2015), Lenihan *et al.* (2019), and the OECD (2011), which all underscore the importance of skilled employees in driving innovative processes. Moreover, the research highlights the nuances in the relationship between human capital and innovation, aligning with the observations made by McGuirk *et al.* (2015), which indicate that contextual factors, such as industry and firm size, can significantly influence this relationship. The mixed results

observed in various studies, including Schneider et al. (2010), suggest that while the overall trend indicates a positive relationship, specific conditions may lead to different outcomes. The findings also align with recent discussions in the literature regarding the importance of tailoring human capital development strategies to particular contexts (Eriksson *et al.*, 2023). They note that in developed economies, human capital accumulation positively impacts innovation and growth, although various factors, including taxation, can hinder this process.

6.3.4. Motivation

6.3.4.1. Hypothesis 5a: Motivation mediates the relationship between entrepreneurial orientation and small firm growth

H5a: The hypothesis was tested that entrepreneurial orientation mediates motivation, subsequently impacting small firm growth. The provided t-value was 1.478, and the p-value was 0.140.

The current study investigates the relationship between EO, motivation, and firm growth. The findings of this study reveal that the mediation effect of motivation between EO and small firm growth is not statistically significant, suggesting a difference of opinion from existing literature that emphasises motivation's critical role. The study contradicts the findings from Ncube and Zondo (2018), which assert that intrinsic motivations among business owners positively impact the growth of SMEs in South Africa. Recent findings by Moko *et al.* (2024) indicate that motivation mediates the relationship between EO and firm performance, particularly within micro-enterprises. This suggests that motivated entrepreneurs are better positioned to leverage their orientations for improved performance outcomes. Further research by Alqahtani *et al.* (2023) highlights that the effectiveness of EO, market orientation, and entrepreneurial marketing varies depending on environmental and organisational contexts.

Huang *et al.* (2024) expand this by examining the impact of CEO regulatory focus on EO in SMEs. Their findings indicate that a promotion-focused regulatory style enhances EO, whereas a prevention-focused approach diminishes it. This insight highlights the importance of motivational attributes in influencing entrepreneurial behaviours. Motivation is also a significant factor in shaping entrepreneurial start-up ambitions. Ismail (2022) notes that intrinsic motivations, such as a desire for achievement and financial rewards, positively influence SME growth, with personality traits mediating this relationship. This aligns with earlier research by Ryan and Deci (2000), which highlights motivation's critical role in entrepreneurial behaviour. Moreover, the importance of human capital efficiency in driving

firm growth is highlighted by Mustafa and Stella (2023), who emphasise that strategic training is essential for enhancing performance. Key components of human capital—including training, skills development, and motivation—are vital for overcoming persistent underperformance in firms (Pembi *et al.*, 2023).

Although previous research has highlighted the significance of entrepreneurial motivation in facilitating firm growth, this study's results indicate insufficient evidence to support its mediation effect, specifically between EO and small firm growth. This discrepancy suggests that motivation remains an essential component of entrepreneurial success. However, its specific mediating effect between EO and growth may be contingent on other contextual factors or variables not captured in the current analysis. Despite the absence of a statistically significant mediation effect, it is crucial to recognise that motivation likely continues to play an influential role in driving entrepreneurial activities and firm growth.

6.3.4.2. Hypothesis 6a: Motivation mediates the relationship between human capital, motivation and small firm growth

Motivation was examined as a potential mediator in the relationship between human capital and small firm growth.

H6a: The hypothesis proposing that human capital leads to motivation, which subsequently impacts small firm growth, was tested. The provided t-value was 2.629, and the p-value was 0.009. Based on the provided t-value and p-value, the analysis concluded that the mediation effect of motivation between human capital and small firm growth is statistically significant. Therefore, it is concluded that there is a statistically significant positive mediation effect in the population being studied.

The findings of this study indicate that motivation significantly mediates the relationship between human capital and small firm growth. This suggests that human capital influences motivation, which positively impacts firm growth. Previous research has emphasised the importance of both human capital and motivation in driving entrepreneurial activities and firm growth. Human capital, which encompasses attributes relevant to productivity, job performance, work values, attitudes, and personality traits, is essential for entrepreneurial success. Similarly, motivation is crucial in driving entrepreneurial behaviour and outcomes, influencing persistence, effort, and goal attainment. The statistically significant positive mediation effect observed in this study suggests that human capital directly impacts small firm growth and indirectly influences firm growth through its effect on motivation. This underscores

the importance of investing in human capital development and fostering a motivational environment within small firms to promote growth and success.

6.3.5. Firm Age

6.3.5.1. Hypothesis 1b: Firm age moderates the relationship between entrepreneurial orientation and firm growth

H1b: The hypothesis that firm age moderates the relationship between EO and small firm growth was tested. The p-values for EO, firm age, and the interactive term were 0.51, 0.32, and 0.178, respectively.

The analysis concluded that moderation does not exist in the relationship between EO and small firm growth by firm age. Although the main effect of the moderator variable (firm age) was statistically significant, indicating that firm age impacts small firm growth, the interaction effect between EO and firm age was not statistically significant. This implies that firm age does not significantly influence the relationship between EO and small firm growth.

The findings of this study both align and conflict with recent research in the field. On the one hand, they corroborate existing literature that identifies firm age as a significant factor affecting growth dynamics, particularly in emphasising the agility of younger firms (Ferreira & Azevedo, 2008; Anderson & Eshima, 2013). Studies by Rauch *et al.* (2009) and Coad *et al.* (2013) establish a clear framework for examining how firm age correlates with growth, highlighting the agility of younger firms versus the stability often seen in older firms.

On the other hand, the study's conclusion that firm age does not moderate the relationship between EO and growth presents a divergence from some research suggesting a more nuanced interaction between these variables (Coad *et al.*, 2013; Neneh & Van Zyl, 2017). This contrast indicates that while firm age is important, entrepreneurial orientation's influence may go beyond age-related factors.

6.3.5.2. Hypothesis 2b: Firm age moderates the relationship between human capital and small firm growth

H2b: The hypothesis that firm age moderates the relationship between human capital and small firm growth was tested. The p-values for human capital, firm age, and the interactive term were 0.284, 0.26, and 0.178, respectively.

The analysis concluded that moderation does not exist in the relationship between human capital and small firm growth by firm age. Although the main effect of the moderator variable (firm age) was statistically significant, indicating that firm age impacts small firm growth, the interaction effect between human capital and firm age was not statistically significant. This implies that firm age does not significantly influence the relationship between human capital and small firm growth.

The findings indicate that while firm age is a significant factor influencing small firm growth, it does not moderate the relationship between human capital and small firm growth. This finding contrasts with prior research highlighting firm age's importance in understanding firm growth dynamics. However, in this study, firm age did not moderate the relationship between human capital and small firm growth. This suggests that human capital may similarly influence small firm growth regardless of a firm's age.

6.3.6. Industrial Sector

6.3.6.1. Hypothesis 1c: Industrial sector moderates the relationship between entrepreneurial orientation and small firm growth

H1c: The hypothesis was tested that the industrial sector moderates the relationship between EO and small firm growth. The p-values for EO, the industrial sector, and the interactive term were 0.023, 0.113, and 0.020, respectively.

The analysis concluded that the industrial sector moderates the relationship between EO and small firm growth. The statistically significant p-value for the interactive term indicates that the presence of the industrial sector influences the relationship.

The findings underscore the critical role of industry context in shaping the relationship between EO and small firm growth. Research has shown that EO positively impacts growth, particularly in manufacturing sectors (Rigtering *et al.*, 2014). Firms that adopt an entrepreneurial orientation in manufacturing experience better growth outcomes than those in other industries. Recent studies have further reinforced this relationship. For instance, EO enhances innovation ambidexterity, enabling firms to balance exploration and exploitation (Horchani & Zouaoui, 2023). This ability is essential for firms aiming to innovate while optimising existing processes.

Additionally, EO directly influences strategic capabilities in manufacturing SMEs, emphasising its significance in driving performance (Mosonik *et al.*, 2024). This body of research supports the idea that EO's impact on firm performance is context-dependent. Studies

from Miller (2011) and Wales *et al.* (2013) demonstrate that different sectors experience varying effects from EO. The recent findings regarding EO's positive influence on innovation and firm growth highlight the importance of understanding how various industries can leverage EO to foster innovation and enhance growth.

6.3.6.2. Hypothesis 2c: Industrial sector moderates the relationship between human capital and small firm growth

H2c: The hypothesis proposing that the industrial sector moderates the relationship between human capital and small firm growth was tested. The p-values for human capital, the industrial sector, and the interactive term were 0.166, 0.089, and 0.160, respectively.

The analysis concluded that moderation does not exist in the industrial sector's relationship between human capital and small firm growth. Although the main effect of the moderator variable (industrial sector) was statistically significant, indicating that the industrial sector impacts small firm growth, the interaction effect between human capital and the industrial sector was not statistically significant. Therefore, the industrial sector only significantly influences the relationship between human capital and small firm growth.

However, in the context of this study, the industrial sector did not moderate the relationship between human capital and small firm growth. This suggests that while industry-specific factors may influence small firm growth, they do not significantly alter the impact of human capital on that growth. In manufacturing firms, the influence of human capital on innovation varies by size; employee capabilities are crucial for small firms, while internal training is vital for larger ones (Segantini, 2024).

The findings indicate that while the industrial sector primarily affects small firm growth, it does not moderate the relationship between human capital and small firm growth. This observation contrasts with previous research emphasising the industrial sector's influence in shaping the relationship between human capital and entrepreneurial success. Studies by Gupta *et al.* (2013), Choi and Williams (2016), and Cowling *et al.* (2018) underscore the importance of considering the industrial sector when examining the effects of human capital on small firm growth. Additionally, research by Bowmaker-Falconer and Herrington (2019/2020) provides insights into the distribution of early-stage entrepreneurship activity across various industries.

6.3.7. Gender

6.3.7.1. Hypothesis 1d: Gender moderates the relationship between entrepreneurial orientation and small firm growth

H1d: The hypothesis that gender moderates the relationship between EO and small firm growth was tested. The p-values for EO, gender, and the interactive term were 0.022, 0.749, and 0.706, respectively.

The analysis concluded that moderation does not exist in the relationship between EO and small firm growth by gender. Although the main effect of the moderator variable (gender) was statistically significant, indicating that gender impacts small firm growth, the interaction effect between EO and gender was not statistically significant. Therefore, gender does not significantly influence the relationship between EO and small firm growth.

This implies that regardless of gender, EO similarly influences small firm growth. Board gender diversity is associated with global lower firm-level climate change exposure (Trinh *et al.*, 2023). Moreover, Živković *et al.* (2024) observed that women-led companies in Serbia's machinery and equipment sector show higher adoption of digital technologies, more optimistic growth visions, and stronger gender equality practices. Nonetheless, gender disparities persist in economic development. Octaviyani and Endang (2024) reported mixed effects of gender-specific factors on Indonesia's economic growth, highlighting that male and female education levels significantly negatively impact growth.

The findings contrast with prior research that has explored the role of gender in shaping entrepreneurial outcomes. Some studies suggest that gender differences impact firm growth and performance, noting that women-owned firms often face challenges that hinder their growth potential compared to those owned by men. Factors such as risk aversion, industry preference, educational background, and prior experience have been identified as influencing the differences in entrepreneurial success and performance between genders (Brixiová & Kangoye, 2016; Nziku, 2016; Honyenuga, 2019; Brixiová *et al.*, 2020;). Additionally, female-owned firms in emerging economies tend to be less innovative and productive, limiting their ability to benefit from foreign direct investment spillovers (Bournakis & Mei, 2023).

6.3.7.2. Hypothesis 2d: Gender moderates the relationship between human capital and small firm growth

H2d: The hypothesis that gender moderates the relationship between human capital and small firm growth was tested. The p-values for human capital, gender, and the interactive term were 0.296, 0.826, and 0.595, respectively.

The analysis concluded that moderation does not exist in the relationship between human capital and small firm growth by gender. Although the main effect of the moderator variable (gender) was statistically significant, indicating that gender impacts small firm growth, the interaction effect between human capital and gender was not statistically significant. Therefore, gender does not significantly influence the relationship between human capital and small firm growth.

The findings suggest that while gender mainly affects small firm growth, it does not moderate the relationship between human capital and small firm growth. This implies that regardless of gender, human capital influences small firm growth. Khan and Vieito (2013) have shown a positive relationship between female CEOs and firm performance, indicating improved performance compared to firms led by male CEOs.

Recent studies have indicated a shift towards greater gender parity in education and business skills among entrepreneurs (Pimpa, 2021). Pereira and Manzo (2024) find a positive correlation between women's education level and their likelihood of engaging in entrepreneurial activities, as education provides technical skills, boosts confidence, and expands networking opportunities. Nyakudya *et al.* (2024) found that individual financial and human capital resources have a weaker positive effect on growth aspirations for female entrepreneurs than for males. In contrast, social knowledge and role models have a stronger positive impact.

However, while Allison *et al.* (2021) suggest that female-owned firms often employ educated and skilled employees, leading to higher labour costs, other studies, such as Nichter and Goldmark (2009), did not find a significant relationship between gender and firm growth. These varying findings underscore the complexity of the gender-firm growth relationship and suggest that while gender may still be an essential consideration in entrepreneurship, its direct impact on small firm growth may be less evident than other factors such as firm age or industry context.

6.4. COMPARISON OF PHASE 1 AND 2 FINDINGS

The findings of Phases 1 and 2 shed light on the study of small firm growth. Only two questions were similar between the two phases; however, some links can be made with the other research questions in the study.

6.4.1. Research Question 1: To What Extent Does Human Capital Influence Small Firm Growth?

Phase 1 Findings: The content analysis in Phase 1 suggested that human capital is crucial in supporting innovation and firm growth. The emphasis was on how skilled employees drive innovation, highlighting the indirect relationship between human capital and growth through innovation.

Phase 2 Findings: In Phase 2, statistical analysis indicated that human capital did not significantly influence small firm growth. This outcome aligns with Phase 1's implication of human capital's importance in firm growth.

6.4.2. Research Question 2: To What Extent Does Innovation Influence Small Firm Growth?

Phase 1 Findings: Phase 1 established a relationship between innovation and firm growth, identifying key themes such as innovation's persistence and its role in strategic decision-making. Articles consistently indicated that innovation is a primary driver of growth, reinforcing firms' need to invest in innovative practices.

Phase 2 Findings: Phase 2 corroborated these findings by demonstrating significant direct relationships between innovation and small firm growth, mainly through mediating motivational factors. The statistical outcomes confirmed that innovation substantially impacts growth, emphasising its critical role across various contexts. This aligns with studies that underline the necessity for continuous innovation to sustain competitive advantages (Horchani *et al.*, 2023).

6.4.3. Research Question 3: To What Extent Does Entrepreneurial Orientation Influence Small Firm Growth?

Phase 2 Findings: The analysis indicated that entrepreneurial orientation significantly influences small firm growth. Research by Covin and Slevin (1989), Lumpkin and Dess (1996),

Rauch *et al.* (2009), Wales *et al.* (2013), Kosa *et al.* (2018); Karimi *et al.* (2021), and Omisakin and Adegoke, (2022) supports this.

6.4.4. Research Question 4: To What Extent Does Innovation Influence the Relationship Between Entrepreneurial Orientation and Small Firm Growth?

Phase 2 Findings: The mediation analysis revealed that innovation significantly influences this relationship, reinforcing that entrepreneurial orientation drives growth primarily through innovative activities. This supports the Phase 1 findings regarding innovation's role in fostering growth.

6.4.5. Research Question 5: To What Extent Does Motivation Influence the Relationship Between Entrepreneurial Orientation and Small Firm Growth?

Phase 2 Findings: Results indicated that motivation does play a mediating role, suggesting that entrepreneurial orientation's effect on growth is partly contingent on the motivational levels within the firm.

6.4.6. Research Question 6: To What Extent Does Motivation Influence the Relationship Between Human Capital and Small Firm Growth?

Phase 2 Findings: Motivation significantly mediates the relationship between human capital and firm growth. This links back to Phase 1's insights about the importance of skilled employees and their motivation in driving innovation and growth.

6.4.7. Research Question 7: To What Extent Does Firm Age Influence the Relationship Between Entrepreneurial Orientation and Small Firm Growth?

Phase 2 Findings: The results suggested that firm age does not significantly moderate this relationship. This finding contrasts with literature that suggests older firms may have more established networks, potentially impacting their growth differently.

6.4.8. Research Question 8: To What Extent Does Firm Age Moderate the Relationship Between Human Capital and Small Firm Growth?

Phase 2 Findings: Similar to the previous question, firm age did not significantly moderate the relationship between human capital and growth, suggesting that age may not be as critical a factor in this context as previously thought.

6.4.9. Research Question 9: To What Extent Does Industrial Sector Influence the Relationship Between Entrepreneurial Orientation and Small Firm Growth?

Phase 2 Findings: The analysis indicated a significant moderating effect of the industrial sector, suggesting that the context in which a firm operates can significantly alter the relationship between entrepreneurial orientation and growth. This emphasises the need for tailored strategies based on sector-specific dynamics.

6.4.10. Research Question 10: To What Extent Does Industrial Sector Moderate the Relationship Between Human Capital and Small Firm Growth?

Phase 2 Findings: No significant moderation was found here, suggesting that the industrial context might not influence how human capital affects growth as strongly as it does for entrepreneurial orientation.

6.4.11. Research Question 11: To What Extent Does Gender Influence the Relationship Between Entrepreneurial Orientation and Small Firm Growth?

Phase 2 Findings: The results indicated no significant influence of gender on this relationship, suggesting that gender dynamics may not be as impactful in shaping entrepreneurial outcomes in this sample.

6.4.12. Research Question 12: To What Extent Does Gender Influence the Relationship Between Human Capital and Small Firm Growth?

Phase 2 Findings: Similar to the previous question, gender did not significantly influence this relationship, indicating a potential gap in understanding how gender interacts with human capital in growth.

6.5. IMPLICATIONS OF PHASE 1 AND 2 FINDINGS

The study's findings from Phase 1 and Phase 2 offer several key implications for theory, practice, and future research regarding small firm growth. This study advances the understanding of small firm growth and offers critical insights into how societies and the SME sector can better prepare for future pandemics. The relationship between the variables of this study and firm growth reveals several pathways for resilience and adaptability in crises.

6.5.1. Theoretical Implications

- The findings reinforce that human capital indirectly supports firm growth. This aligns with the insights of Audretsch *et al.* (2014) and Segarra and Teruel (2014), who emphasise the complexity of innovation's role in firm growth.
- Innovation consistently emerged as a key driver of growth in both phases of the study. This aligns with existing literature that identifies innovation patterns and processes as essential for sustained firm performance (Bianchini *et al.*, 2018; Dosi *et al.*, 2020).
- The research highlights the importance of analysing how industry sectors and the age of a firm affect entrepreneurial outcomes. This contributes to theories that emphasise the role of external factors in a firm's performance.
- The absence of gender as a moderating factor challenges existing theories that argue gender significantly influences entrepreneurship. This calls for a re-evaluation of gender roles in entrepreneurship research.

6.5.2. Practical Implications

- For practitioners, the strong link between innovation and growth highlights the necessity for small firms to invest in innovative practices and R&D activities. The insights from Stam and Wennberg (2009) regarding R&D in early-stage firms suggest that small firms should prioritise their innovative capacities to leverage growth opportunities effectively. Encouragement of R&D investments within small firms can help leverage innovation as a mediator for growth, particularly in industries where EO is linked to innovation capabilities.
- Given the findings about human capital's indirect role, firms should consider investing in training and development programs to enhance employee skills, which can lead to improved, innovative outcomes. The literature suggests that understanding the specific investments in human capital that yield the best returns on growth is critical (McKelvie *et al.*, 2017). Training programs should focus on developing entrepreneurial skills and mindsets for all individuals, regardless of gender, to ensure a broad-based approach to fostering innovation and growth in small firms.
- The significant moderating effects of the industrial sector emphasise the need for tailored growth strategies that account for industry-specific dynamics. Small firms

should analyse their sector's characteristics and adjust their entrepreneurial approaches accordingly (Nunes *et al.*, 2012). Business support programs should be tailored to specific industrial contexts, recognising that the effectiveness of entrepreneurial strategies can vary significantly across sectors.

6.5.3. Societal Preparedness for Future Pandemics

6.5.3.1. Investment in Skills Development

The research highlights the crucial role of skilled employees in driving innovation (Audretsch *et al.*, 2014). Societal initiatives that promote education and vocational training can enhance the human capital in the SME sector. By equipping individuals with relevant skills, societies can foster a workforce capable of adapting quickly during disruptions. The significance of human capital in driving growth highlights the need for ongoing skills training and development. Societies should invest in educational programs that prepare the workforce for shifts in demand during crises, particularly in areas like healthcare, technology, and digital services.

6.5.3.2. Promoting Lifelong Learning

The findings suggest that ongoing education is important for a resilient workforce. Support for lifelong learning programs can help individuals continuously update their skills, allowing firms to respond effectively during crises. This aligns with McKelvie and Wennberg's (2016) emphasis on the need for skilled labour to implement growth strategies.

6.5.3.3. Culture of Innovation

The significant role of innovation in driving growth emphasises the need for a culture of innovation. Societal initiatives, such as grants or incentives for R&D, can prepare businesses to pivot in response to changing conditions, as seen during the COVID-19 pandemic when firms adapted their operations to meet new demands (Bianchini *et al.*, 2018).

6.5.3.4. Collaborative Innovation Networks

Establishing networks that connect SMEs, researchers, and larger firms can stimulate innovation and knowledge sharing. This collaboration can lead to rapid responses to crises, enabling firms to develop new solutions quickly and reinforcing the importance of innovation in competitive advantage (Nunes *et al.*, 2012).

6.5.3.5. Industrial Sector Adaptability

Given the varied impacts of pandemics across industries, tailored growth strategies that address sector-specific vulnerabilities are essential. Policymakers should work with industry leaders to identify critical sectors needing support, ensuring economic stability (Dosi *et al.*, 2020). The findings indicate that industrial sectors influence the relationship between EO and growth. Policymakers should develop sector-specific strategies to encourage resilience in key industries, ensuring they can adapt quickly to the challenges caused by pandemics.

6.5.3.6. Agile Business Models

Findings in Phase 2 indicate that entrepreneurial orientation significantly influences firm growth. Encouraging agile business models allows SMEs to adapt swiftly to market changes, as highlighted by the shift in strategies among firms during the pandemic (Segarra & Teruel, 2014). The emphasis on EO as a growth driver suggests that fostering a culture of innovation and adaptability within businesses can enhance resilience. Societies should encourage entrepreneurial initiatives that focus on agile business models capable of pivoting in response to crises.

6.5.3.7. Promoting a Motivated Workforce

The role of motivation in mediating human capital and growth indicates that employee engagement is crucial during crises. Organisations should foster a supportive workplace culture that values employee input and well-being, ensuring employees remain motivated and productive, even during challenging times.

6.5.3.8. Building Community Resilience

The literature emphasises the importance of motivation and collaborative strategies for firm success (Stam & Wennberg, 2009). Encouraging local communities to support SMEs through initiatives like “buy local” campaigns can enhance business sustainability during crises. Strong community ties facilitate resource sharing and support systems during emergencies. Encouraging collaboration among businesses, educational institutions, and government can foster innovation and resource sharing. Networks can enable rapid response to emerging challenges during pandemics, leveraging the strengths of various sectors.

6.5.3.9. Gender Equity in Business

Although gender did not moderate the relationship between EO, human capital, and growth, promoting gender equity in entrepreneurship is essential for maximising the potential of all

community members. Societies should ensure that women have equal access to resources, training, and support to participate fully in entrepreneurial activities. Fostering female entrepreneurship can lead to more diverse business perspectives, contributing to innovative solutions in times of crisis. Programs aimed at supporting women-led businesses can enhance overall societal resilience.

6.5.3.10. Public-Private Partnerships

The engagement between public entities and private businesses is vital for fostering innovation and growth. Such partnerships can streamline resource allocation during a pandemic, ensuring SMEs receive the necessary support (Serrasqueiro & Nunes, 2016). Collaborative emergency preparedness planning is essential for creating robust response frameworks. Developing partnerships between public health authorities and private sector innovators can ensure a coordinated response to health crises, harnessing entrepreneurial skills to address immediate needs.

6.6. CONCLUSION

This chapter discussed the findings of Phase 1 and 2 of the research. In Phase 1, while the literature on the direct influence of human capital on small firm growth is limited, insights from various themes indirectly shed light on its importance. Studies emphasise the role of innovative activities, such as R&D and growth-oriented strategies, in driving firm growth, highlighting the involvement of human capital in innovation processes.

In Phase 2, the findings provide valuable insights into the complex relationships of factors influencing small firm growth. By examining various constructs and their relationships, including EO, human capital, motivation, and the moderating effects of factors such as firm age, industrial sector, and gender, this research contributes to a deeper understanding of small firm growth. The results indicate that while EO and human capital are essential drivers of small firm growth, their effects are influenced by contextual factors and mediated by variables such as motivation and innovation. The moderation effects suggest that the impact of EO and human capital on firm growth varies across different industries, firm ages, and genders. Furthermore, the significant mediation effect of motivation underscores its crucial role in translating human capital into tangible firm outcomes, highlighting the importance of fostering a motivational environment within small firms.

The implications for entrepreneurial practice are substantial. By recognising the importance of human capital and motivation, SMEs can strategically invest in employee development and create a culture fostering innovation and growth. This aligns with the theoretical frameworks of seminal literature, which suggest that human capital is not just a resource but a dynamic capability that drives innovation and competitive advantage (Becker, 1964; Barney, 1991). Additionally, the insights gained from this study contribute to the theoretical development of understanding how contextual factors shape entrepreneurial outcomes, reinforcing the need for future research to explore these dynamics further. The final chapter, which follows, offers a more detailed summary of the research, its conclusions, and recommendations for practice and further study.

CHAPTER 7: CONCLUSION AND RECOMMENDATIONS

7.1. INTRODUCTION

This chapter concludes the research. It summarises the research and findings from the SLR (Phase 1) and firm-level analysis (Phase 2) and recommends further research and practice.

7.2. SUMMARY AND CONTRIBUTION OF THE STUDY

The study advances knowledge on small firm growth by integrating established theoretical frameworks—namely, Penrose’s theory of growth, the resource-based view, entrepreneurial orientation, and human capital theory—into a comprehensive analysis tailored to the South African context. By empirically examining the relationship between EO, human capital, motivation, and innovation, this research explains the complex relationships that drive SME growth.

The systematic literature review in this study makes a significant contribution by providing a comprehensive and structured approach to gathering and synthesising numerous research studies on firm growth. Gough *et al.* (2017) highlight that such reviews are crucial for condensing a large number of literature into manageable insights. Additionally, the scarcity of studies utilising systematic literature reviews to explore the factors influencing firm growth, as highlighted by Coad and Holzl (2012), underscores the importance of this approach.

The study contributes significantly to understanding small firm growth in post-COVID-19 South Africa by developing and testing a theoretical model that examines the relationships between various factors. The study enriches the academic literature and offers practical implications for policymakers, entrepreneurs, and other stakeholders through its findings. By emphasising the importance of factors such as entrepreneurial orientation, human capital, innovation, and motivation, policymakers can craft more effective strategies to support SMEs and foster entrepreneurship in the country. Entrepreneurs, in turn, can leverage these insights to tailor their approaches and activities, enhancing their firm’s growth. Moreover, the study’s context-specific approach ensures that its findings are directly relevant to the local business environment, offering actionable guidance for stakeholders. Furthermore, the study sheds light

on SME vulnerabilities by investigating firm growth in the immediate aftermath of COVID-19. It underscores the necessity for preparedness for future crises, aiding stakeholders in mitigating the impact of similar events.

Phase 2 develops and tests a theoretical model that predicts SME growth in South Africa post-COVID-19 (in the aftermath of the COVID-19 outbreak). This model tested relationships between human capital, innovation, entrepreneurial orientation, motivation, and firm growth at the owner-manager level. The model findings suggest that entrepreneurial orientation, innovation, and motivation play significant roles in the growth of small firms in South Africa post-COVID-19. At the same time, human capital alone does not show a direct association with firm growth but influences it through motivation. Additionally, factors like firm age, gender, and industrial sector moderate the relationships between entrepreneurial orientation, human capital, and firm growth.

7.2.1. Entrepreneurial Orientation and Small Firm Growth

The null hypothesis (H1a) is rejected, stating that there is no association between entrepreneurial orientation and small firm growth. By rejecting the null hypothesis regarding the association between EO and small firm growth, the study demonstrates that firms with higher EO exhibit more robust growth trajectories. This finding underscores the necessity for South African SMEs to cultivate an EO mindset, especially in the post-COVID-19 recovery phase, reinforcing the strategic importance of EO in navigating challenges and seizing new opportunities.

7.2.2. Moderating Effects of Firm Age, Industrial Sector, and Gender

7.2.2.1. Firm Age as a Moderator (H1b)

The study accepted the null hypothesis regarding firm age, indicating that firm age does not significantly moderate the relationship between EO and firm growth. This suggests that regardless of how long a firm has been in operation, the positive effects of EO on growth remain consistent. This finding implies that newer and older firms can benefit equally from adopting an entrepreneurial orientation. However, it also highlights a potential gap in understanding how the experiences and capabilities that come with age might influence the

implementation of EO practices. Future research could explore the attributes of older firms that might contribute to or detract from their ability to harness EO for growth.

7.2.2.2. Industrial Sector as a Moderator (H1c)

The study finds that the industrial sector significantly moderates the relationship between EO and small firm growth, rejecting the null hypothesis. This indicates that the impact of EO on growth is contingent upon the specific characteristics and demands of different industries. As such, growth strategies must be tailored to align with these sector-specific dynamics, suggesting that what works in one industry may not be effective in another. In contrast, the lack of moderation by firm age implies that while experience can provide valuable insights, it should not be the sole focus. SMEs should adopt dynamic and innovative strategies that adapt to changing market conditions. This highlights the necessity for sector-specific approaches that capitalise on unique opportunities and address small firms' distinct challenges in various industries.

7.2.2.3. Gender as a Moderator (H1d)

Similarly, accepting the null hypothesis for gender indicates that it does not moderate the relationship between EO and firm growth. This finding is significant as it suggests that the positive impact of EO on growth is universally applicable, irrespective of whether the firm is male-led or female-led. While gender primarily affects small firm growth, its lack of moderation implies that both male and female entrepreneurs can leverage EO effectively to drive firm growth. However, this finding contrasts with existing literature suggesting gender may influence entrepreneurial behaviours and firm outcomes. Therefore, future studies might delve deeper into the nuances of how gender-specific factors (such as risk tolerance or networking capabilities) could influence the entrepreneurial processes without necessarily moderating the EO-growth relationship.

7.2.3. Human Capital and Small Firm Growth

There is no significant association between human capital and small firm growth as both the null hypothesis (H2a) and its moderating effects (H2b, H2c, H2d) are accepted. While human capital alone does not directly correlate with firm growth, the study reveals that it significantly influences growth through motivation. This emphasises that SMEs should invest in training

and development programs that enhance skills and motivate employees, creating a skilled and engaged workforce, which is vital for driving growth post-pandemic.

7.2.4. Mediation Role of Innovation and Motivation

7.2.4.1. Innovation as a Mediator (H3a)

The study establishes that innovation mediates the relationship between EO and small firm growth, rejecting the null hypothesis. This finding indicates that the influence of EO on firm growth is realised primarily through innovative practices. It emphasises that entrepreneurial activities—such as exploring new products, enhancing processes, or adopting new technologies—translate into tangible growth outcomes for SMEs. Consequently, small firms should prioritise innovation as a critical mechanism to effectively leverage their EO, fostering resilience and adaptability in an increasingly competitive market landscape. By focusing on innovation, SMEs can better respond to evolving consumer demands and industry challenges.

7.2.4.2. Innovation as a Mediator (H4a)

The study reveals that innovation mediates the relationship between human capital and small firm growth, indicating that firms with a strong foundation in human capital—through education and skills—are better positioned to innovate. This innovation, in turn, significantly contributes to growth, suggesting that SMEs should prioritise human capital development and foster a culture of innovation to enhance their competitive edge. Strategies that encourage collaboration and creativity among employees can lead to increased innovative output, directly impacting firm growth.

7.2.4.3. Motivation as a Mediator (H5a)

The study finds that motivation does not mediate the relationship between EO and small firm growth, indicating that while EO may encourage risk-taking, innovation, and proactive behaviour, it does not rely on motivation as a pathway to influence growth. This suggests that the effects of EO on firm growth are more direct and not significantly impacted by the motivational levels of employees. Consequently, while fostering a strong entrepreneurial orientation is essential, SMEs may need to consider other factors—such as organisational structure and resource allocation—that can better harness the potential of EO to drive growth.

This insight highlights the complexity of the relationship between EO and firm growth, suggesting that a multifaceted approach is necessary to optimise growth outcomes.

7.2.4.4. Motivation as a Mediator (H6a)

The findings also show that motivation mediates human capital and small firm growth. Skilled and knowledgeable employees are more likely to be motivated, which enhances their performance and commitment to the firm. This emphasises the importance of creating a supportive work environment that encourages motivation through recognition and professional development opportunities. While motivation does not mediate the relationship between entrepreneurial orientation and firm growth (H5a), the study highlights the need for SMEs to cultivate a strong and engaged workforce to drive growth effectively.

7.3. LIMITATIONS OF THE STUDY

7.3.1. Methodological Constraints

- **Sample Size and Diversity:** The study's sample may only partially represent the diverse landscape of small firms across various industries and geographical regions. A larger and more varied sample could enhance the generalizability of the findings.
- **Cross-Sectional Design:** The study utilised a cross-sectional design, which limits the ability to draw causal inferences. Longitudinal studies would provide deeper insights into the dynamic relationships between entrepreneurial orientation, human capital, innovation, motivation, and firm growth over time.
- **Self-Reported Data:** The reliance on self-reported measures may introduce biases, as respondents might provide socially desirable answers rather than reflecting their true beliefs and practices.

7.3.2. Potential Biases

- **Response Bias:** Participants may have interpreted survey questions differently based on their backgrounds or experiences, leading to inconsistencies in responses. This bias can affect the reliability of the data collected.
- **Selection Bias:** The study may have unintentionally favoured more successful or innovative firms, which could skew the results. Including a broader range of firms, particularly those facing challenges, would offer a more balanced perspective.

- **Cultural Context:** The findings may be influenced by the cultural and economic contexts in which the firms operate. Variations in entrepreneurial practices and motivations across different regions can affect the applicability of the results to other contexts.

7.4. RECOMMENDATIONS

To resolve key challenges related to capabilities, context, and resource acquisition, SMEs and their leaders should foster entrepreneurial orientation by promoting risk-taking, innovation, and proactivity through tailored training programs. Additionally, they can enhance their growth potential by investing in human capital development, leveraging sector-specific strategies, and seeking targeted support from policymakers to create an enabling environment that maximises both local and international opportunities for expansion. To deepen their understanding of SMEs' growth and innovation challenges in South Africa, academics and practitioners should focus on several key areas based on the findings of this study:

- Conduct localised studies that explore the unique challenges SMEs face in specific sectors, such as manufacturing and services, to identify tailored strategies that address their distinct needs and constraints.
- Foster partnerships between academic institutions, industry stakeholders, and policymakers to create platforms for knowledge exchange and facilitate the sharing of best practices and innovative solutions.
- Encourage the development of innovation ecosystems that support SMEs, including access to funding, mentorship, and training programs that enhance human capital and motivation, ultimately driving innovation and growth.
- Promote research on dynamic, sector-specific strategies that SMEs can adopt to navigate the complexities of their environments, leveraging entrepreneurial orientation and innovation as primary growth drivers.
- Advocate for policies that minimise bureaucratic barriers and improve the regulatory environment for SMEs, allowing them to be more agile and responsive to market demands.

7.4.1. Recommendations for Future Research

7.4.1.1. Phase I

- Future research should investigate how specific human capital attributes—such as skills, knowledge, and experience—facilitate innovation within small firms and drive

their growth. Additionally, conducting systematic literature reviews on the relationship between human capital and firm growth could bring valuable insights that enhance understanding of this critical relationship.

7.4.1.2. Phase 2

- Further exploration of the distinct components of entrepreneurial orientation is needed to discern their impacts on small firm growth. Investigating the types of human capital that significantly influence growth, alongside how various forms of innovation (e.g., product vs. process innovation) interact with entrepreneurial orientation, would deepen the understanding of these dynamics.
- Qualitative approaches, such as case studies, could reveal how innovation increases the effects of entrepreneurial orientation on growth. In contrast, exploratory studies should assess how human capital affects innovation capabilities in small firms. Cross-sectoral analyses could explain how the relationships among human capital, innovation, and growth differ across industries, and gender-focused studies might examine differences in entrepreneurial orientation and resource utilisation between male- and female-owned businesses.
- Longitudinal studies could track changes better to understand these variables' evolving relationships and long-term impacts. Expanding research to various samples across various industries and geographical contexts would enhance the applicability of findings. At the same time, a mixed-methods approach could provide richer insights into the complexities of these relationships. Finally, in-depth case studies of firms that have successfully navigated challenges could offer valuable lessons for future entrepreneurs and policymakers.

7.4.2. Recommendations for Practice

Strategies are listed below that entrepreneurs, policymakers, and business educators can incorporate:

7.4.2.1. Foster Entrepreneurial Orientation

The study found that EO significantly influences innovation and growth, supporting findings by Wales *et al.* (2013) and Horchani *et al.* (2023) that emphasise the critical role of EO in enhancing firm performance. To foster a strong EO, it is recommended that entrepreneurs engage in practices that promote innovativeness, risk-taking, proactiveness, autonomy, and

competitive aggressiveness. The study's findings demonstrate that firms showing a strong EO are more likely to achieve growth, suggesting that training programs emphasising these dimensions could be beneficial.

7.4.2.2. Encourage Innovation through Human Capital Development

The research demonstrated that human capital positively influences innovation and growth, echoing insights from Koroglu & Eceral (2015) and Lenihan *et al.* (2019) that emphasise the importance of skilled employees in driving innovation. According to Becker's (1964) human capital theory, policymakers should develop tailored training programs for SMEs to enhance employee skills and competencies. This is crucial since the findings indicate that investments in human capital are vital for driving innovation and sustainable growth in small firms.

7.4.2.3. Address Gender Disparities in Entrepreneurship

The findings revealed that gender does impact small firm growth, although it did not moderate the EO-growth relationship. This aligns with the literature by Honyenuga (2019) and Brixiová *et al.* (2020), highlighting women-led businesses' unique challenges. Therefore, this study recommends that targeted support programs be developed for female entrepreneurs to overcome barriers to growth, such as access to funding and mentorship.

7.4.2.4. Leverage Sector-Specific Strategies

The study found that the industrial sector moderates the EO-growth relationship, supporting findings by Rigtering *et al.* (2014) that highlight the significance of industry context in shaping entrepreneurial outcomes. The findings regarding the moderating effects of industry context on EO and human capital underline the importance of tailoring strategies to specific sectors. It is recommended that entrepreneurs conduct sector analyses to understand industry dynamics better, allowing them to implement strategies that resonate with their market environments.

7.4.2.5. Policy Support for Emerging Entrepreneurs

Research indicates that fostering an enabling environment for entrepreneurship can enhance overall economic resilience, as supported by the insights from Moko *et al.* (2024) regarding the link between motivation, EO, and firm performance. Advocating for policy support for emerging entrepreneurs can create an enabling environment that enhances economic resilience. As Moko *et al.* (2024) noted, policies that provide financial and technical assistance to start-ups and small firms with high entrepreneurial orientation and innovation potential are vital. Furthermore, entrepreneurs should focus on identifying and leveraging their unique resources

and capabilities, as the resource-based view highlights, to create competitive advantages that will facilitate growth and benefit the broader South African economy. By addressing these complex challenges and maximising opportunities, SMEs can thrive locally and internationally.

7.4.2.6. Creation of Motivational Work Environments

Foster motivational work environments within small firms by implementing strategies to enhance employee engagement, job satisfaction, and goal alignment. Recognise and reward entrepreneurial initiatives, creativity, and innovation to fuel intrinsic motivation and commitment towards organisational goals.

7.4.2.7. Gender-Inclusive Entrepreneurship Policies

Develop gender-inclusive entrepreneurship policies and initiatives to address systemic barriers and promote gender equality in entrepreneurial activities. To mitigate gender-related disparities in firm growth, provide targeted support for female entrepreneurs, including access to education, mentorship programs, and financing options.

7.5. CONCLUSION

The purpose of this chapter was threefold: (i) to consolidate the findings from Phases 1 and 2, (ii) to delve into the implications of the research for both theory and practical applications, and (iii) to propose recommendations. This study enhances the understanding of small firm growth in pre- and post-COVID-19 South Africa by integrating established theoretical frameworks, such as Penrose's theory of the firm's growth, the resource-based view, entrepreneurial orientation, and human capital theory. By empirically examining the interplay among EO, human capital, motivation, innovation, gender and firm age, the research sheds light on the dynamics that drive SME growth during recovery. Key findings reveal that while EO significantly influences firm growth, human capital alone does not show a direct association; rather, it affects growth indirectly through motivation. Additionally, innovation mediates the relationships between EO and human capital with firm growth, highlighting the critical role of innovative practices in translating entrepreneurial activities into tangible outcomes. The study also finds that the industrial sector moderates the relationship between EO and growth, suggesting that strategies should be tailored to specific contexts. The study's contributions lie in its systematic literature review approach, which comprehensively synthesises existing research and develops a theoretical model that emphasises the complex relationships among key growth factors. Practical implications for policymakers, entrepreneurs, and stakeholders

include the need for targeted support programs that enhance human capital and foster an entrepreneurial mindset, particularly in the face of ongoing economic challenges. In conclusion, the findings underscore the importance of a proactive entrepreneurial orientation, robust innovation strategies, and a motivated workforce for driving SME growth in South Africa. Future research should explore the nuances of these relationships further and consider the distinct challenges SMEs face across various sectors to inform effective strategies that support sustainable growth.

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APPENDICES

APPENDIX A: SIGNIFICANCE OF THE STUDY

STUDIES OF ENTREPRENEURIAL ORIENTATION

Studies	EO Variables tested	Context Sample size Industry	Methodology	Main Findings
Rezaei, J., & Ortt, R. (2018).	Innovativeness Risk taking Proactiveness	- The Netherlands 279 high-tech (SMEs)	- Postal survey - SEM	The dimensions of (EO) are related in different ways to the performance of functions in a firm.
Okangi, F.P. (2019).	Innovativeness Risk taking Proactiveness	- Tanzania 132 construction firms	- Questionnaire - STATA 13.0 Software - Multiple regression analysis	- Both innovativeness and risk-taking dimensions have a significantly positive effect on the growth of profitability for local Tanzania's construction firms. - The proactiveness dimension has a negative significant effect.
Dzomonda, O & Masocha, R. (2018).	Proactiveness Innovativeness Risk taking	- Johannesburg Central Business district - South Africa 212 SMES	- Survey - Convenience sampling - SEM - SmartPLS 3	There is a significant positive relationship between EO and growth in employees, market share, and sales was established.
Mthanti, T., & Ojah, K. (2017).	Innovativeness Proactiveness Risk-taking	93 countries over the period 1980–2008	- Non-probability, convenience sample - Factor analysis - Secondary longitudinal, panel data	- South Africa is one of the worst performers on growth. The country seems to have no growth drivers. - South Africa also does not seem to have

				invested and taken risks to upgrade its technological capabilities
Neneh, B. N., & Van, Z. J. (2017).	Innovativeness Risk-taking proactiveness	- Free State Province in South Africa 285	- Self-administered questionnaires - Stratified & snowball sampling - Correlation regression analysis - SEM	- EO index has a significant positive relationship with employment growth and sales growth; the level of EO among SMEs is moderate. - Firm age significantly reduced the error of predicting sales growth by 2.3%.
Fatoki, O. (2014).	Innovativeness Risk-Taking Proactiveness	- South Africa - Retail sector	- Self-administered questionnaires - regression analyses	Micro enterprises are adept in introducing new product lines and also making changes to the product line
Krauss, S.I., Frese, M., Friedrich, C., & Unger, J.M. (2005).	Innovativeness Risk-Taking Proactiveness Autonomy Competitiveness	- South Africa (Cape Town) - questionnaires 248	Hierarchical regression analyses	Positive relationships between EO and its components with business performance.
Dzomonda, O., & Fatoki, O. (2019).	Innovativeness Proactiveness Risk Taking	- South Africa 89	- Self-administered questionnaires - Regression analysis	A significant positive relationship between organisational culture and (EO) of SMEs
Anlesinya, A., Eshun, P., & Bonuedi, A. A. (2015)	Proactivity Risk taking Innovation	- Ghana - Retail sector 110	- Convenient and purposive sampling - Questionnaire - Hierarchical regression	- A significant positive effect of proactiveness and risk-taking on profitability of micro enterprises that operate in the retail sector in Ghana. - However, no relationship was found between

				entrepreneurial innovativeness and profitability.
Basco, R., Hernández-Perlines, F., & Rodríguez-García, M. (2020).	Innovation Proactiveness Risk-Taking	China, Mexico, and Spain	- Questionnaire - SEM	An overall positive effect of entrepreneurial orientation on firm performance regardless of firm context
Khan, M. A., Rathore, K., & Sial, M. A. (2020).	Creativity and Innovativeness Risk Taking Propensity Proactiveness Autonomy	- Pakistan 337	- Questionnaire - SEM	Positive relationships between entrepreneurial orientation and entrepreneurial competencies, entrepreneurial competencies and entrepreneurial performance, entrepreneurial orientation and entrepreneurial performance
Callaghan, C., & Venter, R. (2011).	Innovativeness Autonomy Proactiveness Competitive Aggressiveness Risk-Taking	- Inner city traders in the City of Johannesburg, South Africa 308	- Questionnaire - Multiple linear regression	EO is associated with certain contextual and learning factors, suggesting that the provision of entrepreneurial training might contribute to the empowerment of informal entrepreneurs.
Kiyabo, K., & Isaga, N. (2020).		- Tanzania 300	SEM	competitive advantage mediates the relationship between entrepreneurial orientation and SMEs' performance for both firm growth and personal wealth performance measures.

STUDIES ON HUMAN CAPITAL

Author	Context Sample size Industry	Methodology	Findings
El Shoubaki, A., Laguir, I. & den Besten, M. (2020).	- French registered SME's 46,412 2002 to 2007	Multiple mediation models	The underlying mechanism of how human capital translates into SME growth specifically with regard to the factors mediating the relationship between human capital and business growth—is poorly understood.
Khan, E.A., & Quaddus, M. (2018).	- Four-months - Bangladesh - Service industry	- Content Analysis - Questionnaire (PLS-SEM)	There is a positive effect of demographic and psychographic factors on firm performance.
Unger, J. M., Rauch, A., Frese, M., & Rosenbusch, N. (2011).	495 studies	Meta-analysis	A significant but small relationship between human capital and success
Mthanti, T., & Ojah, K. (2017).	93 countries 1980-2008	System- GMM	The human capital—EO nexus is robust across economic development levels. However, there is a cross-country variation in the institutions—EO nexus.
Lenihana, H, McGuirk, H., & Murphy, K.R. (2019).	1070 employee-managers Ireland.	Regressions	Respondents in organizations with certain human resource systems are more likely to report motivationally relevant elements of human capital.
Sun, X, Lib, H & Ghosal, V. (2020).	China Manufacturing firms Enterprise Surveys of the World Bank	Negative Binomial and Instrumental Variables estimators Zero-inflated Negative Binomial model	human capital indicators play an important role in influencing patenting, and that some of the human capital variables appear to have a greater impact on patenting in mid-sized cities.

Kleynhans, E. P., & Labuschagne, J. R. (2012).	South Africa World Bank enterprise survey Manufacturing	Multiple regression	an inadequately educated workforce and restrictive labour regulations are the two major human capital constraints facing the South African economy.
van Uden, A., Knoben, J., & Vermeulen, P. (2017).	8223 13 developing countries in Sub-Saharan Africa Enterprise Surveys of the World Bank	logistic regression analysis	Internal mechanisms that spur human capital are of particular importance for innovative output in this context. In addition, our results indicate that specific combinations of human capital elements can even have negative effects
Gries, T., & Van Dung, H. (2014)	2006 to 2009 for 37,788 registered enterprises Vietnam	system GMM analysis	higher level of institutional factors such as business support service, land access, time costs, and informal charges will promote firm growth in both employment and capital. Furthermore the impacts of institutional factors are more significant in capital growth of firms.
Crook, T. R., Todd, S. Y., Combs, J. G., Woehr, D. J., & Ketchen Jr, D. J. (2011).	66 studies	Meta-Analysis	human capital relates strongly to performance, especially when the human capital in question is not readily tradable in labor markets and when researchers use operational performance measures that are not subject to profit appropriation

STUDIES ON FIRM GROWTH

Author	Growth indicators	Context Sample size Industry	Methodology	Findings
Achtenhagen, L., Naldi, L., & Melin, L. (2010).	Number of employees Sales ROE ROA	- Sweden 2,455 questionnaire 30 interviews 1997 and 2000	- correlation analysis and multiple regression analysis - explorative qualitative study – Semi	For practitioners, growth is a more complex phenomenon—with a strong emphasis on internal development—which differs from the

	Profit Firm's age Industry Governance		structured interviews	simplified conceptualisation of growth used in empirical studies.
Coad, A., & Hölzl, W. (2012).	Sales Assets Size Employment Age Profit Productivity		• Survey • Regressions	Growth rates are predominantly random is not just due to heterogeneity between firms.
Coad, A., & Tamvada, J. P. (2012).		2-year period (from financial year 1999–2000 to financial year 2001–2002)	• Questionnaire • Regression	Size and age have a negative impact on firm growth in the majority of specifications.
Coad, A., Daunfeldt, S. O., & Halvarsson, D. (2018).	Sales Age	• Sweden • 1998–2008	Regression	Sales growth for new ventures is characterized by positive persistence, which quickly turns negative as firms get older.
Coad, A., Segarra, A., & Teruel, M. (2016).	Sales Employment Productivity	• Spain • Community Innovation Survey for the period 2004–2010	• Quantile regressions • Heckman sample selection technique	R&D intensity is positively associated with firm growth
Hossain, M., Ibrahim, Y., & Uddin, M. (2016)	Perceived performance Employment	• 34 articles • 2006–2014	• Systematic review	There is no unified theory or model to describe small business growth. Although there are many studies on the issue, still the theory of

	Sales			small business growth is very fragmented and inconsistent.
Isaga, N. (2012).	Sales Employment Assets	- Tanzania - Furniture industry 300	- Questionnaire - Factor Analysis, regression analysis - SEM	Personality traits influence on the growth of SMEs in Tanzania. cognitive characteristics of the entrepreneurs are positively related to the growth of SMEs
Levie, J., & Autio, E. (2013)	Employment Sales Asset	- Austria, Belgium, Netherlands, Norway, Sweden Canada and United States 13 longitudinal studies	meta-analysis	The importance of growth intentions as directly affecting subsequent growth. W
Moo, F. & Eyiah, A. (2020).	Firm age Employee profile Annual Turnover Assets Financial classification Wide geographical spread	- Ghana - Construction firms 20	- Interviews - Nvivo-8	Ownership, age of the firm and level of education of owner-managers were identified by consultants as impediments to the growth of SMCs.
Nichter, S., & Goldmark, L. (2009).	Access to finance Business environment Education of owner Firm Age Gender Inter-firm cooperation Location Social networks	Developing countries	Systematic review	Key findings for four types of factors: (1) individual entrepreneur characteristics; (2) firm characteristics; (3) relational factors and (4) contextual factors

	Value chains Work experience of owner			
Peters, R. M., van Gensen, G., Isaacs, E. B. H., Botha, M. J., & Naicker, V. (2014).	Gender Education	• South Africa • 465 questionnaires	• cross-sectional • SPSS software version 20.0	A positive relationship between a business owner's/manager's level of education and business growth. There is no relationship between gender and business growth.

STUDIES ON INNOVATION

Studies	Innovation indicators	Context Sample size Industry Time period	Methodology	Main Findings
Dalgıç, B., & Fazlıoğlu, B. (2021).	R&D Product/service innovation Process innovation	• Turkey • 10,505 firms • Manufacturing and services firms • 2003–2015	• Community Innovation Surveys (CIS) of Turkish firms • Heckman's (1979) two-step procedure • Regression	Compared with services, manufacturing firms are influenced more by R&D whereas innovation outputs are more beneficial for services firms.
Spescha, A., & Woerter, M. (2019).	R&D product innovations process innovations	• Swiss firms • 7120 observations • 1996 to 2014	• Community Innovation Survey (CIS) of the European Union. • Questionnaire • Empirical analysis • pooled OLS • Random effects Fixed effect	Firms with innovations based on R&D activities show higher sales growth rates than non-innovative firms in periods dominated by economic recessions.

Colombelli, A., Haned, N., & Le Bas, C. (2013).	Product Process	- French firms 1,074 manufacturing firms - More than 20 employees 1992–2004	- Empirical analysis - Community Innovation Surveys (CIS) for French industry - Gibrat-like model - Fligner-Policello test	A strong positive effect of innovation on firm growth. Innovative firms grow more than non-innovative ones
Rosenbusch, N., Brinckmann, J., & Bausch, A. (2011).	Patents Process input process output Innovation orientation	42 empirical studies 21,270 firms	- Meta-analysis - Bivariate regression - Meta-regression	Find a negative empirical relation between innovation and firm growth
Demirel, P., & Mazzucato, M. (2012).	R&D	- US 248 firms - Pharmaceutical firms 1950 - 2008	- Regression - Arellano–Bond panel GMM estimator	The effect of innovation on firm growth may also vary considerably given certain industry characteristics. R&D is positively related to sales growth only for smaller and persistently (over 5 years) patenting firms
Coad, A., Rao, R. (2008).	Patent activity R&D expenditures	- Large sample (world) 4012 firms - High-tech sectors 1963–1998	Quantile Regression	Innovations have a large positive effect in the highest growth percentiles, but at the same time also a slightly negative effect in the lowest growth percentiles
Corsino, M., Gabriele, R. (2010).	Innovations counts	- Worldwide firms 95 firms - Semiconductors 1998–2004	- Gibrat's Law - Regression	Product innovations affect firm growth
Atalay, M., Anafarta, N., & Sarvan, F. (2013).	Product innovation Process innovation Organizational	- Turkey 113 firms - Automotive industry 2011	- Questionnaires - SPSS statistical	Technological innovation (product and process innovation) has significant and positive impact on firm

	innovation Marketing innovation			performance, but no evidence was found for a significant and positive relationship between nontechnological innovation (organizational and marketing innovation) and firm performance
Bianchini, S., Pellegrino, G., & Tamagni, F. (2018).	Inhouse R&D External sourcing Product innovation Process innovation	- Spain 26,386 firms - Manufacturing firms 2004 and 2011	- Regression - GMM-DIFF estimator	Presence of complementarities between internal R&D and product innovation, and between product and process innovations
Bocquet, R., Le Bas, C., Mothe, C., & Poussing, N. (2017).	Process innovation Product innovation	- Luxembourg 213 firms - Manufacturing and services firms 2006–2008	Ordinary least square (OLS) specification	Firms with strategic CSR achieve growth through both their product and their process innovations.
Chege, S. M., Wang, D., & Sunt, S. L. (2020).	Product Process Market	- Kenya 240 firms - ICT 2015–2020	- Questionnaire - SEM	Technology innovation influences firm performance positively.

STUDIES ON MOTIVATION

Studies	Motivation indicators	Context Sample size Industry	Methodology	Main Findings
Delmar, F., & Wiklund, J. (2008).		- Sweden - Manufacturing & Services 1994 – 1996 (1030 cases) 1998 – 1999 (863 cases)	- Pearson correlations - Cross-lagged regressions	Small business managers' growth motivation has a unique influence on firm outcome measured as

				growth in sales and in number of employees.
McKelvie, A., Brattström, A., & Wennberg, K. (2017).		- Sweden 282 firms	Hierarchical OLS regression	Overlooking the motivational component might lead to wasted efforts in encouraging subsequent innovation
Nhemachena, C., & Murimbika, M. (2018)	Extrinsic, Intrinsic, Income security Financial independence Necessity	- South Africa 91 firms	CFA Regression	Extrinsic and intrinsic motivations are important determinants of enterprise performance
Ali, R. S. (2018).	Entrepreneurial ability Opportunity (tourism environment) Business advisory support	- Ghana - Tourism sector 110 Female entrepreneurs	Spearman's rank correlation	Female tourism entrepreneurs in Ghana feel they can expand without entrepreneurial ability(ies). However, the growth of the venture is restricted by the lack of financial resources
Ncube, T.R., & Zondo, R.W.D. (2018).	Achievement needs Power needs Intrinsic	- South Africa 112 participants - Furniture manufacturing	- Questionnaires - Descriptive, - Chi-square - Correlative - SPSS (version 23.0)	Intrinsic motivational factors of business owners do influence SME growth in SA.

APPENDIX B: SYSTEMATIC LITERATURE REVIEW ON DATA EXTRACTION FORM

Year	Author	Title	Publication Title
2002	Acs, Zoltan J.; Karlsson, Charlie	Introduction to Institutions, Entrepreneurship and Firm Growth: From Sweden to the OECD.	Small Business Economics
2014	Adams, Mike; Andersson, Lars Fredrik; Hardwick, Philip; Lindmark, Magnus	Firm size and growth in Sweden's life insurance market between 1855 and 1947: A test of Gibrat's law.	Business History
2020	Agarwal, Rajshree; Braguinsky, Serguey; Ohyama, Atsushi	Centers of gravity: The effect of stable shared leadership in top management teams on firm growth and industry evolution.	Strategic Management Journal
2010	Ahlstrom, David	Innovation and Growth: How Business Contributes to Society.	Academy Of Management Perspectives
2018	Ahn, S; Yoon, J; Kim, Y	The innovation activities of small and medium-sized enterprises and their growth: quantile regression analysis and structural equation modeling	Journal Of Technology Transfer
2018	Amoroso, Sara; Link, Albert N.	Under the AEGIS of knowledge-intensive entrepreneurship: employment growth and gender of founders among European firms.	Small Business Economics
2020	Andersén, Jim; Jansson, Christian; Ljungkvist, Torbjörn	Can environmentally oriented CEOs and environmentally friendly suppliers boost the growth of small firms?	Business Strategy And The Environment
2013	Anderson, BS; Eshima, Y	The influence of firm age and intangible resources on the relationship between entrepreneurial orientation and firm growth among Japanese SMEs	Journal Of Business Venturing
2018	Anderson, RW; Bustamante, MC; Guibaud, S; Zervos, M	Agency, Firm Growth, and Managerial Turnover	Journal Of Finance
2018	Arkolakis, C; Papageorgiou, T; Timoshenko, OA	Firm learning and growth	Review Of Economic Dynamics

2011	ATERIDO, REYES; HALLWARD-DRIEMEIER, MARY; PAGÉS, CARMEN	Big Constraints to Small Firms' Growth? Business Environment and Employment Growth across Firms.	Economic Development & Cultural Change
2014	Audretsch, David; Coad, Alex; Segarra, Agustí	Firm growth and innovation.	Small Business Economics
2020	Ballestar, M.T.; Díaz-Chao, Á.; Sainz, J.; Torrent-Sellens, J.	Knowledge, robots and productivity in SMEs: Explaining the second digital wave	Journal Of Business Research
2015	Balsmeier, B; Delanote, J	Employment growth heterogeneity under varying intellectual property rights regimes in European transition economies: Young vs. mature innovators	Journal Of Comparative Economics
2014	Barba Navaretti, Giorgio; Castellani, Davide; Pieri, Fabio	Age and firm growth: evidence from three European countries.	Small Business Economics
2005	Barringer, BR; Jones, FF; Neubaum, DO	A quantitative content analysis of the characteristics of rapid-growth firms and their founders	Journal Of Business Venturing
2009	Beaudry, C; Swann, G.	Firm growth in industrial clusters of the United Kingdom.	Small Business Economics
2002	Becchetti, L; Trovato, G	The determinants of growth for small and medium sized firms. The role of the availability of external finance	Small Business Economics
2019	Belenzon, S; Shamshur, A; Zarutskie, R	CEO's age and the performance of closely held firms	Strategic Management Journal
2017	Bennett, Victor M.; Levinthal, Daniel A.	Firm Lifecycles: Linking Employee Incentives and Firm Growth Dynamics.	Strategic Management Journal
2019	Bianchini, S; Pellegrino, G	Innovation persistence and employment dynamics	Research Policy
2018	Bianchini, S; Pellegrino, G; Tamagni, F	Innovation complementarities and firm growth	Industrial And Corporate Change

2018	Bock, C; Huber, A; Jarchow, S	Growth factors of research-based spin-offs and the role of venture capital investing	Journal Of Technology Transfer
2017	Bocquet, Rachel; Le Bas, Christian; Mothe, Caroline; Poussing, Nicolas	CSR, Innovation, and Firm Performance in Sluggish Growth Contexts: A Firm-Level Empirical Analysis.	Journal Of Business Ethics
2002	Boeker, Warren; Karichalil, Rushi	ENTREPRENEURIAL TRANSITIONS: FACTORS INFLUENCING FOUNDER DEPARTURE.	Academy Of Management Journal
2005	Bothner, MS	Relative size and firm growth in the global computer industry	Industrial And Corporate Change
2011	Bradley, SW; Wiklund, J; Shepherd, DA	Swinging a double-edged sword: The effect of slack on entrepreneurial management and growth	Journal Of Business Venturing
2013	Braunerhjelm, P; Henrekson, M	Entrepreneurship, institutions, and economic dynamism: lessons from a comparison of the United States and Sweden	Industrial And Corporate Change
2016	Bravo-Biosca, Albert; Criscuolo, Chiara; Menon, Carlo	What drives the dynamics of business growth?	Economic Policy
2015	Brenner, Thomas; Schimke, Antje	Growth Development Paths of Firms-A Study of Smaller Businesses.	Journal Of Small Business Management
2011	Brinckmann, Jan; Salomo, Soeren; Gemuenden, Hans Georg	Financial Management Competence of Founding Teams and Growth of New Technology-Based Firms.	Entrepreneurship Theory And Practice
2018	Broome, Tracey; Moore, Winston; Alleyne, Philmore	Financing constraints and the R&D decision in the Caribbean.	Entrepreneurship And Regional Development
2005	Brown, J. David; Earle, John S.; Lup, Dana	What Makes Small Firms Grow? Finance, Human Capital, Technical Assistance, and the Business Environment in Romania.	Economic Development & Cultural Change
2010	Bruhn, Miriam; Karlan, Dean; Schoar, Antoinette	What Capital is Missing in Developing Countries?	American Economic Review

2002	Bruton, GD; Rubanik, Y	Resources of the firm, Russian high-technology startups, and firm growth	Journal Of Business Venturing
2006	Bryan, J	Training and performance in small firms	International Small Business Journal
2011	Bryson, A; Nurmi, S	Private sector employment growth, 1998-2004: a panel analysis of British workplaces	Cambridge Journal Of Economics
2007	Buldyrev, Sergey V.; Growiec, Jakub; Pammolli, Fabio; Riccaboni, Massimo; Stanley, H. Eugene	THE GROWTH OF BUSINESS FIRMS: FACTS AND THEORY.	Journal Of The European Economic Association
2019	Cainelli, G; Ganau, R	Related variety and firm heterogeneity. What really matters for short-run firm growth?	Entrepreneurship And Regional Development
2014	Capasso, M; Cefis, E; Frenken, K	On the existence of persistently outperforming firms	Industrial And Corporate Change
2015	Capasso, M; Treibich, T; Verspagen, B	The medium-term effect of R&D on firm growth	Small Business Economics
2010	Carr, JC; Haggard, KS; Hmieleski, KM; Zahra, SA	A STUDY OF THE MODERATING EFFECTS OF FIRM AGE AT INTERNATIONALIZATION ON FIRM SURVIVAL AND SHORT-TERM GROWTH	Strategic Entrepreneurship Journal
2004	Cassar, G	The financing of business start-ups	Journal Of Business Venturing
2005	Chih-Hai Yang; Chia-Hui Huang	R&D, Size and Firm Growth in Taiwan's Electronics Industry.	Small Business Economics
2016	Choi, KS; Lee, JD; Baek, C	Growth of De Alio and De Novo firms in the new and renewable energy industry	Industry And Innovation

2014	Choi, YR; Phan, PH	Exploration, Exploitation, and Growth Through New Product Development: The Moderating Effects of Firm Age and Environmental Adversity	Ieee Transactions On Engineering Management
2010	Coad, A	Exploring the processes of firm growth: evidence from a vector auto-regression	Industrial And Corporate Change
2013	Coad, A; Frankish, J; Roberts, RG; Storey, DJ	Growth paths and survival chances: An application of Gambler's Ruin theory	Journal Of Business Venturing
2019	Coad, A; Grassano, N	Firm growth and R&D investment: SVAR evidence from the world's top R&D investors	Industry And Innovation
2013	Coad, A; Guenther, C	Diversification patterns and survival as firms mature	Small Business Economics
2020	Coad, A; Mathew, N; Pugliese, E	What's good for the goose ain't good for the gander: heterogeneous innovation capabilities and the performance effects of R&D	Industrial And Corporate Change
2017	Coad, A; Nielsen, K; Timmermans, B	My first employee: an empirical investigation	Small Business Economics
2008	Coad, A; Rao, R	Innovation and firm growth in high-tech sectors: A quantile regression approach	Research Policy
2016	Coad, A; Segarra, A; Teruel, M	Innovation and firm growth: Does firm age play a role?	Research Policy
2018	Coad, Alex; Daunfeldt, Sven-Olov; Halvarsson, Daniel	Bursting into life: firm growth and growth persistence by age.	Small Business Economics
2016	Coad, Alex; Frankish, Julian; Roberts, Richard; Storey, David	Predicting new venture survival and growth: Does the fog lift?	Small Business Economics
2014	Coad, Alex; Guenther, Christina	Processes of firm growth and diversification: theory and evidence.	Small Business Economics
2012	Coad, Alex; Tamvada, Jaganaddha	Firm growth and barriers to growth among small firms in India.	Small Business Economics

2012	Colpan, Asli M.; Yoshikawa, Toru	Performance Sensitivity of Executive Pay: The Role of Foreign Investors and Affiliated Directors in Japan.	Corporate Governance: An International Review
2015	Coluzzi, C; Ferrando, A; Martinez-Carrascal, C	Financing obstacles and growth: an analysis for euro area non-financial firms	European Journal Of Finance
2014	Conyon, MJ; He, LR	CEO turnover in China: the role of market-based and accounting performance measures	European Journal Of Finance
2013	Corrocher, N; Cusmano, L; Lenzi, C	Growth in Knowledge-Intensive Business Services: Evidence from Lombardy	Industry And Innovation
2011	Corsino, M; Gabriele, R	Product innovation and firm growth: evidence from the integrated circuit industry	Industrial And Corporate Change
2000	Covin, JG; Slevin, DP; Heeley, MB	Pioneers and followers: Competitive tactics, environment, and firm growth	Journal Of Business Venturing
2013	Cucculelli, M; Ermini, B	Risk attitude, product innovation, and firm growth. Evidence from Italian manufacturing firms	Economics Letters
2012	Cucculelli, M; Ermini, B	New product introduction and product tenure: What effects on firm growth?	Research Policy
2014	D'Este, P; Rentocchini, F; Vega-Jurado, J	The Role of Human Capital in Lowering the Barriers to Engaging in Innovation: Evidence from the Spanish Innovation Survey	Industry And Innovation
2017	Dagnino, G.B.; King, D.R.; Tienari, J.	Strategic management of dynamic growth	Long Range Planning
2015	Dahl, MS; Klepper, S	Whom do new firms hire?	Industrial And Corporate Change
2011	Danbolt, J; Hirst, IRC; Jones, E	The growth companies puzzle: can growth opportunities measures predict firm growth?	European Journal Of Finance
2016	Daunfeldt, SO; Elert, N; Johansson, D	Are high-growth firms overrepresented in high-tech industries?	Industrial And Corporate Change

2009	Davidsson, P; Steffens, P; Fitzsimmons, J	Growing profitable or growing from profits: Putting the horse in front of the cart?	Journal Of Business Venturing
2003	Del Monte, A; Papagni, E	R&D and the growth of firms: empirical analysis of a panel of Italian firms	Research Policy
2003	Delmar, F; Davidsson, P; Gartner, WB	Arriving at the high-growth firm	Journal Of Business Venturing
2008	Delmar, F; Wiklund, J	The effect of small business managers' growth motivation on firm growth: A longitudinal study	Entrepreneurship Theory And Practice
2019	Demirel, P; Danisman, GO	Eco-innovation and firm growth in the circular economy: Evidence from European small- and medium-sized enterprises	Business Strategy And The Environment
2012	Demirel, P; Mazzucato, M	Innovation and Firm Growth: Is R&D Worth It?	Industry And Innovation
2012	Denicolò, V; Zanchettin, P	Leadership Cycles in a Quality-Ladder Model of Endogenous Growth	Economic Journal
2014	Deschryvere, Matthias	R&D, firm growth and the role of innovation persistence: an analysis of Finnish SMEs and large firms.	Small Business Economics
2017	Di Cintio, M; Ghosh, S; Grassi, E	Firm growth, R&D expenditures and exports: An empirical analysis of italian SMEs	Research Policy
2019	Dibrell, C; Marshall, DR; Palar, JM; Gentry, RJ	New director selection during growth in family-influenced and lone founder firms: An identity fit perspective	Journal Of Business Research
2018	Distante, R; Petrella, I; Santoro, E	Gibrat's law and quantile regressions: An application to firm growth	Economics Letters
2015	Donati, C; Sarno, D	Are firms in "backward" areas of developed regions more financially constrained? The case of Italian SMEs	Industrial And Corporate Change

2020	Dosi, G; Grazzi, M; Moschella, D; Pisano, G; Tamagni, F	Long-term firm growth: an empirical analysis of US manufacturers 1959-2015	Industrial And Corporate Change
2010	Edelman, LF; Brush, CG; Manolova, TS; Greene, PG	Start-up Motivations and Growth Intentions of Minority Nascent Entrepreneurs	Journal Of Small Business Management
2020	El Shoubaki, Aliaa; Laguir, Issam; den Besten, Matthijs	Human capital and SME growth: the mediating role of reasons to start a business.	Small Business Economics
2006	Eriksson, Tor; Ortega, Jaime	THE ADOPTION OF JOB ROTATION: TESTING THE THEORIES.	Ilr Review
2017	Eshima, Y; Anderson, BS	FIRM GROWTH, ADAPTIVE CAPABILITY, AND ENTREPRENEURIAL ORIENTATION	Strategic Management Journal
2012	Falk, Martin	Quantile estimates of the impact of R&D intensity on firm performance.	Small Business Economics
2017	Feng, Hui; Morgan, Neil; Rego, Lopo	Firm capabilities and growth: the moderating role of market conditions.	Journal Of The Academy Of Marketing Science
2015	Fischer, Greg; Karlan, Dean	The Catch-22 of External Validity in the Context of Constraints to Firm Growth†.	American Economic Review
2003	Fishman, A; Rob, R	Consumer inertia, firm growth and industry dynamics	Journal Of Economic Theory
2012	García-Manjón, JV; Romero-Merino, ME	Research, development, and firm growth. Empirical evidence from European top R&D spending firms	Research Policy
2000	Gartner, William B.; Bhat, Subodh	Environmental and Ownership Characteristics of Small Businesses and their Impact on Development.	Journal Of Small Business Management
2010	Goedhuys, M; Sleuwaegen, L	High-growth entrepreneurial firms in Africa: a quantile regression approach	Small Business Economics
2000	Goedhuys, Micheline; Sleuwaegen, Leo	Entrepreneurship and Growth of Entrepreneurial Firms in Cote d'Ivoire.	Journal Of Development Studies

2011	Golovko, E; Valentini, G	Exploring the complementarity between innovation and export for SMEs' growth	Journal Of International Business Studies
2019	Grillitsch, M; Schubert, T; Srholec, M	Knowledge base combinations and firm growth	Research Policy
2012	Gruber, M; MacMillan, IC; Thompson, JD	From Minds to Markets: How Human Capital Endowments Shape Market Opportunity Identification of Technology Start-Ups	Journal Of Management
2013	Gruber, Marc; MacMillan, Ian C.; Thompson, James D.	Escaping the Prior Knowledge Corridor: What Shapes the Number and Variety of Market Opportunities Identified Before Market Entry of Technology Start-ups?	Organization Science
2019	Guarascio, D; Tamagni, F	Persistence of innovation and patterns of firm growth	Research Policy
2013	Hamelin, Anaïs	Influence of family ownership on small business growth. Evidence from French SMEs.	Small Business Economics
2001	Havnes, PA; Senneseth, K	A panel study of firm growth among SMEs in networks	Small Business Economics
2010	Henrekson, M; Johansson, D	Gazelles as job creators: a survey and interpretation of the evidence	Small Business Economics
2013	Holly, Sean; Petrella, Ivan; Santoro, Emiliano	Aggregate fluctuations and the cross-sectional dynamics of firm growth.	Journal Of The Royal Statistical Society: Series A (Statistics In Society)
2018	Hsieh, Wan-Lin; Ganotakis, Panagiotis; Kafouros, Mario; Wang, Chengqi	Foreign and Domestic Collaboration, Product Innovation Novelty, and Firm Growth.	Journal Of Product Innovation Management
2010	Hua, N; Templeton, A	Forces driving the growth of the restaurant industry in the USA	International Journal Of Contemporary

			Hospitality Management
2017	Huggins, R; Thompson, P	Entrepreneurial networks and open innovation: the role of strategic and embedded ties	Industry And Innovation
2019	Hünermund, P; Czarnitzki, D	Estimating the causal effect of R&D subsidies in a pan-European program	Research Policy
2019	Innocenti, N; Zampi, V	What does a start-up need to grow? An empirical approach for Italian innovative start-ups	International Journal Of Entrepreneurial Behaviour & Research
2017	Ipinnaiye, Olubunmi; Dineen, Declan; Lenihan, Helena	Drivers of SME performance: a holistic and multivariate approach.	Small Business Economics
2018	Irwin, KC; Landay, KM; Aaron, JR; McDowell, WC; Marino, LD; Geho, PR	Entrepreneurial orientation (EO) and human resources outsourcing (HRO): A "HERO" combination for SME performance	Journal Of Business Research
2020	Iza, A	Entrepreneurial Skills, Technological Progress, and Firm Growth*	Scandinavian Journal Of Economics
2004	Johansson, D	Is small beautiful? The case of the Swedish IT industry	Entrepreneurship And Regional Development
2008	JOHN, KOSE; LITOV, LUBOMIR; YEUNG, BERNARD	Corporate Governance and Risk-Taking.	Journal Of Finance
2018	Joseph, John; Wilson, Alex J.	The growth of the firm: An attention-based view.	Strategic Management Journal
2018	Kearney, Claudine; Soleimanof, Sohrab; Wales, William J.	Examining Facilitative Configurations of Entrepreneurially Oriented Growth: An Information Processing Perspective.	British Journal Of Management
2008	Kellermanns, Franz W.; Eddleston, Kimberly A.; Barnett, Tim; Pearson, Allison	An Exploratory Study of Family Member Characteristics and Involvement: Effects on	Family Business Review

		Entrepreneurial Behavior in the Family Firm.	
2005	Kelley, DJ; Nakosteen, RA	Technology resources, alliances, and sustained growth in new, technology-based firms	Ieee Transactions On Engineering Management
2011	Kim, J; Lee, CY	Technological regimes and the persistence of first-mover advantages	Industrial And Corporate Change
2000	Klaas, Bhan S.; McClendon, John; Gainey, Thomas W.	Managing HR in the Small and Medium Enterprise: The Impact of Professional Employer Organizations.	Entrepreneurship Theory And Practice
2000	Klette, Tor Jakob; Griliches, Zvi	EMPIRICAL PATTERNS OF FIRM GROWTH AND R&D INVESTMENT: A QUALITY LADDER MODEL INTERPRETATION *.	Economic Journal
2013	Koch, Andreas; Späth, Jochen; Strotmann, Harald	The role of employees for post-entry firm growth.	Small Business Economics
2006	Koeller, CT; Lechler, TG	Economic and managerial perspectives on new venture growth: An integrated analysis	Small Business Economics
2009	Kor, Yasemin Y.; Sundaramurthy, Chamu	Experience-Based Human Capital and Social Capital of Outside Directors.	Journal Of Management
2010	KOSOVÁ, RENÁTA; LAFONTAINE, FRANCINE	SURVIVAL AND GROWTH IN RETAIL AND SERVICE INDUSTRIES: EVIDENCE FROM FRANCHISED CHAINS.	Journal Of Industrial Economics
2019	Kraus, S; Klimas, P; Gast, J; Stephan, T	Sleeping with competitors Forms, antecedents and outcomes of coopetition of small and medium-sized craft beer breweries	International Journal Of Entrepreneurial Behavior & Research
2016	Kyriakopoulos, Kyriakos; Hughes, Mathew; Hughes, Paul	The Role of Marketing Resources in Radical Innovation Activity: Antecedents and Payoffs.	Journal Of Product Innovation Management

2010	Lai, Hsien-Che; Chiu, Yi-Chia; Liaw, Yi-Ching; Lee, Tai-Yu	Technological Diversification and Organizational Divisionalization: The Moderating Role of Complementary Assets H.-C. Lai <i>et al.</i> Technological Diversification and Organizational Divisionalization.	British Journal Of Management
2019	Lamont, Bruce T.; King, David R.; Maslach, David J.; Schwerdtfeger, Manuel; Tienari, Janne	Integration capacity and knowledge-based acquisition performance.	R&D Management
2020	Lartey, Theophilus; Yirenkyi, Diana Owusu; Adomako, Samuel; Danso, Albert; Amankwah-Amoah, Joseph; Alam, Ashraful	Going green, going clean: Lean-green sustainability strategy and firm growth.	Business Strategy And The Environment
2012	Lau, VP; Dimitrova, MN; Shaffer, MA; Davidkov, T; Yordanova, DI	Entrepreneurial Readiness and Firm Growth: An Integrated Etic and Emic Approach	Journal Of International Management
2014	Lawless, Martina	Age or size? Contributions to job creation.	Small Business Economics
2010	Lee, CY	A theory of firm growth: Learning capability, knowledge threshold, and patterns of growth	Research Policy
2018	Li, Pengfei	A tale of two clusters: knowledge and emergence.	Entrepreneurship And Regional Development
2011	Lockett, Andy; Wiklund, Johan; Davidsson, Per; Girma, Sourafel	Organic and Acquisitive Growth: Re-examining, Testing and Extending Penrose's Growth Theory.	Journal Of Management Studies
2014	Lockett, Andy; Wild, Andrew	Bringing history (back) into the resource-based view.	Business History
2012	Lopez-Garcia, Paloma; Puente, Sergio	What makes a high-growth firm? A dynamic probit analysis using Spanish firm-level data.	Small Business Economics
2005	Macpherson, A	Learning how to grow: resolving the crisis of knowing	Technovation

2004	Macpherson, Allan; Jones, Oswald; Zhang, Michael	Evolution or revolution? Dynamic capabilities in a knowledge-dependent firm.	R&D Management
2018	Mallon, MR; Lanivich, SE; Klinger, RL	Resource configurations for new family venture growth	International Journal Of Entrepreneurial Behavior & Research
2002	Markman, Gideon D.; Gartner, William B.	Is Extraordinary Growth Profitable? A Study of Inc. 500 High-Growth Companies.	Entrepreneurship Theory And Practice
2017	Mawson, S; Brown, R	Entrepreneurial acquisitions, open innovation and UK high growth SMEs	Industry And Innovation
2018	McDowell, W.C.; Peake, W.O.; Coder, L.; Harris, M.L.	Building small firm performance through intellectual capital development: Exploring innovation as the “black box”	Journal Of Business Research
2017	McKelvie, Alexander; Brattström, Anna; Wennberg, Karl	How young firms achieve growth: reconciling the roles of growth motivation and innovative activities.	Small Business Economics
2010	McKelvie, Alexander; Wiklund, Johan	Advancing Firm Growth Research: A Focus on Growth Mode Instead of Growth Rate.	Entrepreneurship Theory And Practice
2006	Mengistae, T	Competition and entrepreneurs' human capital in small business longevity and growth	Journal Of Development Studies
2013	Mina, A; Lahr, H; Hughes, A	The demand and supply of external finance for innovative firms	Industrial And Corporate Change
2007	Moreno, Ana M.; Casillas, José C.	High-growth SMEs versus non-high-growth SMEs: a discriminant analysis.	Entrepreneurship And Regional Development
2011	Mudambi, R; Swift, T	Proactive R&D management and firm growth: A punctuated equilibrium model	Research Policy
2012	Mueller, Brandon A.; Titus, Varkey K.; Covin, Jeffrey G.; Slevin, Dennis P.	Pioneering Orientation and Firm Growth: Knowing When and to What Degree Pioneering Makes Sense.	Journal Of Management

2018	Nason, Robert S.; Wiklund, Johan	An Assessment of Resource-Based Theorizing on Firm Growth and Suggestions for the Future.	Journal Of Management
2012	Nunes, PM; Serrasqueiro, Z; Leita, J	Is there a linear relationship between R&D intensity and growth? Empirical evidence of non-high-tech vs. high-tech SMEs	Research Policy
2000	Orser, Barbara J.; Hogarth-Scott, Sandy; Riding, Allan L.	Performance, Firm Size, and Management Problem Solving.	Journal Of Small Business Management
2013	Pandher, Gurupdesh; Currie, Russell	CEO compensation: A resource advantage and stakeholder-bargaining perspective.	Strategic Management Journal
2012	Parrilli, M.D.; Elola, A.	The strength of science and technology drivers for SME innovation	Small Business Economics
2017	Partanen, Jukka; Goel, Sanjay	Interplay between reputation and growth: the source, role and audience of reputation of rapid growth technology-based SMEs.	Entrepreneurship And Regional Development
2018	Patel, PC; Guedes, MJ; Soares, N; Gonçalves, VD	Strength of the association between R&D volatility and firm growth: The roles of corporate governance and tangible asset volatility	Journal Of Business Research
2018	Peng, Mike W.; Lebedev, Sergey; Vlas, Cristina O.; Wang, Joyce C.; Shay, Jason S.	The growth of the firm in (and out of) emerging economies.	Asia Pacific Journal Of Management
2020	Pereira, Vijay; Corradini, Carlo; Temouri, Yama; Mellahi, Kamel	Investigating Institutional, Economic and Social Determinants of European Regions for Firm Growth Through Employment Generation.	British Journal Of Management
2001	Pettus, Michael L.	THE RESOURCE-BASED VIEW AS A DEVELOPMENTAL GROWTH PROCESS: EVIDENCE FROM THE DEREGULATED TRUCKING INDUSTRY.	Academy Of Management Journal

2013	Pierce, Jason R.; Aguinis, Herman	The Too-Much-of-a-Good-Thing Effect in Management.	Journal Of Management
2019	Pindado, E; Sánchez, M	Growth-oriented new agricultural ventures: the role of entrepreneurial resources and capabilities under convergence forces	European Review Of Agricultural Economics
2018	Poblete, C	Growth expectations through innovative entrepreneurship The role of subjective values and duration of entrepreneurial experience	International Journal Of Entrepreneurial Behavior & Research
2012	Prats, J; Sosna, M; Velamuri, SR	Managing in Different Growth Contexts	California Management Review
2013	Rauch, A; Frese, M; Wang, ZM; Unger, J; Lozada, M; Kupcha, V; Spirina, T	National culture and cultural orientations of owners affecting the innovation - growth relationship in five countries	Entrepreneurship And Regional Development
2015	Ref, O	The relationship between product and geographic diversification: A fine-grained analysis of its different patterns	Journal Of International Management
2005	Reichstein, T; Jensen, MB	Firm size and firm growth rate distributions - The case of Denmark	Industrial And Corporate Change
2012	Reid, Gavin; Xu, Zhibin	Generalising Gibrat: using Chinese evidence founded on fieldwork.	Small Business Economics
2002	Reuber, A. Rebecca; Fischer, Eileen	Foreign Sales and Small Firm Growth: The Moderating Role of the Management Team.	Entrepreneurship Theory And Practice
2020	Ribeiro-Soriano, Domingo Enrique; McDowell, William; Kraus, Sascha	Special issue on: innovation and knowledge-based economy for entrepreneurship and regional development.	Entrepreneurship And Regional Development
2009	Robson, Paul J. A.; Haugh, Helen M.; Obeng, Bernard Acquah	Entrepreneurship and innovation in Ghana: enterprising Africa.	Small Business Economics
2016	Rodríguez, Alicia; Nieto, María Jesús	DOES R&D OFFSHORING LEAD TO SME GROWTH? DIFFERENT	Strategic Management Journal

		GOVERNANCE MODES AND THE MEDIATING ROLE OF INNOVATION.	
2008	Roper, S; Du, J; Love, JH	Modelling the innovation value chain	Research Policy
2007	Rufin, R	Sales growth of Spanish tourist firms:: Some implications of Gibrat's Law on marketing management	Tourism Management
2005	Saemundsson, RJ	On the interaction between the growth process and the development of technical knowledge in young and growing technology-based firms	Technovation
2017	Santi, Caterina; Santoleri, Pietro	Exploring the link between innovation and growth in Chilean firms.	Small Business Economics
2013	Schröder, C	Regional and company-specific factors for high growth dynamics of ICT companies in Germany with particular emphasis on knowledge spillovers	Papers In Regional Science
2000	Schutjens, Veronique A.J.M.; Wever, Egbert	Determinants of new firm success.	Papers In Regional Science
2014	Segarra, Agustí; Teruel, Mercedes	High-growth firms and innovation: an empirical analysis for Spanish firms.	Small Business Economics
2016	Serrasqueiro, Z; Nunes, PM	Determinants of growth in Portuguese small and medium-sized hotels: empirical evidence using panel data models	Tourism Economics
2010	Serrasqueiro, Z; Nunes, PM; Leitaó, J; Armada, M	Are there non-linearities between SME growth and its determinants? A quantile approach	Industrial And Corporate Change
2010	Shelton, Lois M.	Fighting an Uphill Battle: Expansion Barriers, Intra-Industry Social Stratification, and Minority Firm Growth.	Entrepreneurship Theory And Practice
2009	Shepherd, Dean; Wiklund, Johan	Are We Comparing Apples With Apples or Apples With Oranges? Appropriateness of Knowledge Accumulation Across Growth Studies.	Entrepreneurship Theory And Practice

2019	Shi, W; Connelly, BL; Mackey, JD; Gupta, A	Placing their bets: The influence of strategic investment on CEO pay-for-performance	Strategic Management Journal
2002	Sleuwaegen, L; Goedhuys, M	Growth of firms in developing countries, evidence from Cote d'Ivoire	Journal Of Development Economics
2020	Solomon, SJ; Mathias, BD	The artisans' dilemma: Artisan entrepreneurship and the challenge of firm growth	Journal Of Business Venturing
2019	Spescha, A; Woerter, M	Innovation and firm growth over the business cycle	Industry And Innovation
2017	Squicciarini, Mariagrazia	Entrepreneurship, innovation and enterprise dynamics.	Small Business Economics
2010	Stam, E	Growth beyond Gibrat: firm growth processes and strategies	Small Business Economics
2009	Stam, Erik; Wennberg, Karl	The roles of R&D in new firm growth.	Small Business Economics
2011	Stenholm, P	Innovative Behavior as a Moderator of Growth Intentions	Journal Of Small Business Management
2016	Stenholm, P; Pukkinen, T; Heinonen, J	Firm Growth in Family BusinessesThe Role of Entrepreneurial Orientation and the Entrepreneurial Activity	Journal Of Small Business Management
2017	Szczygielski, K; Grabowski, W; Woodward, R	Innovation and the growth of service companies: the variety of firm activities and industry effects	Industry And Innovation
2020	Tingvall, Patrik Gustavsson; Videnord, Josefin	Regional differences in effects of publicly sponsored R&D grants on SME performance.	Small Business Economics
2009	Tocher, Neil; Rutherford, Matthew W.	Perceived Acute Human Resource Management Problems in Small and Medium Firms: An Empirical Examination.	Entrepreneurship Theory And Practice

2020	Urbano, D; Turro, A; Aparicio, S	Innovation through R&D activities in the European context: antecedents and consequences	Journal Of Technology Transfer
2019	Wadho, W; Goedhuys, M; Chaudhry, A	Young innovative companies and employment creation, evidence from the Pakistani textiles sector	World Development
2020	Wales, W; Beliaeva, T; Shirokova, G; Stettler, TR; Gupta, VK	Orienting toward sales growth? Decomposing the variance attributed to three fundamental organizational strategic orientations	Journal Of Business Research
2014	Wei, Zelong; Yang, Dong; Sun, Biao; Gu, Meng	The fit between technological innovation and business model design for firm growth: evidence from China.	R&D Management
2000	Weinzimmer, LG	A replication and extension of organizational growth determinants	Journal Of Business Research
2014	Welbourne, TM	Two numbers for growth, innovation and high performance: Working and optimal employee energy	Organizational Dynamics
2016	Wennberg, K; Delmar, F; McKelvie, A	Variable risk preferences in new firm growth and survival	Journal Of Business Venturing
2001	West III, G. Page; DeCastro, Julio	THE ACHILLES HEEL OF FIRM STRATEGY: RESOURCE WEAKNESS AND DISTINCTIVE INADEQUACIES.	Journal Of Management Studies
2018	Whitler, Kimberly A.; Krause, Ryan; Lehmann, Donald R.	When and How Board Members with Marketing Experience Facilitate Firm Growth.	Journal Of Marketing
2018	Williams, DA; Ramdani, B	Exploring the characteristics of prosperous SMEs in the Caribbean	Entrepreneurship And Regional Development
2015	Wolff, JA; Pett, TL; Ring, JK	Small firm growth as a function of both learning orientation and entrepreneurial orientation An empirical analysis	International Journal Of Entrepreneurial

			Behavior & Research
2020	Yang, Chih-Hai; Tsou, Meng-Wen	Globalization and firm growth: does ownership matter?	Small Business Economics
2005	Yasuda, Takehiko	Firm Growth, Size, Age and Behavior in Japanese Manufacturing.	Small Business Economics
2020	Yli-Renko, H; Denoo, L; Janakiraman, R	A knowledge-based view of managing dependence on a key customer: Survival and growth outcomes for young firms	Journal Of Business Venturing
2010	Younsuk Park; Jaeun Shin; Taejong Kim	Firm size, age, industrial networking, and growth: a case of the Korean manufacturing industry.	Small Business Economics
2005	Zander, Ivo; Zander, Udo	The Inside Track: On the Important (But Neglected) Role of Customers in the Resource-Based View of Strategy and Firm Growth.	Journal Of Management Studies

APPENDIX C: CLUSTER SUMMARY REPRESENTATIVE ARTICLES

Cluster	Cluster Themes	Total Publications	Total Citations	Main Author	Year	Authors
1 (RED)	Patterns, Processes, and Persistence of Innovation and Firm growth	12	1140	Coad	2010	Coad, A
					2013	Coad, A; Frankish, J; Roberts, RG; Storey, DJ
					2019	Coad, A; Grassano, N
					2013	Coad, A; Guenther, C
					2020	Coad, A; Mathew, N; Pugliese, E
					2017	Coad, A; Nielsen, K; Timmermans, B
					2008	Coad, A; Rao, R
					2016	Coad, A; Segarra, A; Teruel, M
					2018	Coad, Alex; Daunfeldt, Sven-Olov; Halvarsson, Daniel
					2016	Coad, Alex; Frankish, Julian; Roberts, Richard; Storey, David
					2014	Coad, Alex; Guenther, Christina
					2012	Coad, Alex; Tamvada, Jaganaddha
		3	679	Segarra	2014	Audretsch, David; Coad, Alex; Segarra, Agustí
					2016	Coad, A; Segarra, A; Teruel, M
2 (GREEN)	Firm Growth: Motivation, Innovation, and Growth Strategies	3	437	McKelvie	2017	McKelvie, Alexander; Brattström, Anna; Wennberg, Karl
					2010	McKelvie, Alexander; Wiklund, Johan
		3	341	Wennberg	2017	McKelvie, Alexander; Brattström, Anna; Wennberg, Karl
					2009	Stam, Erik; Wennberg, Karl
					2016	Wennberg, K; Delmar, F; McKelvie, A
		6	1342	Wiklund	2011	Bradley, SW; Wiklund, J; Shepherd, DA
					2008	Delmar, F; Wiklund, J
						Lockett, Andy; Wiklund, Johan; Davidsson, Per; Girma, Sourafel
					2010	McKelvie, Alexander; Wiklund, Johan
					2018	Nason, Robert S.; Wiklund, Johan
					2009	Shepherd, Dean; Wiklund, Johan
3 (BLUE)	Growth Dynamics Across Industries and Firm Sizes	3	139	Nunes	2012	Nunes, PM; Serrasqueiro, Z; Leitao, J
		3	139	Serrasqueiro	2016	Serrasqueiro, Z; Nunes, PM
					2010	Serrasqueiro, Z; Nunes, PM; Leitao, J; Armada, M

APPENDIX D: ETHICS CLEARANCE CERTIFICATE



Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Maingehama

CLEARANCE CERTIFICATE

PROTOCOL NUMBER: H21/10/20

PROJECT TITLE

Growth effects of human capital and innovation in small and medium sized South African firms before and after the Covid-19 pandemic

INVESTIGATOR(S)

Ms F Maingehama

SCHOOL/DEPARTMENT

Business Science/

DATE CONSIDERED

22 October 2021

DECISION OF THE COMMITTEE

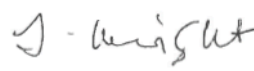
Approved
Risk Level: Low

EXPIRY DATE

14 November 2024

DATE 15 November 2021

CHAIRPERSON

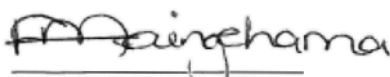

(Professor J Knight)

cc: Supervisor : Professor C Callaghan

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University. Unreported changes to the application may invalidate the clearance given by the HREC (Non-Medical)

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to submit an amendment of the protocol to the Committee. **I agree to completion of a regular progress report. For Minimal and Low studies, this is due annually on 31 December. For Medium and High Risk studies, this is due twice annually on 30 June and 31 December.**


Signature

16 / 11 / 2021
Date

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

APPENDIX E: QUESTIONNAIRE

Participant information sheet



PARTICIPANT INFORMATION SHEET

Project Title: GROWTH EFFECTS OF HUMAN CAPITAL AND INNOVATION IN SMALL AND MEDIUM SIZED SOUTH AFRICAN FIRMS BEFORE AND AFTER THE COVID-19 PANDEMIC

Good day,

My name is Francisca Maingehama, and I am a PhD student in the Faculty of Commerce, Law and Management within the School of Business Sciences at the University of the Witwatersrand, Johannesburg. As part of my studies, I must undertake a research project. I am researching the growth effects of human capital and innovation in small, medium-sized South African firms before and after the COVID-19 pandemic under the supervision of Professor Chris Callaghan.

Firm growth is an important outcome of entrepreneurship; however, the COVID-19 pandemic has disrupted the world, with SMEs and start-ups most affected. Most studies on firm growth have been conducted in developed countries, and many have been done on COVID-19. The high failure rate among SMEs in South Africa has created an urgent need to identify strategies that influence firm growth. Small and medium-sized enterprise growth is uncertain, and recent COVID studies have reported that there will be a new normal.

You are invited to take part in this survey. The research objective of this study is to develop and test two theoretical models that relate to SME growth in South Africa pre-COVID-19 and post-COVID-19 outbreak from 27 March 2020. Therefore, the first overarching objective is to develop and test a theoretical model related to SME growth on the firm level pre-COVID-19 in South Africa. The second overarching objective is to develop and test a theoretical model that relates to SME growth on the owner-manager level post-COVID-19 outbreak in South Africa. You were selected for this study because you own a small and medium-sized enterprise in South Africa and will have valuable knowledge and information on your firm.

For participation in the study, participants are required to be at least 18 years of age with no maximum limit and need to be a part-time student who is currently employed. Your participation will involve answering the attached questionnaire. Your response is important, and there are no right or wrong answers. This survey is both confidential and anonymous. Anonymity and confidentiality are guaranteed by not needing to enter your name on the questionnaire. Your participation is completely voluntary and involves no risk, penalty, or loss of benefits whether or not you participate. You are free to withdraw consent and discontinue your contribution to this study at any time without penalty. The results will not enclose your name, and any other identifying data will be

removed. The results from this study will be presented in my research project, in journals, on the university library website and made available on the World Wide Web.

The first part of the survey captures some demographic data. The second part comprises 115 statements. Please indicate the extent to which you agree with each statement. The entire survey should take between 30 and 40 minutes to complete. Central Ethics Committee (Non-Medical) Protocol Number HR21/10/20.

If you wish to receive a summary of this report, I will gladly send it to you (optional). The data collected from this research project will be stored in a password-protected laptop for 5 years. With your permission, other researchers may use the data collected from this research project. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), by telephone at +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

Thank you for considering participating.

Yours Sincerely,

Francisca Maingehama

Researcher Contact: Francisca Maingehama - 1984400@students.wits.ac.za - 0732592439

Supervisor: Professor Chris Callaghan - chris.callaghan@wits.ac.za - 0117178066

Consent Form



PARTICIPANT CONSENT SHEET

Project Title: GROWTH EFFECTS OF HUMAN CAPITAL AND INNOVATION IN SMALL AND MEDIUM SIZED SOUTH AFRICAN FIRMS BEFORE AND AFTER THE COVID-19 PANDEMIC

Name of Researcher: Francisca Maingehama

I, ... agree to participate in this research project. The research has been explained to me and I understand what my participation will involve. I agree to the following:

Please tick your response to the following:	YES	NO
I have been given a Participant Information Sheet which explains the nature and processes involved in this study, which is attached hereto;		
I was given time to read it, or had it read to me, in the language I best understand;		
I was given time to ask any questions I wanted to and found any answers given to me to be reasonable and satisfactory;		
I believe I fully understand why the study is being conducted and what the intended outcomes will be;		
I understand that there will be no immediate benefit to me, should I agree to participate, nor will I receive any payment; conversely, participation will not cost me anything but my time;		
I have been given a range of contact details. If I require further information or become concerned about any aspect of this study, I am free to speak to any of these contacts.		
I agree that my responses will remain anonymous		
I agree that the researcher may use anonymous quotes in his research report		
I agree that the information I provide may be used anonymously by other researchers following this study		
I agree to my responses being used for education and research on condition that my privacy is respected, subject to the following:		

• I understand that my personal details will not be included in the research project so that I will not be personally identifiable. • I understand that I am under no obligation to take part in this research project. • I understand I have the right to withdraw from this research project at any stage.		

Signature

Name of participant

Date.....

Signature

Name of person seeking consent

Date.....

QUESTIONNAIRE

GENERAL INSTRUCTIONS

All information given will be treated as strictly confidential.

Please complete every question/statement to ensure the validity and reliability of the study. Therefore, all questions should be answered.

Are you an owner-manager of your firm? _____ (Yes/No)

SECTION A: BACKGROUND INFORMATION

This section of the questionnaire refers to background or biographic information. Although we are aware of the sensitivity of the questions in this section, the information will allow us to compare groups of participants. Once again, we assure you that your response will remain anonymous. Your cooperation is appreciated.

Please answer the following questions by crossing (X) the relevant block or writing down your answer in the space provided.

A1. What is your gender? Male ☐ Female ☐ Other ☐ Prefer not to say ☐

A2. What is your age? _____ (Years)

A3. To which population or ethnic group do you belong?

Black African ☐ Coloured ☐ Indian/Asian ☐ White ☐ Other ☐

A4. What is your highest education qualification?

National Certificate/ Grade 12 ☐ Higher Certificate ☐ Diploma ☐
Bachelor's Degree (s) ☐ Honour's Degree/ Postgraduate diploma (s) ☐ Master's Degree ☐
Doctoral Degree ☐ Other ☐ If you selected other, please specify _____

A5. What is your marital status?

Single ☐ Married ☐ Prefer not to say. ☐

A6. How many dependent children do you have? _____ (number)

A7. In what province is your firm located?

Eastern Cape ☐ Free State ☐ Gauteng ☐ KwaZulu-Natal ☐
Limpopo ☐ Mpumalanga ☐ Northern Cape ☐ Northwest ☐
Western Cape ☐

A8. In what year did you start your current business _____ (year).

A9. What Industry is your firm in?	
Administrative and support service activities	
Agriculture, forestry and fishing	
Arts, entertainment and recreation	
Construction	
Electricity, gas, steam and air conditioning supply	
Financial and insurance activities	
Human health and social work activities	
Information and communication	
Public administration and defence; compulsory social security	
Transportation and storage	
Accommodation and food service activities	
Education	
Manufacturing	
Mining and quarrying	
Professional, scientific and technical activities	
Real estate activities	
Water supply; sewerage, waste management and remediation activities	
Wholesale and retail trade; repair of motor vehicles and motorcycles	
Other (please specify)	

A10. Please specify the type of products or services you offer _____

A11. What is the legal status of the business? [Legal status refers to the legal identity by which a person, entity, association or company is recognised, with sufficient capacity for taking on obligations and carrying out activities that incur full legal responsibility, regarding themselves and third parties].
A Public company is a company that operates for profit. It is allowed to offer its shares to the public. All listed companies must be public companies but not all public companies are listed on a stock exchange.
A Private Company (Pty) Ltd is a private company that trades for profit. It may not offer its shares to the public and the transferability of its securities is restricted.
A Partnership is an arrangement between two or more people to oversee business operations and share its profits and liabilities.
A Sole Proprietorship is a business that is owned and operated by a natural person (individual). This is the simplest form of business entity. The sole proprietorship is not a legal entity. The business has no existence separate from the owner who is called the proprietor.
A Limited partnership is a form of partnership in which some of the partners contribute only financially and are liable only to the extent of the amount of money that they have invested.

A Personal liability company is a private company operating for profit. Its Memorandum of Incorporation (MOI) must state that it is a personal liability company. Directors and past directors are jointly and severally liable for the debts of the company.
A Close Corporation is a person who is considered different from its members. It has the power and capacity of a natural person and is entrusted with a minimal number of formalities.
An External company is one which is of origin in a country other than South Africa, and carries out business activities within South Africa.
A Cooperative is an autonomous association of people who unite voluntarily to meet a common economic or social need and aspiration.

Please tick the appropriate box.

Close Corporation	
Cooperative	
External company	
Limited partnership	
Partnership	
Personal liability company	
Private Company (Pty) Ltd	
Public company	
Sole Proprietorship	
Other (please specify)	

A12. If you are in a partnership, how many partners do you have? _____ (number)

A13. How many years have you been in business in total during the course of your career? _____
(Years)

SECTION B: ENTREPRENEURIAL ORIENTATION

Please read each statement carefully and decide if you agree or disagree. If you strongly do not support the statement, select '1' (one) in the space to the right after the statement. If you have experienced any of the following statements, indicate your level of agreement by selecting any number (from 1 to 7) that best describes your agreeableness.

1 Strongly disagree	=	2 = Disagree	3 = Somewhat Disagree	4 = Neither Agree nor Disagree	5 Somewhat Agree	=	6 = Agree	7 = Strongly Agree

	1	2	3	4	5	6	7
	Strongly disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
B1. Employees are permitted to act and think without interference.							
B2. Employees perform jobs that allow them to make and instigate changes in the way they perform their work tasks							
B3. Employees are given freedom and independence to decide on their own how to go about doing their work.							
B4. Employees are given freedom to communicate without interference.							
B5. Employees are given authority and responsibility to act alone if they think it to be in the best interests of the business.							
B6. Employees have access to all vital information.							
B7. We actively introduce improvements and innovations in our business.							
B8. Our business is creative in its methods of operation.							
B9. Our business seeks out new ways to do things.							
B10. In general, the top managers of the firm favor a strong emphasis on the marketing of tried-and-true products or services.							
B11. In general, the top managers of the firm favor a strong emphasis on R&D, technological leadership, and innovations.							
B12. Very many new lines of products or services have been marketed by the firm in the past five years (or since its establishment)?							
B13. Changes in product or service lines have been quite dramatic.							
B14. The term “risk taker” is considered a positive attribute for people the firm.							

B15. People in the firm are encouraged to take calculated risks with new ideas.							
B16. Our business emphasises both exploration and experimentation for opportunities.							
B17. In general, the top managers of the firm have a strong tendency for high-risk projects (with chances of very high returns)							
B18. In general, the top managers of the firm believe that owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives.							
B19. When confronted with decision-making situations involving uncertainty, the firm typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities.							
B20. When confronted with decision-making situations involving uncertainty, the firm typically adopts a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions.							
B21. We always try to take the initiative in every situation (e.g. against competitors, in projects when working with others).							
B22. We excel at identifying opportunities.							
B23. We initiate actions to which other organisations respond.							
B24. In dealing with its competitors, the firm typically initiates actions to which competitors then respond.							
B25. In dealing with its competitors, the firm is very often the first business to introduce new products/services, administrative techniques, operating technologies.							
B26. In dealing with its competitors, the firm typically adopts a very competitive, "undo-the-competitors" posture.							
B27. Our business is intensely competitive.							
B28. In general, our business takes a bold or aggressive approach when competing.							

B29. We try to undo and out-manueverer the competition as best as we can.							
B30. The firm makes no effort to take business from the competition.							
B31. The firm frequent adapts its products or services to the local consumer needs.							
B32. The firm has made great effort to strengthen the brand image.							
B33. The firm makes operational efficiency improvements aimed at producing at lower costs than competitors (cost leadership).							

SECTION C: HUMAN CAPITAL

Now I would like to ask you a few questions about this establishment's labor force.

Mark the applicable block with a cross (X). Complete the applicable information.

- Permanent, full-time workers are defined as all workers that work for a term of one or more fiscal years and/or have a guaranteed renewal of their employment and that work a full shift.

C1. Looking back, at the end of 2019, how many employees in total (Permanent, full-time) worked in this establishment? Please include all workers and managers. _____ (number)

C2. Looking back, at the end of 2020, how many employees in total (Permanent, full-time) worked in this establishment? Please include all workers and managers. _____ (number)

C3. Looking back, at the end of 2021, how many employees in total (Permanent, full-time) worked in this establishment? Please include all workers and managers. _____ (number)

C4. Looking back, at the end of 2019, in this establishment how many permanent, full-time workers were female? _____ (number)

C5. Looking back, at the end of 2020, in this establishment how many permanent, full-time workers were female? _____ (number)

C6. Looking back, at the end of 2021, in this establishment how many permanent, full-time workers were female? _____ (number)

SECTION D: INNOVATION

Mark the applicable block with a cross (X). Complete the applicable information.

D1. During the last two years (2020 – 2021), how many new or improved products or services were introduced by your firm? _____ (number)

D2. Please describe in detail the main new or improved product or service that this establishment introduced during the last three years and how the main new or improved product is different from the most similar product or service, if any, previously produced by this establishment.

The main new or improved product or service is the one that represented the largest proportion of this establishment's sales in value (not volume) during the last two years.

Description:

D3. Were any of the new or improved product or service also new for the establishment's main market?

Yes

No

D4. During the last two years (2020 – 2021), has this establishment introduced any new or improved process? These include:

- methods of manufacturing products or offering services.
- logistics, delivery, or distribution methods for inputs, products, or services.
- or supporting activities for processes?

Yes

No

D5. Please describe in detail the main new or improved process that this establishment introduced during the last two years and how the main new or improved process is different than the most similar process that is or was used by this establishment.

[The main innovative process is the innovative process that had the largest impact on the operations of the establishment during the last two years].

Description:

D6. From 27 March 2020 to date, did this establishment spend on research and development activities, either in-house or contracted with other companies, excluding market research surveys?

Yes

No	

D7. From 27 March 2020 to date, how much did this establishment spend on research and development activities, either in-house or contracted with other companies?	
If you selected more than R550 000, please specify	
R200 000 – 209 999	
R190 000 – 199 999	
R180 000 – 189 999	
R170 000 – 179 999	
R160 000 – 169 999	
R150 000 – 159 999	
R140 000 – 149 999	
R130 000 – 139 999	
R120 000 – 129 999	
R110 000 – 119 999	
R100 000 – 109 999	
R90 000 – 99 999	
R80 000 – 89 999	
R70 000 – 79 999	
R60 000 – 69 999	
R50 000 – 59 999	
R40 000 – 49 999	
R30 000 – 39 999	
R20 000 – 29 999	
R10 000 – 19 999	
R5 000 – 9 999	
Less than R5 000	
None	

SECTION E: MOTIVATION

Each item describes a particular behaviour, and responses are made using a Likert scale from 1 to 7, where ‘1’ indicates that the behaviour does not correspond at all, and ‘7’ shows that the behaviour corresponds exactly.

Using the scale below, please indicate to what extent each of the following items corresponds to why you are presently involved in your work by making an “X” over the appropriate number on the 1 to 7-point scale next to the statement.

1 – 2 = Does not correspond at all	3 – 5 = Corresponds moderately	6 – 7 = Corresponds exactly

	Does not correspond at all		Corresponds moderately			Corresponds exactly	
	1	2	3	4	5	6	7
E1. Because I derive much pleasure from learning new things.							
E2. For the satisfaction I experience from taking on interesting challenges.							
E3. For the satisfaction I experience when I am successful at doing difficult tasks.							
E4. Because it has become a fundamental part of who I am.							
E5. Because it is part of the way in which I have chosen to live my life.							
E6. Because this job is a part of my life.							
E7. Because this is the type of work I chose to do to attain a certain lifestyle.							
E8. Because I chose this type of work to attain my career goals.							
E9. Because it is the type of work I have chosen to attain certain important objectives.							
E10. Because I want to succeed at this job, if not I would be very ashamed of myself.							
E11. Because I want to be very good at this work, otherwise I would be very disappointed.							
E12. Because I want to be a “winner” in life.							
E13. For the income it provides me.							
E14. Because it allows me to earn money.							
E15. Because this type of work provides me with security.							
E16. I ask myself this question, I do not seem to be able to manage the important tasks related to this work.							
E17. I do not know why we are provided with unrealistic working conditions.							
E18. I do not know, too much is expected of us.							

SECTION F: GROWTH

Please answer the following questions by crossing (X) the relevant block or writing down your answer in the space provided.

F1. For the financial year end 2019 what were this establishment's total annual sales for all products and services?	
If you selected more than R550 000, please specify	
R200 000 – 209 999	
R190 000 – 199 999	
R180 000 – 189 999	
R170 000 – 179 999	
R160 000 – 169 999	
R150 000 – 159 999	
R140 000 – 149 999	
R130 000 – 139 999	
R120 000 – 129 999	
R110 000 – 119 999	
R100 000 – 109 999	
R90 000 – 99 999	
R80 000 – 89 999	
R70 000 – 79 999	
R60 000 – 69 999	
R50 000 – 59 999	
R40 000 – 49 999	
R30 000 – 39 999	
R20 000 – 29 999	
R10 000 – 19 999	
R5 000 – 9 999	
Less than R5 000	
None	

F2. For the financial year end 2020, what were this establishment's total annual sales for all products and services?	
If you selected more than R550 000, please specify	
R200 000 – 209 999	
R190 000 – 199 999	
R180 000 – 189 999	
R170 000 – 179 999	
R160 000 – 169 999	

R150 000 – 159 999	
R140 000 – 149 999	
R130 000 – 139 999	
R120 000 – 129 999	
R110 000 – 119 999	
R100 000 – 109 999	
R90 000 – 99 999	
R80 000 – 89 999	
R70 000 – 79 999	
R60 000 – 69 999	
R50 000 – 59 999	
R40 000 – 49 999	
R30 000 – 39 999	
R20 000 – 29 999	
R10 000 – 19 999	
R5 000 – 9 999	
Less than R5 000	
None	

F3. For the financial year end 2021, what were this establishment's total annual sales for all products and services?	
If you selected more than R550 000, please specify	
R200 000 – 209 999	
R190 000 – 199 999	
R180 000 – 189 999	
R170 000 – 179 999	
R160 000 – 169 999	
R150 000 – 159 999	
R140 000 – 149 999	
R130 000 – 139 999	
R120 000 – 129 999	
R110 000 – 119 999	
R100 000 – 109 999	
R90 000 – 99 999	
R80 000 – 89 999	
R70 000 – 79 999	
R60 000 – 69 999	
R50 000 – 59 999	

R40 000 – 49 999	
R30 000 – 39 999	
R20 000 – 29 999	
R10 000 – 19 999	
R5 000 – 9 999	
Less than R5 000	
None	

F5. Did this establishment close (suspended services or production) temporarily the due to COVID-19 outbreak?	
Yes	
No	
F6. Did this establishment start or increase business activity online in response to the COVID-19 outbreak?	
Yes	
No	
F7. For how many weeks has this establishment been closed (or was closed) due to the COVID-19 outbreak?	
Less than 1 week	
1 week	
2 weeks	
3 weeks	
4 weeks	
5 weeks	
6 weeks	
7 weeks	
8 weeks	
9 weeks	
10 weeks	
11 weeks	
12 weeks	
More than 12 weeks	

Thank you for completing the questionnaire and for taking time out to participate.