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Factors Influencing SME Performance of Incubation Beneficiaries in South Africa

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A research project submitted to the Faculty of Commerce, Law, and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of master's in business administration.

Johannesburg, 2024

Declaration

This work has never been submitted, in whole or in part, for the recognition of any degree. This work was produced by me. Every notable addition to this dissertation and every quotation from a separate source has been given due credit, cited, and referenced.

Signature:  Date: 12 August 2024

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Abstract

The focus of the research study was to investigate the factors that have contributed to the performance of the SMEs after incubation, with a focus on their dynamic capabilities, innovation capabilities, and the role of incubator support. A descriptive, quantitative study was conducted, employing a structured questionnaire as the data collection tool to capture the factors impacting SME performance post-incubation. The study included 43 SMEs, identified from incubator organizations across South Africa, LinkedIn, and various entrepreneur WhatsApp groups, who had successfully completed an incubation program.

The findings of the study revealed that SME dynamic capabilities and innovation significantly predict SME performance post-incubation. However, the study's results also showed that incubator support does not moderate the relationship between innovation and SME performance, implying that current incubator support efforts do not significantly influence SME performance after incubation.

The study recommends that to maximize their influence on SMEs' performance after incubation, incubators should put in place programs that assist the growth of SME dynamic capabilities and creative ideas. It also emphasizes how important it is to learn more about the difficulties and obstacles preventing SMEs from performing well both during and after incubation. To validate these results, more research with larger samples is required because of the small sample size. In the future, researchers should also investigate the specific ways that small businesses' changing abilities affect their performance, as well as the outside factors that affect how well incubator support works for small business performance.

Keywords

SME Performance, Incubation, Dynamic Capabilities, Innovation

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CHAPTER 1. INTRODUCTION

1.1 Statement of Purpose

SMEs are widely recognized as significant drivers of innovation, economic expansion, and the decline in unemployment through job creation. Incubation programs have developed into crucial initiatives to support SMEs' development and growth by providing them with the tools they require, access to mentorship, and networking opportunities. The success of SMEs and their performance that ensure that they continue to play a significant role in the economy continues to be a challenge in South Africa, even though numerous studies have shown that incubation programs have been successful in fostering SME development.

The aim of this research study is to investigate the factors that influence the performance of small and medium-sized businesses (SMEs) that have been incubated. The goal is to fully understand these factors so that they can help to provide guidance with producing good strategies and policies that will help incubated SMEs be more successful in the long run.

The study will exclusively focus on South African SMEs that have undergone incubation in various programs, utilizing a quantitative research methodology. The data will be gathered through an online survey that will focus on elements such as SME capabilities in accordance with the theory of dynamic capabilities, their innovation capacity, and the effectiveness of the support provided by incubator programs.

1.2 Background of the Study

Due to rising unemployment and a shortage of jobs in the market, more people are finding it necessary to launch their own enterprises (Hameed & Irfan, 2019). Because of this, entrepreneurship has been recognized as a strategic approach to address unemployment throughout the world (Kumar et al., 2020).

Because entrepreneurs help reduce unemployment rates and generate income, new businesses and creative projects are essential to the health of global economies.

According to the Bureau for Economic Research (BER) (2016), small and medium-sized enterprises (SMEs) are important drivers of innovation, economic growth, and job creation. According to the DTI (2014), this sector is widely acknowledged in South Africa as a business activity. These businesses also significantly contribute to the country's GDP and have established themselves as important job creators in a nation like South Africa, which struggles with high unemployment rates, which was recorded at 32,9% in the first quarter of 2023 (Stats SA, 2023).

The National Development Plan goals have also identified small and medium-sized businesses as a critical element for South Africa's inclusive growth and development (Bhorat et al., 2018). By 2030, small and medium-sized businesses are anticipated to generate 90% of all new jobs, according to the NDP 2030 goals (Commission, 2023). South Africa has a higher rate of SME failure than any other country in the world, according to a recent study by the University of the Western Cape. According to this study, 70–80% of small businesses fail within five years, which puts the NDP's stated goal in jeopardy (Adonis, 2022).

If the appropriate techniques and procedures are not used by these SMEs, the entrepreneurial path is one that is difficult and complex. Due to a lack of awareness that innovation plays a significant role in the entrepreneurial journey as well as knowledge, skills, discipline, and other factors, many business ideas fail even before they get off the ground (Hameed & Irfan, 2019). To assure the development of these talents, entrepreneurial education, and initiatives such as incubation programs are crucial in South Africa, not just for addressing socioeconomic problems but also for giving people the tools they need to survive in a society that is changing quickly (Allan & Gill Gray Philanthropy, 2022).

After leaving incubation programs, businesses, in accordance with Schwart (2008), enter a high-risk phase that lasts for several years. Consequently, identifying these elements that can support their continued performance can help to ensure their success even during these times.

Business incubators are crucial to the wellbeing of the SME sector in South Africa because of their commitment to speeding the successful growth of entrepreneurial businesses through the provision of business assistance in the form of products, services, and contacts with industry professionals. Due to this, businesspeople can fully contribute to the economy (Lose, 2021). Programs for business incubation have become a popular way to encourage the growth and long-term viability of small-business goals (Zreen et al., 2019). These programs provide an encouraging atmosphere, resources, and support services to incubated beneficiaries to increase their chances of success and long-term sustainability (Joo et al., 2020).

Although business incubation programs provide valuable assistance, it is crucial to comprehend the factors that affect the performance of the SMEs that emerge from them. According to Schutte and Barbeau (2022), 68% of enterprises are predicted to survive for six years after successfully completing an incubation program, and 30% of businesses fail in the post-incubation period.

The ability for SMEs to maintain their performance over the long term is still a considerable challenge (Bhorat et al., 2018). Therefore, identifying the factors that influence SME performance can aid in guiding the development of strategies and interventions for enhancing SME sustainability and ensuring the long-term effects of incubation programs by policymakers, incubator managers, and SMEs themselves.

1.3 Research Problem

More needs to be done to support SMEs' survival and enable them to be productive contributors to the economy, despite the growing recognition of the

role that business incubation plays in fostering their development and expansion (Lose, 2021). The factors that contribute to the performance and long-term viability of incubated beneficiaries are still unknown, even though business incubation programs offer a nurturing environment and support service SME success in the long term remains a considerable challenge this can be associated with the high failure rate in South Africa for SMEs where 70 – 80% of SMEs fail in the first year and only 50% of the survivors last for the next 5 years, according to the Department of Small Business Development (Friedrich, 2016)

The research aims to explore the factors that influence the performance of SMEs after incubation, specifically their dynamic capabilities, innovation capabilities, and the role of incubator support in enhancing support beyond the incubation period. Although there is a sizable body of literature on both SMEs and incubators, there is however little research that investigates how the relationship/interaction between the two contributes to SME performance after the incubation phase. Schutte and Chauke (2021) noted that literature addresses the effects of incubators on SME performance, but no literature goes into detail about the factors that support SME performance among incubated beneficiaries (Schutte & Chauke, 2021).

By investigating these factors, the research aims to shed light on these key determinants of SME performance and possibly offer insightful analysis and advice for stakeholders engaged in supporting and nurturing SMEs within the framework of business incubation programs.

1.4 **Research Questions**

- What is the relationship between SMEs dynamic capabilities (sensing, seizing, transforming, and learning) and their performance?
- What is the relationship between innovation and SME performance?
- How are SME Dynamic Capabilities (sensing, seizing, transforming) related to their innovation outcomes?

- In what way does innovation mediate the relationships between SME dynamic capabilities and SME performance?
- In what way does incubator support moderate the relationship between innovation and SME performance?
- What are the challenges faced by SMEs after the incubation period that impact their performance?

1.5 Research Objectives

- To assess the extent to which SME dynamic capabilities (sensing, seizing, transforming, and learning) influence the performance of SMEs.
- To assess the influence of innovation on SME performance.
- To evaluate the relationship between SME dynamic capabilities (sensing, seizing, transforming, and learning) and innovation.
- To examine the impact of innovation on the performance of SMEs
- To investigate whether innovation acts as a mediator in the relationship between SME dynamic capabilities and SME performance.
- To examine whether the level of incubator support influences the strength or direction of the relationship between innovation and SME performance.
- To investigate the challenges that affect the SMEs performance post-incubation.

1.6 Rationale

Both developing and developed nations recognize small and medium-sized businesses as major drivers of economic development, innovation, and employment creation. Therefore, sustaining their performance is essential to ensuring that they effectively contribute to the crucial areas mentioned above, become active contributors to the economy, and, in the context of South Africa, advance inclusive growth and development as per the NDP 2030 goal. Small and medium-sized businesses (SMEs) performance is essential for creating employment in a country like South Africa, which has one of the highest

unemployment rates in the world, not only to help create jobs but also to strengthen an economy that is being weakened by unemployment.

Although incubation programs have been identified as effective mechanisms to support the development and growth of SMEs through the resources they provide and nurturing environment they create (SME Guides, 2022), performance after exiting the incubation program remains a challenge. Therefore, there is a need to understand the factors derived from the incubation that influence SME performance amongst incubated beneficiaries. This research study seeks to fill the knowledge gaps that exist in understanding Small and medium- sized business performance post-incubation in hopes of understanding how incubator support effectively assists SMEs in achieving performance after going through the incubation process.

This study aims to provide SMEs with a deeper understanding of the factors that influence their performance and overall success after incubation. This understanding will enable SMEs to make more informed decisions through their dynamic and innovative capabilities, enabling them to actively participate in the economy and contribute to the reduction of unemployment, innovation, and economic growth. The outcome of this study will also benefit incubators and incubation programs, as the findings will aid them in developing effective strategies that continue to impact incubated beneficiaries long after the incubation process concludes. The identified factors can assist in tailoring programs to enhance the success of incubated SMEs. The study will also benefit policymakers in creating a supportive environment for SMEs to assist in lowering the unemployment rate in South Africa, putting policies in place that will favour SMEs and drive economic development and innovation. Finally, the study will contribute to the understanding of the entrepreneurial ecosystem within the academic field of entrepreneurship.

1.7 Delimitations of the Study

Several small and medium-sized businesses that have successfully completed an incubation program in South Africa will be the subject of this research study. Various incubation organisations will be targeted within South Africa, and data will be collected from SMEs that have been incubated in these organisations using a quantitative method. The dynamic capabilities theory will be adopted in the conceptual framework and will guide the investigation and assist in structuring the research instrument to investigate the factors influencing SME performance post-incubation.

1.8 Definition of Terms

In the context of this research study, the operational definitions listed below are used.

1.8.1 Business Incubator

To define business incubators, there are numerous definitions available. According to one description, it is a business support organization that offers a range of business assistance resources, including physical space, funding, coaching, shared services, and networking opportunities (Business Development Bank of Canada, n.d.). This is the definition that we will be adopted for this study.

1.8.2 Small Medium Enterprises (SMEs)

Numerous definitions of SMEs, particularly those used in various nations, have been found through research; however, for the purposes of this study, the Small Business Act definition will be used for classification. SMEs will therefore be defined as a separate and distinct business entity, together with its branches or subsidiaries, if any, including cooperative enterprises, managed by one owner or more predominantly carried on in any sector or subsector of the economy that

has a between 11-50 (Small Enterprise) and 51 -250 (Medium Enterprise) employees (South African Government, 2019).

1.8.3 Innovation

This study shows that there are various definitions of innovation in use today. For the sake of this study, innovation is defined as a beneficial concept that generates workable solutions to a problem or business. It is a good or service, a business plan, or a strategy that gives you a competitive advantage (McKinsey & Company, 2022).

1.9 Assumptions

For this research study, the below assumptions will be made:

1. There is a connection between various elements and long-term SME performance.
2. Performance after incubation is influenced by SME capabilities.
3. The incubation process significantly contributes to the promotion of SMEs' performance even after incubation.
4. The incubation process gives SMEs the necessary knowledge, skills, and business development tools to support SME performance after the incubation program is over.
5. The research instrument's respondents will provide an honest assessment of their experiences.

1.10 Chapter Outline

The growth of small to medium-sized businesses through incubation programs is essential for fostering innovation as well as economic growth because they act as key drivers of both. It is critical to comprehend the factors that affect SME performance after successfully completing an incubation program to help inform

better strategies and policies to reduce business failure in the post-incubation period.

1.11 Structure of Dissertation

The following steps will be taken to conduct the study to determine the factors that influence performance within these SMEs post-incubation: Chapter 2 of this study does a critical review of the literature to find knowledge gaps in the areas of SME capabilities that affect SME performance, challenges that affect SME performance, the effectiveness of incubation programs, and the role of innovation in SME performance. The identification of theories will then help develop the conceptual framework that will guide this study, followed by the research methodology that will direct the gathering and analysis of that data. Thereafter, chapter 3 will discuss the research methodology used for this study, with a focus on the sample, data collection, and data analysis strategies that will be utilized. Chapter 4 will detail the data collected for the research, summarize it in accordance with the hypotheses identified in Chapter 5, and then cover the conclusions, recommendations, and areas for further research in Chapter 6.

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

The primary objective of this review of the literature is to identify the variables that affect small- and medium-sized enterprise (SME) performance after completing an incubation program. The first section of this review will concentrate on an empirical review, examining the evidence provided in the literature to address any potential research gaps. This review will be divided into two sections. To develop the conceptual framework that will direct this study's hypotheses and data collection techniques, the second part of this literature review will draw on pertinent theories to provide a thorough understanding of the key factors contributing to SME performance among incubated beneficiaries.

The evaluation will be in the following format: In the first section, the capabilities of SMEs that contribute to their performance will be outlined. The challenges that small and medium-sized businesses face after being incubated will then be discussed in relation to their performance. The effectiveness of the incubator support will then be examined in detail to determine how and what factors make an incubator effective in promoting successful performance for SMEs. Finally, the evaluation will cover the role that incubators have played in helping SMEs.

2.2 Empirical Review of Literature

Four constructs have been identified to help understand the variables that affect SMEs' performance after incubation to address the identified research questions. The capabilities of SMEs, issues that affect SMEs, support for incubators, and the function of innovation in SMEs performance will be the main topics of this empirical review of the literature. These themes, which were identified in the analysis of 23 articles, will be more thoroughly examined in this review. A chart summarizing the findings from the data extraction can be found below.

Table 1: Research Gap Analysis

Themes	Articles	Relevant Articles	Methods	References	Gaps in Research
1.SME Capabilities	5	1.1	Quantitative	(Mongkol, 2021)	• Study for conducted in Thailand therefore cannot be generalized to other countries • More research on the mechanisms through which dynamic capabilities impact SME performance • Dynamic Capabilities identified to have a positive impact on SME performance but specific mechanisms through which impact occurs not addressed
		1.2	Quantile Regression	(Matekenya & Moyo, 2022)	• More study is needed to understand how innovation affects the performance of SMEs. • Examine the variables that affect SMEs' innovation success.
		1.3	Quantitative - Structural Equation **Model** (SEM)	(Teixeira, Lopes, Moura, Marconatto, & Fischmann, 2021)	• Brazil-specific research cannot be generalized; therefore, research can be done to understand other countries.\ • Recognize the mechanisms by which dynamic capabilities affect startup development.

Themes	Articles	Relevant Articles	Methods	References	Gaps In Research
2. Challenges Affecting SMEs	5	2.1	Mixed Methods (Qualitative & Quantitative) - Stratified Approach	(Msimango-Galawe & Majaja, 2022)	• lasted only a brief time, requiring longitudinal analysis. • Factors that contributed to the successful SMEs in Johannesburg not identified • Study on how government policies affect SMEs in Johannesburg
		2.2	Mixed Methods (Qualitative & Quantitative) - Stratified Approach	(Jansen Van Vuuren, 2022)	• Utilization of a longitudinal approach to monitor changes in the difficulties faced by businesspeople in SA over time
		2.3	Qualitative	(Van Wyk, 2022)	• More investigation is needed into the variables influencing small business strategic decision making.
3.Effectiveness of incubation on SMEs	8	3.1	Qualitative	(Lose,2021)	• study the effect of business incubators on the performance of small businesses in South Africa.

Themes	Articles	Relevant Articles	Methods	References	Gaps In Research
3.Effectiveness of incubation on SMEs		3.2	Mixed Methods (Qualitative & Quantitative) - Stratified Approach	(Shutte,2021) (Assenova,2020)	• Cannot be generalized focused in Botswana. • Factors that affect business incubators' success. • Interviews conducted only with 8 Business Incubators across 8 provinces in South Africa (only) • Focused on single incubator therefore cannot generalize, therefore more evidence required before it can be concluded that incubation is effective. • Focuses on one theory to understand sustained competitiveness.
4. The role of innovation in SME Performance	5	4.1	Quantitative - Stratified Sampling Approach	(Makuwe,2022)	• Innovation tactics' effects on the performance of SMEs • Study limited to Durban. • Factors that affect how well innovation strategies work
		4.2	Qualitative	(Zahra, Filatotchev, & Wright, 2009)	• Factors that affect how well absorptive capacity works

Below is a discussion of the outcomes of the empirical analysis of the literature:

2.2.1 *The Role of SME Capabilities in Performance after Incubation*

An SME's ability to succeed after completing the incubation program is greatly influenced by their capability. Small and medium-sized enterprises (SMEs) are essential to the health of any country's economy, so it is essential that they have the adaptability to change as circumstances do. Through education, gaining new skills, developing connections, and spotting opportunities, one can become more adaptable (Roundy & Fayard, 2019).

A study by Eikelenbomm and De Jong (2019), which examined 297 SMEs in the Netherlands, sought to evaluate the dynamism and performance of the SMEs. The results of the study indicated that dynamic capabilities were positively correlated with sustainability performance, particularly the external integrated dynamic capabilities as contributors to sustainability performance, which is the capacity of an organization to obtain, incorporate, and utilize external knowledge and resources to create new opportunities (Eikelenbomm & De Jong, 2019).

According to Mongkol (2021), the innovative, absorptive, and adaptive capabilities of SMEs are key capabilities that improve SME performance. Firms must be able to recognize and seize opportunities in emerging markets, as well as be able to adapt their routines and resources to shifting external market conditions (Roundy & Fayard, 2019).

2.2.1.1 Adaptive Capability

Particularly in environments that are dynamic like those that SMEs operate in, these capabilities give organizations a competitive edge. This capability concentrates on an organization's capacity to recognize and seize new markets as well as to align its resources in an environment that is shifting. It is closely related to the overall strategy and resources of the organization. “Scanning the

environment," "change management," and their ability to withstand various types of disruptions are required for this (Ponomarov & Holcomb, 2009).

Eshima and Anderson (2017), determined that the firm's ability to adapt to changing market and product assumptions with its available resources was related to the transition of adaptive capability whereas Wang and Ahmed (2007), identified adaptive capability as an action of response.

2.2.1.2 Absorptive Capability

This specific competency focuses on how well a SME can use its resources efficiently and understand the significance of new information in spotting opportunities. In 1990, Cohen et al. defined this as a company's capacity to appreciate the value of fresh information, assimilate it, and use it commercially. Later research by Zahra et al. (2009), revealed that absorptive capabilities significantly increase an organization's capacity for exploring new opportunities. This was accomplished through a variety of organizational routines and processes that allow businesses to acquire, adapt, evolve, and take advantage of knowledge to produce sustained performance. Mongkol (2021) supported Zahra's definition in that it addresses the element of resources focusing on absorptive capability as an economy's capacity to efficiently utilize its capital resources.

2.2.1.3 Innovative Capability

This is the business's capacity to recognize novel concepts and develop them into fresh, improved goods and services. Companies that are highly innovative exhibit long-term success, according to Sudolska and Lapińska (2020), not only in terms of market share but also with their products and ROI.

To ensure ongoing performance following the incubation process, it is crucial that the SMEs develop the capabilities since they are critical to their success as identified in the literature.

Small and medium-sized enterprises (SMMEs) have been designated as tools for achieving the socio-economic goals and innovation outlined in the National Development Plan because SMME innovation is viewed as a critical factor in determining growth and development in South Africa (Matekenya & Moyo, 2022). Therefore, it is critical that SMEs have these innovative skills which will contribute to not only their sustainability but growth and development in the context of South Africa.

2.2.1.4 Developing the Capabilities & Incubator's Role

Developing connections with external stakeholders, keeping an eye out for new opportunities, and learning new information and skills through instruction, training, and mentoring are all ways that SMEs can improve these capabilities (Eikelenbomm & De Jong, 2019). The incubator program's learning components, which are all enabled and provided with the aim of developing and growing businesses that will be active participants in the economy, are all included in the key areas that were identified.

Incubators use knowledge transfer to aid in the development of SME capabilities. By sharing knowledge, they can help the SMEs incubated develop the skills they need to become successful stand-alone companies (DTI, 2014). The program structure, the priceless counsel on business training, office and production facilities, access to the market, and access to finance all contribute to this knowledge transfer (SME Guides, 2022).

One of the essential elements of the entrepreneurial ecosystem is the incubator, which was recognized in Roundy and Fayard (2019) study as an agent within the ecosystem with the capacity to improve the dynamic capabilities of SMEs through knowledge transfer. The findings of this study identified several mechanisms by which EEs influence entrepreneurs' behaviour and the success of their businesses within the context of the existing entrepreneurial ecosystem components. This study finds that in thriving entrepreneurial ecosystems (EE),

SMEs are better able to identify, seize, and reorganize resources and opportunities.

In a study by Tilana (2015), with a focus on technology-based businesses in their early stages of development, the effect of business incubation was examined regarding how it shapes the mindset of the entrepreneur. The author contends that giving incubators access to resources, support, and mentorship can help them develop an entrepreneurial mindset. Tilana (2015) emphasizes that business incubators can aid in the development of incubatees' skills and knowledge necessary for their success. This research aligns with the findings of Roundy and Fayard (2019) emphasizing the crucial role of knowledge and skill transfer in promoting the success of small and medium-sized enterprises (SMEs). As such, it will serve as a guiding principle for this study.

According to Roundy and Fayard (2019) entrepreneurs are better equipped to recognize, grab, and reorganize resources and opportunities in thriving entrepreneurial ecosystems (EE). Additionally, they propose that business owners do not discover or develop opportunities alone but rather depend on a complex web of resource providers, one of which can be identified as incubators that support prosperous EEs (Roundy & Fayard, 2019).

The results of this study revealed several mechanisms by which the EEs affect entrepreneurs' behaviour and the performance of the entrepreneurs' ventures within the framework of the existing entrepreneurial ecosystem components. These mechanisms were further conceptualized to divide the study into three sub capabilities, which were identified as identifying and evaluating opportunities, mobilizing resources to pursue opportunities and capture value, and continuously renewing, configuring a EEs were found to be the entrepreneurs' agents for enhancing these three qualities (Roundy & Fayard, 2019).

2.2.2 Challenges Affecting SME Performance

Both SMEs that have been incubated and those that have not encounter several challenges that prevent them from succeeding.

Due to the growing popularity of entrepreneurship ecosystems, Msimango-Galawe and Majaja (2022) sought to identify the gaps and weaknesses that prevent the ecosystem from operating at its best. Their research mapped the needs and difficulties faced by SMEs, with a particular focus on Johannesburg. After mapping the issues and needs of the entrepreneurial ecosystem domains that represented the biggest barriers for entrepreneurs in the City of Johannesburg were accessibility to markets, finance, and human resources, the main issues identified in this study by Msimango-Galawe and Majaja (2022) were availability of markets, equipment, and entrepreneurship education. The study identified critical needs such as investors, suppliers, a supplier network, and vendors.

Van Wyk's (2022), focused on the difficulty small businesses in South Africa have in making strategic decisions as challenge for SMEs. This study used a qualitative study with 20 South African small business owners to investigate the influencing factors. The factors identified included operations, benefits, limitations, and risk. Small businesses must consider the risks when making decisions, be aware of the opportunities and constraints present in both the internal and external environments, make sure their operations are efficient and effective, and be aware of their own strengths (Van Wyk, 2022).

However, Jansen van Vuuren (2022) study identified infrastructure problems, a lack of innovation, issues with human resources, and a lack of strong professional networks as the most common challenges.

Other barriers to sustainability have been identified, and according to Jaramillo et al. (2018), these refer to internal barriers that SMEs can control. One of the barriers is a lack of commitment from management. There are external obstacles like rules from the government and rivalry from big businesses. However,

Jaramillo et al. (2018) determined that for SMEs, a lack of resources and a lack of expertise are the two biggest obstacles to sustainability.

The study highlights the need for better policies and programs to be implemented to foster an environment that is supportive of small and medium-sized businesses (Jaramillo et al., 2018).

2.2.3 Effectiveness of Incubation in Encouraging Sustainability

The main goal of incubators within the entrepreneurial ecosystem is to help with new ventures and ideas that help entrepreneurs overcome obstacles like lack of financial knowledge, difficulty accessing markets, and lack of skill development (Hewitt & Janse van Rensburg, 2020). Therefore, increasing the survival rate of start-ups and small businesses sustainability requires the support of business incubators.

A study by Lose (2021) examined how business incubators in Cape Town, South Africa, helped SMEs meet their needs for entrepreneurial skills. The paper highlights the range of services the incubator offers and makes the case that incubators can significantly aid the development of entrepreneurial skills. Lose (2021) emphasizes that access to mentors, training in a variety of areas to develop the skills the entrepreneur needs to succeed in business, and lastly, providing a network of support for entrepreneurs to help those experiencing challenges are all ways that incubator support is effective in encouraging SME performance.

Schutte and Direng (2019), using a case study of Botswana, illuminated the role that entrepreneur incubation plays in business growth and job creation. The purpose of the study was to ascertain whether the skills and mentoring provided during incubation influenced the development of entrepreneurs and whether this resulted in the incubated business creating jobs (Schutte & Direng, 2019). According to the study's findings (Schutte & Direng, 2019), the incubation process benefited entrepreneurs and helped to create jobs. Unfortunately, the study's

sample size restrictions prevent extrapolating the findings to the entire country of Botswana.

Schutte and Direng (2019) made no comparison between the ability of incubated and non-incubated businesses to grow and hire new employees. Schutte and Direng (2019) asserts that research gaps exist regarding the post-incubation success of entrepreneurs and determining their likelihood of success.

Akpoviroro et al. (2021) conducted a study on "The role of business incubation in promoting entrepreneurship and SMEs development". All 60 participants in the study were Nigerian incubators. The study found that business incubation coaching positively impacts human resource management in relation to entrepreneur performance, and that incubation business knowledge positively influences the degree of sales turnover in entrepreneur performance. It also showed that 70% of all startup businesses that made it through the first three years of operation had successfully finished an incubation program. The effectiveness of incubators in promoting sustainability is further demonstrated by this (Akpoviroro et al., 2021).

2.2.4 The Role of Innovation in Sustaining SME Performance

Innovative tactics and skill transfer are essential during the incubation process to produce viable SMEs that actively participate in the economy and are entrepreneurial leaders.

Numerous studies identify innovation as one of the most forward-thinking factors influencing socioeconomic growth, particularly in emerging economies. Due to the rapidly evolving technology, businesses are struggling to maintain a competitive advantage, making innovation even more crucial (Makuwe, 2022). SMEs are the foundation of a strong economy, and for them to fully support the economic activities of a nation, they must be innovative in the goods and services they offer to consumers (Makuwe, 2022).

Zahra et al. (2006) identified innovation as a mediating factor between SME capabilities and long-term performance. The study highlighted that if organizations want to stay competitive in the modern world, they must actively pursue innovation.

Innovation now plays a critical role in the success of SMEs in a competitive environment that is constantly shifting. SME's can increase their competitiveness and self-sustainability by concentrating on innovation (Makuwe, 2022).

*2.2.*5 Summary of research gaps

The literature-cited papers make a significant contribution to the current understanding of SME capabilities, SMEs' challenges, the effectiveness of incubation programs, and the role of innovation. There were several unmet research needs for each of them highlighted in the table above.

The main findings concern the studies' inability to be generalized, the fact that there is a sizable body of literature on both SMEs and incubators separately but little research on how the two are related. Small and medium-sized businesses that have been incubated are not specifically addressed in research studies for SMEs, which are more broadly focused. However, as Schutte and Barbeau (2022), noted that literature addresses the effects of incubators on SME performance, but no literature goes into detail about the elements that support ongoing SME performance among incubated beneficiaries.

2.3 Analytical Framework

2.3.1 Theoretical Framework

Small and medium-sized businesses (SMEs) are crucial to all economies, but they are especially important in developing countries where there are serious problems with inequality, employment, and income. For SMEs to succeed, they must be able to quickly adapt to changing conditions, which they do through

innovation (Inan & Bititci, 2015). Lack of resources, high capital costs associated with implementing sustainability measures, and a lack of expertise are frequently cited in the literature as obstacles to the sustainability and innovation of SMEs, including those that have gone through the incubation process (Jaramillo et al., 2018).

Innovation now plays a critical role in the success of SMEs in a competitive environment that is continuously shifting. By concentrating on innovation, SMEs can increase their competitiveness and sustain themselves for longer (Makuwe, 2022).

The resources, abilities, and competitiveness of a business incubator all play a significant role in inspiring the success of SMEs (Lose & Kapondoro, 2020). In addition, Hewitt and Janse van Rensburg (2020) added a factor to consider that emphasizes the necessity of collaboration and partnership between incubators and SMEs as well as a shift away from a transactional relationship to guarantee the sustainability of SMEs beyond the incubation period.

Understanding the capabilities and abilities of SMEs, which contribute to their performance after completing an incubation program in a constantly changing competitive climate, from a theoretical perspective is crucial in identifying the factors that influence performance. The above research findings will be taken into consideration to assist in building a conceptual framework.

The theoretical framework that will direct this investigation and provide a response to the study question will be emphasized in the sections to follow.

2.4 Rationale of Theories

The most prevalent theories identified in the literature were Barney's (199) Resource-Based Theory and Teece et al. (1997) Dynamic Capabilities Theory, which were both used in the studies. Other theories mentioned in the literature include the absorptive capacity theory, the network theory, and the entrepreneur

ecosystem theory. All these theories show how effective performance is achieved.

Understanding the capabilities of the SMEs, innovation knowledge, and effectiveness of incubator support can help identify areas for improvement and establish dynamic capabilities for the SMEs to ensure sustainability. The resource-based theory (RBV) and dynamic capabilities theory, which emerged from the RBV, will be analysed along with existing literature where the theories have been used to identify the applicable theory for this research.

2.4.1 Resource-Based Theory

According to the Resource-Based Theory, companies can develop distinct, valuable resources that are difficult for their rivals to replicate to gain a long-term competitive advantage (Barney, 1991).

The idea focuses on an organization's internal resources and assesses their capacity to gain a competitive edge. The theory seeks to provide more detail on the resources that companies may have that could eventually give them a long-term competitive advantage (Barney, 1991). There are four conditions that must be met, according to Barney (1991), for these resources to contribute to a firm's competitive advantage. These resources were categorized by Barney (1991) as physical, human, organizational, and intangible. The resource needs to be priceless, uncommon, unique, and unreplaceable.

A different perspective for the resource-based view was presented by Sirmon and Hitt (2009). It was argued that firms can achieve competitive advantage by managing their resources in a dynamic environment. This perspective differed in that it put more emphasis on the dynamic capabilities. This study also discovered that companies could develop dynamic capabilities to adjust to change and enhance performance to maintain a competitive advantage. According to the study, businesses were more likely to maintain a competitive advantage if they

were able to adjust their resources to changing market conditions (Sirmon et al., 2009).

Teece (2007) and Helfat and Peteraf (2009) also investigated the topic of dynamic capabilities, focusing on how important it is for a company to develop these skills to take advantage of new resources and opportunities. All three studies, however, focused on the problem of firms failing to consider the need for adaptation in a constantly changing environment. The studies argued that the resource-based approach did not consider the need for businesses to adapt and change in unpredictably changing environments. Helfat and Peteraf (2009) assert that in addition to utilizing their most valuable resources, businesses can achieve sustainability by creating novel potential capabilities over time through learning, acquiring new skills, and accumulating both tangible and intangible assets. The concept of dynamic capability theory was based on the resource-based theory, which highlighted the importance of adaptation and change in dynamic situations (Helfat & Peteraf, 2009)

2.4.2 Dynamic Capabilities Theory and SME Performance

According to the Dynamic Capability Framework, enterprises can develop dynamic capabilities to gain a durable competitive advantage. These dynamic skills highlight how a company can create new capabilities to adapt to changing circumstances (Teece et al., 1997). The dynamic capability theory is centred on the capacity to develop, merge, and transform internal and external competences to deal with the quickly changing environment (Teece, 2007). According to Teece (2007), the dynamic capabilities theory emphasizes the value of dynamic skills in empowering businesses to not only chase new opportunities but also adapt to changing surroundings. According to Teece's (2007), companies with high dynamic capabilities—like learning, creativity, and flexibility—are better positioned to take advantage of new opportunities, counter new threats, and get past growth obstacles.

In the following years, the theory of dynamic capabilities was further developed in a study by Teece (2007) to better analyse and develop dynamic capabilities for sustainable business performance. From this study, a framework was created to help people understand the capabilities needed to achieve sustainable business performance. Four essential processes were recognized by the framework for creating and deploying dynamic capabilities, and they were as follows:

- **Sensing** Opportunities and Threats: recognizing changes in the external and internal environment that can affect the performance of the firm.
- **Seizing** Opportunities: Businesses must be able to respond swiftly and decisively to opportunities by allocating resources and changing processes to take advantage of such chances.
- **Transforming Resources**: This focuses on the organization's capacity to create new capabilities and modify existing ones to take environmental changes into account to stay one step ahead of the competition.
- **Learning:** This demonstrates the business' capacity to draw lessons from past mistakes and enhance its capacity to detect, seize, and reconfigure changes.

2.4.3 Dynamic Service Innovation Capabilities

In a study to investigate the impact of dynamic capabilities on startup growth for service providers, Teixeira et al., (2021), proposed a novel theoretical dynamic capabilities model known as the dynamic service innovation capabilities (DSICs) model.

Sensing customer demands, sensing complex choices, conceptualizing, co-producing, and coordinating, expanding, and extending are the five dynamic capacities operationalized in this approach.

- ***Sensing customer demands*** focuses on the ability of a company to comprehend the needs of current or potential clients. Service providers are becoming more customer-focused to gain an edge over rivals.

- ***Sensing Complex Choices***: enables a service provider to identify new technical options for service creation and improvement. Information technology was found to mediate the impact of innovation on firms' performance, according to research by Dibrell et al., (2008) This is in addition to having a positive impact on small business performance (Dibrell et al., 2008).
- ***Conceptualization Capability***: This has to do with delivering a fresh value proposition to a particular clientele or group by fusing fresh resources (Janssen et al., 2016).

The goal of the study was to examine how DSICs, and startup growth interact in a developing nation (Teixeira et al., 2021).

According to the findings of this study, dynamic capabilities led to new knowledge configurations that enabled service providers to create innovations in conjunction with their clients to satisfy consumer demand and gain a competitive advantage (Teixeira et al., 2021). The relevance of this study can be related to SMEs, and by doing so, one can understand that if the identified DSICs are adopted by the SMEs, this could lead to growth and sustainability for the SMEs over the long term.

This study aims to explore and examine the variables that affect SME performance. Considering the theoretical literature, Teece's (2007) dynamic capabilities theory will be applied to this study because it addresses sustained performance in a constantly changing environment and emphasizes the long-term orientation of an organization's capabilities and its capacity to develop and build up resources over time (Teece, 2007).

Other factors identified in literature, such as innovation as identified by Makuwe (2022) and incubation support as an essential element discovered by Roundy and Fayard (2019) on the model focused on the impact of EEs on dynamic capabilities, where the major theoretical justifications were based on the idea that incubators are an EE mechanism that gives entrepreneurs access to networking

and financing opportunities, enhancing their seizing and reconfiguring actions, will be employed and modified in hopes of exploring how key incubator components influence or impact SME Capabilities through knowledge transfer.

The framework for presenting the suggested model of dynamic capabilities will include the following forms: independent variables, namely: “SME Sensing Capabilities,” “SMEs Seizing Capabilities,” “SMEs Transforming Capabilities,” “SMEs Learning Capabilities” (Teece, 2007).

Despite the paucity of literature on incubators supporting the sustainability of incubators, the research does highlight how the performance of the incubator and various activities and the environment of the incubation contribute to the sustainability of entrepreneurs. Business incubators must effectively conceptualize their company operating models and be able to define how they add value to entrepreneurs, according to Hewitt and Janse van Rensburg (2020), to build a partnership that will help secure their longevity. Taking this into account, the suggested model will show how the incubator adds value that affects the SMEs' dynamic capabilities, ensuring the SMEs' longevity.

Thus, ***SME Performance*** will be the dependent variable for this study, innovation will serve as the mediating variable as identified as a key contributor by Makuwe (2022), and "Incubator Support" will serve as the moderating variable around the concept of knowledge transfer and resources as identified by Roundy and Fayard (2019) & Hewitt and Janse van Rensburg (2020)

*2.*4.4 Conceptual Framework

The dynamic capabilities theory posits that businesses can maintain a competitive advantage by recognizing and seizing opportunities and adapting their resources and capabilities to changing environments. This theory forms the basis of the conceptual framework for the study. The innovation literature, which suggests that innovation is a major factor in SME performance, is a further source of influence for the framework.

According to the framework, SME dynamic capabilities (sensing, seizing, transforming, and learning capabilities) can have an impact on long-term SME performance through innovation. Support from incubators may influence the relationship between SMEs' capabilities and innovation as well as the relationship between innovation and enduring SMEs' performance.

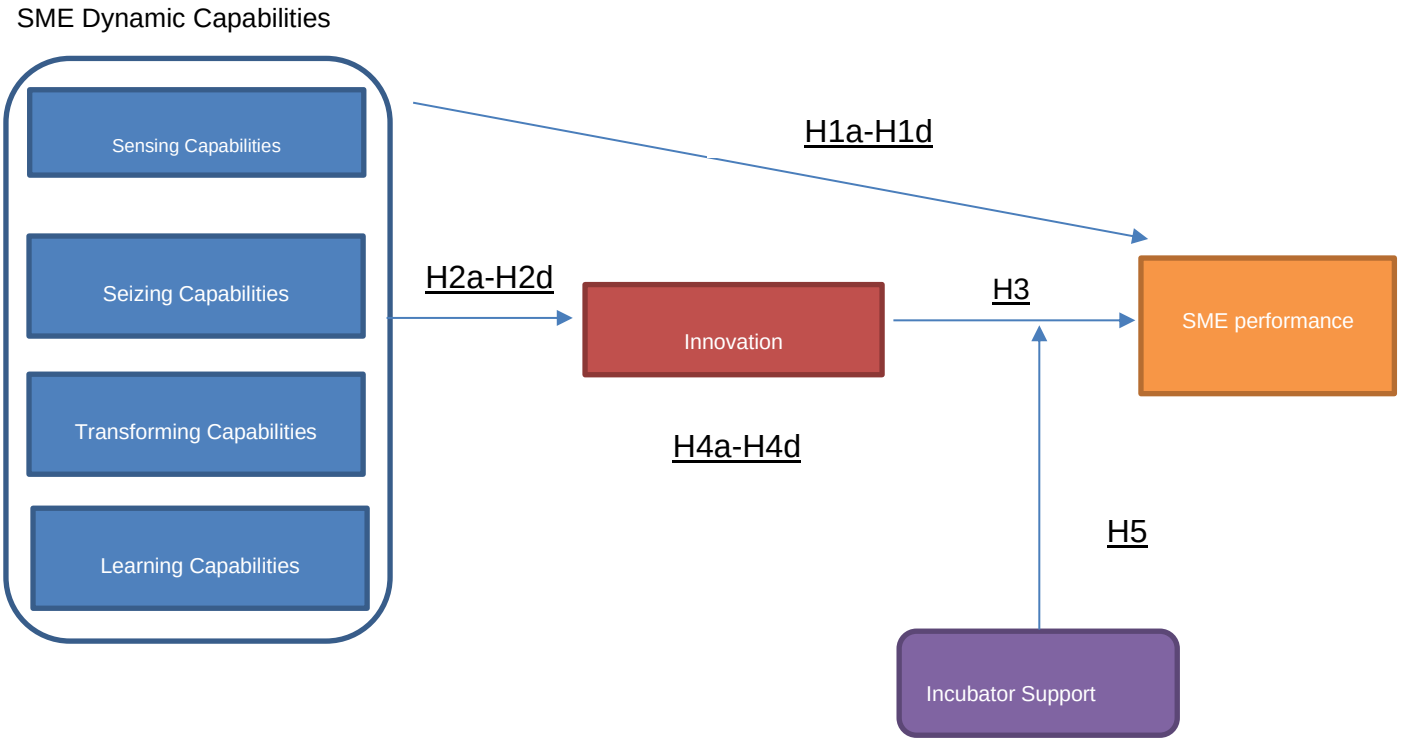


Figure 1: Conceptual Framework for research study.

2.4.5 Linking SME Dynamic Capabilities and SME Performance

SMEs face a variety of difficulties, but once these difficulties are understood, they can be overcome by strengthening their capacities both during and after the incubation program. Long-term success is more likely for SMEs with strong capabilities. According to Teece et al., (1997), the ability of SMEs to respond to

shifting market conditions will be facilitated by improved dynamic capabilities (Teece et al., 1997). If SMEs do not implement processes and are unable to realize, capture, and reconfigure possibilities as well as adapt to changing surroundings, achieving sustainability will not be achievable (Eisenhardt & Martin, 2000).

The relationships mentioned above lead to the following hypotheses:

H1a: SME sensing capabilities are significantly related to ongoing SME performance.

H1b: SME seizing capabilities are significantly related to ongoing SME performance.

H1c: SME transformation capabilities are significantly related to SME performance.

H1d: SME learning capabilities are significantly related to ongoing SME performance.

2.4.6 Linking SME Dynamic Capabilities and Innovation

Studies have identified that SME dynamic capabilities and Innovation contribute to the abilities and skills required for SME performance and maintaining a competitive advantage especially in dynamic business environments (Deyassa, 2023).

According to Ettrich and Andersen (2021), organizations that cling to their traditional ways of doing work impede their ability to survive, while those that embrace evolving changes and utilize their dynamic capabilities and innovation as an important component will assist them to thrive against the odds (Ettrich & Andersen, 2021).

H2a: SME sensing capabilities are significantly related to innovation.

H2b: SME seizing capabilities are significantly related to innovation.

H2c: SME transformation capabilities are significantly related to innovation.

H2d: SME learning capabilities are significantly related to innovation.

2.4.7 The Mediating Influence of Innovation

Numerous studies identify innovation as one of the most forward-thinking factors influencing socioeconomic growth, particularly in emerging economies. Due to the rapidly evolving technology, businesses are struggling to maintain a competitive advantage, making innovation even more crucial (Makuwe, 2022). SMEs are the foundation of a strong economy, and for them to fully support the economic activities of a nation, they must be innovative in the goods and services they offer to consumers (Makuwe, 2022).

Zahra et al. (2006) identified innovation as a mediating factor between SME capabilities and long-term performance in their study. The study further highlighted that if organizations want to stay competitive in the modern world, they must actively pursue innovation.

Another study by Kocoglu et al. (2011) looked at how innovation and TQM affected the link between organizational learning and firm performance and found that innovation played a role. According to this study, a company's performance and innovativeness are positively correlated. It also underlined that an organization's performance is significantly impacted by innovation orientation and implies that businesses need to be innovative to obtain a competitive advantage.

Therefore, organizations must actively explore innovation if they want to remain competitive in today's modern world. In a competitive climate that is constantly changing, innovation plays a vital role in the performance of SMEs and has become extremely important. Focusing on innovation helps SMEs become more competitive and sustain themselves for a longer period (Makuwe, 2022). To create viable SMEs that actively contribute to the economy and are entrepreneurial leaders, innovative tactics are crucial during the incubation process.

H3: Innovation is significantly related to SME Performance

H4a: The relationship between SME sensing capabilities and SME performance is mediated by innovation.

H4b: The relationship between SME seizing capabilities and SME performance is mediated by innovation.

H4c: The relationship between SME transforming capabilities and SME performance is mediated by innovation.

H4d: The relationship between SME learning capabilities and SME performance is mediated by innovation.

*2.4.*8 Linking Incubator Support and SME Performance

During the incubation process, the capabilities of the incubator are extremely important to the development of the SMEs. It will be impossible for entrepreneurs to survive after exiting the incubator if these capabilities and components fail to aid the development of SMEs.

Incubators are recognized as support services in the entrepreneurial ecosystem that are intended to enhance the entrepreneur's capacity to create sustainable businesses around identified opportunities (Roundy & Fayard, 2019). By offering support with administration, business guidance, educational opportunities, technical assistance, capital access, and networking opportunities, incubation is a crucial component of the entrepreneurial ecosystem that ensures that entrepreneurs create successful businesses (Schutte & Barbeau, 2022).

Salau (2022), investigated the moderating effect of incubator-provided entrepreneurial training on the association between a company's performance and its entrepreneurial orientation. According to the study, training initiatives can amplify the benefits of an entrepreneurial mindset for a business's performance (Salau, 2022).

The relationships mentioned above lead to the following hypotheses:

H6: The relationship between innovation and SME success is moderated by incubator support.

2.5 Conclusion of Literature Review

It is clear from the literature review, and the articles read that there are research gaps related to the themes covered regarding the factors influencing SME performance after incubation. There is a wealth of literature about small and medium-sized businesses, but many of its limitations have been noted, including the fact that it is often out of geographical context, only covers a small population, and applies to all SMEs rather than just those that have been incubated.

The literature on incubation, however, consistently identifies incubation programs as efficient means of fostering the expansion and development of SMEs, though it is still difficult to comprehend sustained performance after the incubation program has ended.

Numerous studies were discovered to be pertinent to comprehending the elements that improve entrepreneur success, and the dynamic capabilities framework was captured through a thorough review of the literature. It has been decided that the "Dynamic Capability Framework" by (Teece, 2007), which has been modified for this study, is the appropriate framework because it considers a rapidly changing environment that enables a firm to have a competitive advantage.

The research methodology will investigate the elements that affect SME performance after incubation through a quantitative study of incubatees. This will support the identification of gaps and potential areas for improvement to help SMEs, policymakers, and incubators make decisions.

CHAPTER 3. RESEARCH METHODOLOGY

3.1 Introduction

This chapter of the paper will discuss the research methodology that was used to conduct this study. Priority will be given to the study's paradigm and the approach that was used, followed by the research design, where the benefits and drawbacks of the chosen design will be discussed. Following this, the data collection approach and the instrument will be discussed. The data analysis techniques employed for this study will also be covered in this chapter. Lastly, the measures taken to ensure the study's validity and reliability will be covered, along with the ethical considerations that were made to ensure the rights, welfare, and protection of the participants and the communities in the study, as well as an outline of the study's limitations.

3.2 Research Paradigm

The positivist research paradigm was used in this study because it is the best when working with observable reality in society that leads to generalizations (Keong et al., 2023). Three principles underpin positivism: first, that measurement and observation are the main methods for producing reliable data; second, that in order to prevent subjectivity or bias from influencing the results of the research, positivism maintains that researchers should maintain a distance from the subject of the study; and third, that the goal of positivism is to identify the general principles that underpin all sciences (Keong et al., 2023).

Due to its close association with positivism, a quantitative study was employed to investigate the relationships between the variables included in the proposed model. According to Keong et al. (2023), the utilization of quantitative research methodology facilitated the accurate quantification of variables, rendering the study observable and empirical. This method also helped to maintain the study's objectivity, ensuring that the findings are free from the prejudices of the

researchers and enabling the use of statistical techniques to examine the connections between the variables that were identified (Sekaran & Bougie, 2016)

3.3 Research Design

A research design is an approach that uses empirical information to address the study's issues (McCombes & Bhandari, 2023). A descriptive design was adopted for this investigation. Given that this was an observational study, a particular kind of descriptive design called cross-sectional design was employed with the goal of gathering a moment in time of data pertaining to the variables listed in the conceptual framework (Bern & Corfu, 2014). This design was advantageous because the quantitative data results gave a broad picture of the situation regarding the variables influencing SME performance.

Advantages:

- Cross-sectional studies are more cost- and time-effective, enabling quick information collection (Levin, 2006).
- Larger sample size is used, increasing the statistical validity and generalizability of the results (Sedgwick, 2014).
- Increases the study's external validity and enables more trustworthy conclusions to be drawn (Mann, 2012).
- Allows for the concurrent analysis of multiple variables (Setia, 2016).
- Allows comparing various groups within a population (Wang & Cheng, 2020).

Disadvantages:

- It becomes difficult to establish cause-and-effect relationships when data is only presented as a snapshot (Levin, 2006).
- Depends on respondents' memory, which may be skewed or give desirable answers, causing data inaccuracies (Stone & Shiffman, 2002).
- Unable to follow trends or changes in variables (Wang & Cheng, 2020).

3.4 Population and Sample

3.4.1 *Population*

The population of a study is the entire group required to draw conclusions about it (Bhandari, 2020). The study's population consisted of 382 incubated beneficiaries from four incubation organizations in South Africa, spanning various provinces and sectors; this figure represents the total number of incubated beneficiaries identified in the shared data from the incubation organizations that granted permission for data collection. A sample in a study is the specific group that the data will be collected from (Bhandari, 2020). Using the Raosoft online calculator, it was determined that the population size required a sample size of 192 incubated beneficiaries from the identified incubation organizations. This will ensure accurate results within a 5% margin of error and a 95% confidence level.

- **Sampling Method and Procedure**

The non-probability purposive sampling design was used in this study to select a sample of the population for this quantitative investigation. Non-probability purposive sampling, as defined by Nikolopoulou (2022), is a subset of sample selection that selects participants for a study using non-random methods. This sampling strategy was employed to guarantee that the chosen sample possessed the traits, expertise, and experiences related to incubation necessary to enable the provision of thorough and in-depth data via the quantitative investigation. In this case, SMEs were selected from various incubators, aligning with the research focus on understanding what influences their performance post-incubation.

The inclusion criteria for the quantitative study were as follows:

- SME must have gone through an incubation program and completed it.
- SME must be based in South Africa and completed program in South Africa.

Numerous incubator organizations, whose information could be found online, were used to identify the sample for the quantitative research. Individual calls and emails were made to each of these organizations to solicit their assistance with the research and to obtain permission to use their database for sharing the survey link. The survey link was further shared in various entrepreneur WhatsApp groups and on LinkedIn, specifically targeting SMEs that had completed an incubation program, to attract more participants.

The following incubators made access to databases containing SME data possible.

Table 2: Sample Frame

Incubators	**SMEs Incubated (Population)**	**SMEs responded to study**
Incubator 1	282	23
Incubator 2	33	1
Incubator 3	67	4
Incubator 4 - Social Media	Unknown	15
Total	**382**	**43**

Table 2 represents the sample frame for this study. To assess whether the response rate and sample size are statistically good and representative of the population, we need to consider several factors:

- **Response Rate**

The response rate refers to the number of SMEs that responded to the study.

Based on a population size of 382 identified from the incubator organisations that shared data relating to incubator beneficiaries using the Raosoft online calculator, a sample size of 192 was needed to have accurate results within a 5% margin of error and a 95% confidence level. However, for this research, 43 responses were received.

This research paper had a 22% response rate (43 out of 192). Edwards (2024), states that a response rate of 20–25% is typical for online surveys. Since the

responses were gathered via an online survey and range from 20 to 25 percent, it follows that the response rate for this study is acceptable at 22 % (Edwards, 2024).

- **Representativeness**

A representative sample accurately reflects the characteristics of the population.

The sample includes SMEs from various incubation programs, which increases the diversity of perspectives. However, some programs have higher representation than others, and the response from the "Others" category (LinkedIn and WhatsApp) is unknown, which may introduce bias.

Overall, while the response rate is acceptable and the sample size is small, the purposive sampling approach ensures relevance to the research objectives. The diversity of incubation programs represented in the sample enhances their potential representativeness. However, caution should be exercised when generalizing findings beyond the sampled SMEs and their respective incubator programs.

3.5 Data Collection

Data collection is the process of collecting and evaluating information to address research problems and questions (Simplilearn, 2023). Data collection for this research study employed a quantitative approach and primary data for this research study was collected directly from the study participants using an online survey administrated on Microsoft forms which included predefined questions.

3.5.1 Data Collection Approach and Instruments

3.5.1.2 Data Collection Approach

To assist with the study, incubation organisations were identified using the internet and various websites with content relating to incubators in South Africa. Thereafter, the identified organisations were approached telephonically and through emails requesting support and participation in this study. The requirement for the incubation organisations was for them to sign a permission letter granting access to the use of their database, which included previously incubated SMEs. Once approval was received from the incubators that were willing to participate in this study through their submission of a signed participation letter, the survey link was shared with them to distribute to individuals in their database that had completed an incubation program with them.

In addition to this, the survey link was further shared using LinkedIn and various entrepreneur WhatsApp groups identified to increase the number of study participants. The online survey was easily accessible to participants, and they could make use of their computers, phones, and any other electronic devices to complete it. Through the identified incubator organisations that gave permission, LinkedIn, and WhatsApp communities, the following responses were received:

- From the incubation organisations approached, three incubation hubs provided feedback in the form of signed permission letters.
- 47 contacted incubation organizations did not respond at all.
- The survey was completed by 43 incubated SMEs.

Before the survey was shared, the following measures were taken:

1. To prevent misunderstanding or incorrect interpretation, the research's variables and objective were clearly stated.
2. The validity and reliability of the research instrument (survey) were tested using a sample of participants.

3. The appropriate sampling strategy was identified for this study.
4. The University granted ethical approval.
5. The objective of the study was clearly explained to participants while keeping in mind the University of Witwatersrand's ethical standards.
6. A safe and secure storage was identified to keep the data collected.
7. Implemented quality control measures to guarantee the reliability and accuracy of the respondent data received, identifying any mistakes or missing data.

3.5.1.3 Quantitative Survey

A structured questionnaire was developed as a data collection tool that the respondents took no longer than 10 minutes to complete. This questionnaire was made up of both closed-ended and open-ended questions. The predetermined responses were rated on a 5-point Likert scale. The survey's questions centred on the literature-identified theories and the conceptual framework's elements, addressing SME dynamic capabilities (sensing, seizing, transforming, and learning), innovation capabilities as the moderator construct, incubator support as the mediating construct, and SME performance (Appendix c).

3.5.1.3.1 Survey Format - (Appendix c)

This section of the survey ensured that participants suitable and eligible for the study were identified. This section captured the relevant information about the participants to allow for data segmentation during the analysis stage.

- **Section 1: Segmenting**

The focus of this section was to identify companies that had successfully completed an incubation program and to understand their operational duration.

- **Section 2: SME Dynamic Capabilities**

The questions for this section were modified from literature by Garrido et al. (2019). This section focused on the SMEs' dynamic capabilities (Sensing, Seizing, Transforming, and Learning). Questions were assigned to each capability to determine whether there is a strong correlation or connection between a SME's capacity to recognize opportunities, alteration, and market trends, and its overall performance over time. To prevent any misunderstanding of the meaning, each dynamic capability was defined before the questions were presented.

- **Section 3: Innovation**

Innovation as a mediating variable was covered in this section. The questions in this section focused on probing the SMEs' perceptions on innovation, explore whether innovation has been a mechanism through which their capabilities have translated into improved performance, and explore whether innovation has contributed to SMEs' acquisition of a competitive advantage. These questions were framed from the literature covered by Makuwe (2022) and Zahra et al. (2006), where innovation was identified as a mediating factor between SME capabilities and long-term performance. The studies highlighted the importance of innovation in staying competitive in the modern world.

- **Section 4: Incubator Support**

To determine the degree to which incubator support is thought to contribute to improved SME performance, respondents in this section were asked to rate the impact of the incubator support as the moderating variable using a Likert scale. Open-ended questions were used to assist in better understanding the areas where incubator support can be improved based on SMEs' experiences. The questions in this section were framed from literature by Salau (2022), focused on the moderating effect of incubator-provided entrepreneurial training on the performance of the beneficiaries. The use of open-ended questions in this section

was to gather a richer understanding of the respondent’s experience and perception of incubator support.

- **SME Performance**

Critical components for SMEs' performance were identified to measure SMEs' performance, and respondents were asked to score their performance after incubation based on these components. The chosen methodology stems from existing literature linking SME performance and incubator support, which supports the validity of performance measurement. The questions, which employed a Likert scale, were centred on training, network access, and incubator resources. By emphasizing these two vital areas—training for skill and ability enhancement and network and resource access for sustained performance—the questions effectively measured performance and indirectly captured important aspects of SME performance.

These dimensions are in line with the body of research that highlights the importance of such types of support systems for the performance of SMEs. Hackett and Dilts (2004) state that through enhancing managerial abilities and resource acquisition—two important performance indicators—training programs and networking opportunities offered by incubators aid in the development of SMEs (Hackett & Dilts, 2004).

3.6 Data Analysis Strategies and Interpretation

Data analysis is the process of transforming collected raw data into ideas and information that can be interpreted either quantitatively or qualitatively (Dibekulu, 2020). Comparing the effects of various treatments on various groups and evaluating whether the study's objectives will be met are key components of data analysis (Dibekulu, 2020). For this quantitative study two main statistical methods were employed for data analysis, descriptive statistics as well as inferential statistics.

3.6.1 Cronbach Alpha

The quantitative study was analysed using SPSS software (IBM SPSS Statistics Version: 29.0.0.0 (241)). After all responses were received, the questionnaire's consistency and dependability were assessed. Using the SPSS software, the Cronbach Alpha was measured to achieve this and ran against the constructs. Cronbach Alpha measurement is used when internal consistency is performed on the questionnaire prior to data collection, it is a method of evaluating the internal consistency and reliability of the instrument by comparing the shared variance or covariance of the instrument's component items to the overall variance (Collins, 2007).

This metric quantifies how closely interrelated items are in the questionnaire. Its value ranges from 0 to 1, with higher scores indicating stronger internal consistency among the items (Tavakol & Dennick, 2011). A high Cronbach's alpha suggests that the items within a scale reliably measure the same underlying construct. After the questionnaire was validated, this enabled the analysis for this research to continue.

3.6.2 Descriptive Statistics

The following phase of the data analysis involved summarizing and organizing the data to describe its basic features using descriptive statistics (Black, 2011). Using descriptive statistics assisted in providing simple summaries about the sample (n= 43-participants). This section focused on demographics (i.e. frequencies & percentages) as well as measures of central location.

3.6.2.1 Demographics

Identified Incubated SMEs that completed the survey were profiled using demographics. This was done to summarize the number of respondents who successfully completed an incubation program, identify the organization that

provided the program, and determine the duration of their operation after completing the program.

3.6.2.2 Measures of Central Location

This section of the descriptive statistics included measures of central tendency and variability, such as the mean, median, mode, range, standard deviation, variance, and sample size (N) for each item. This was done to help provide a summary of how the participants responded to the survey questions. Focus was made on the various constructs of SME capabilities (Sensing, seizing, transforming, and learning), innovation, and incubator support.

3.6.3 Inferential Statistics

After organizing the data using descriptive statistics, inferential statistics were introduced to assist in making predictions using the sample size identified in the study. The use of inferential statistics allows researchers to make inferences or predictions about a population based on data collected from a sample (Rosner, 2015). These methods, including correlation, and regression analysis, enable researchers to draw conclusions about the population while considering the uncertainty inherent in the sampling process.

3.6.3.1 Exploratory Factor Analysis (EFA)

The items of the questionnaire were all ran together to see how they load together using an exploratory factory analysis. Factor analysis is a statistical method that assists in simplifying complex data by identifying the underlying factors that are driving the relationships between variables (Statistics Solutions, 2024). To assess the suitability of the data for factor analysis and to test whether there are significant correlations between variables to be able to extract meaningful factors the KMO and Barlette's Test was conducted. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is a value that indicates the suitability of the data

for factor analysis. The Bartlett's Test of Sphericity is a statistical test that assesses whether the correlation matrix is an identity matrix (Analysis INN, 2020).

After conducting the KMO and Barlette's test the communalities were identified through an extraction method using principal component analysis. Principal components are a small number of linear combinations of the original variables that most effectively explain the variance of all the variables. Principal component analysis is an adaptable statistical approach for separating a cases-by-variables data table to its essential features (Greenacre, et al., 2022). Once communalities were identified the variance and cumulative percentage for each identified component in the principal component analysis (PCA) were measured.

To establish how many factors to keep in a PCA model a scree plot was utilized. A scree plot provides a clear visual depiction of the eigenvalues explained by each principal component in the factor analysis (Sanderson II, 2023). From the scree plot a component matrix was identified and each component was thereafter linked to the constructs of the study.

*3.6.*3.2 Correlation Analysis

The second phase of the inferential statistics included Correlation Analysis. This analysis focused on discovering if there is a relationship, trends, and patterns between variables and how strong that relationship may be positive or negative (Senthilnathan, 2019). This correlation analysis was done using the Pearsons correlation method to understand the correlations among the constructs SME dynamic capabilities, innovation capabilities, incubator support and SME performance within the sample of Incubated SMEs identified for this study. Thereafter items of SME dynamic capabilities construct were assessed individually against SME performance to assist in evaluating the hypothesis identified.

*3.6.3.*3 Regression Analysis

The last phase of the inferential statistics for this study focused on a simple linear regression analysis for independent variable & Multiple Linear Regression for moderating and mediating variables using Baron and Kenny's (1986) approach to test the strength of the relationship. Their approach uses statistics to examine if the identified moderator and mediator variables can explain the relationship between an independent variable X and a dependent variable Y (Baron & Kenny, 1986).

3.7 Quality Assurance

3.7.1 External Validity

According to Sekaran and Bougie (2016), external validity describes how well the study's results can be applied or generalized with certain limitations to situations in the real world outside of the study's particular context. According to Mullinix et al. (2015), external validity enhances the reliability and validity of research findings, thereby increasing the likelihood of study trust and replication.

Considering the definition, the following context can be generalised with certain limitations considering this study:

- The results of this study may be applicable to incubation programs in South Africa, making the findings transferable.
- Transferable to other nations with comparable economic, social, and commercial environments and can offer insight into the elements that affect long-term SME performance in other developing nations.
- Can serve as a model for policymakers' incubators by offering advice on how to create strategies that will improve the performance of SMEs.

- Adaptable to business support organizations outside of incubators for the inclusion of identified influencing factors in their support initiatives.

Although the study on the factors influencing SME performance among beneficiaries of incubation programs in South Africa may offer insightful information, there are some areas where its generalisability may be constrained.

- The study's sample size and sampling strategy may restrict generalizability.
- The study's conclusions might be unique to the South African context and might not be directly applicable to how incubated SMEs perform in other nations. This may be caused by various difficulties and changes in the social, economic, and business environments.
- The strategies and support offered by incubation programs can vary, so the findings might only be applicable to the incubation programs that the SME participants went through.
- Since this study only focused on SMEs that have successfully completed an incubation program, the use of quantitative methods may also limit the generalizability of the findings. SMEs that are not in incubators cannot therefore be generalized.

3.7.2 Internal Validity & Reliability

3.7.2.1 Internal Validity

Internal validity refers to the degree to which the study's findings enable one to draw valid conclusions about the causal connections between the variables chosen for this investigation. Assuring internal validity is essential in the context of this study on "Factors Influencing SME Performance Among Incubated Beneficiaries" to ensure that the observed relationships between the identified constructs and SME performance are accurate and unaffected by other factors or biases.

For this study, the measure of validity that was used was construct validity. Construct validity refers to how well a measure captures what the theory predicts (Kline, 2000). To establish construct validity for this study the methods used were exploratory factor analysis as well as convergent validity. Exploratory Factor analysis is a statistical method that assists in simplifying complex data by identifying the underlying factors that are driving the relationships between variables (Statistics Solutions, 2024). This method was used to assist in revealing that the data structure aligns with expected constructs thus validating the data. Convergent validity measures correlation and this was implemented through the correlation analysis conducted for this study to test the constructs.

To guarantee high internal validity for this study, the following procedures were followed:

- Ensured that the test items measured the intended construct using exploratory factor analysis. This assisted in recognizing and verifying the fundamental structure of the data.
- A multiple regression analysis was used to reduce the possibility of bias from missing variables and increase the internal validity of the results. This is to determine how each individual predictor affected SME performance.
- To improve internal validity, the sample size was chosen at random to represent the population and reduce selection bias.
- Despite the small sample size (n = 43), all reasonable measures were taken to guarantee a random and impartial sampling procedure. This improved the sample's representativeness and lessened selection bias.
- The study used reflexivity when analysing the collected data to make sure that no biased opinions might have had an impact on the conclusions and suggestions.
- Statistical controls were used in the analysis to account for possible confounding factors. Regression models with control variables were used in this process to determine how the main independent variables affected the dependent variable, which in this case was SME performance.

- Instruments and questionnaires were validated on a small sample of the population before the main study. This made it easier to identify and fix any problems that might have impacted the evaluations' validity.
- To ensure the accuracy and dependability of the data collected, stringent data collection procedures were implemented. These procedures included checking the data for errors and inconsistencies before analysing it, using the proper statistical methods, and conducting a pilot study to test the research instrument.

3.7.2.2 Reliability

A study's stability and measurements are what makes it reliable (Pun & Lalla, 2007). Reliability refers to the consistency and stability of the measurements used in a study (Pun & Lalla, 2007). Reliable measurements are crucial for the study on "Factors Influencing SME Performance Among Incubated Beneficiaries" to guarantee reliable and trustworthy results.

To ensure reliability several items were taken into consideration, firstly the instruments reliability as well as the reliability of the items that were being measured in the study. To evaluate the internal consistency of the research tool, the Cronbach alpha was calculated for each construct, with 0.6 – 0.7 indicating an acceptable level of reliability and 0.8 and above representing a very good level (Botha & Masenge, 2022). Another measure for reliability that was employed in the study was factor analysis. This was conducted to examine the underlying structure of the data to ensure that the constructs measured were reliable. In this instance, the general rule suggests that, to increase the constructs' reliability, items with low factor loading (,0.40) should be eliminated from additional analysis.

In addition to this, to ensure reliability, the following was conducted:

- Use of descriptive statistics across different subsets of the sample to support the reliability of the data.

- Clear definitions were provided for concepts and requirements for participants to provide understanding and prevent respondents from interpreting the research question differently.
- Standardized methods were used to collect data to reduce variability resulting from variations in procedure. The questionnaires were completed under identical circumstances by each participant, who also got the same instructions.

3.8 Limitations of the Study

Despite considerable efforts to collect data, the response rate from the targeted companies was not as high as expected. A variety of outreach techniques were used, such as sending direct emails to business representatives, publishing content on LinkedIn, and sending messages via WhatsApp. To further promote involvement, follow-up reminders were also sent.

The below limitations should be acknowledged for this study:

- This limited response rate may affect the representativeness of the sample and, consequently, the generalizability of the findings.
- The study's conclusions might be unique to the South African context and might not be directly applicable to how incubated SMEs perform in other nations. This may be caused by various difficulties and changes in the social, economic, and business environments.
- Cross-sectional descriptive research frequently collect data at a single point in time, which may not accurately represent longitudinal trends or changes over time.

3.9 Ethical Considerations

The University of Witwatersrand's ethical guidelines were followed in conducting this study. The University's ethical approval was obtained from the WBS Ethics Committee before any data for this study could be collected (see clearance

certificate in appendix e). This study was classified as low risk because SMEs were required to share their experiences with their incubation as well as their capabilities, the only foreseeable risk was discomfort.

To ensure that participants were treated with respect, were able to make informed decisions, and that participation in the survey was voluntary, a participation letter prior to participating in the research study was provided as a means of giving consent. However, this research study did not involve any vulnerable groups, put anyone in danger, or have any unintended consequences. Information was collected using an online tool to provide direction for the development of policies and programs or strategies for incubation programs.

The study required incubation organizations to sign a participation letter prior to data collection. After receiving ethical clearance from the university, a formal letter was shared with the incubators, requesting permission to share the survey with businesses that had successfully completed their incubation programs. Once letter was signed by the incubators, a survey link was shared to distribute amongst their networks (Appendix a1).

For participants that were targeted through LinkedIn and WhatsApp groups the participation letter was provided at the beginning of the survey that included information about the study's goals, the procedures that will be used, the factors that led to the participant's identification for the research study, information about how to complete the survey, data collection methods, confidentiality procedures, participation and withdrawal options, and information about the researcher and supervisor (Appendix b).

The information gathered for this study was stored securely both during and after the research on an online platform with access control, and it was not used for any other purpose than this research study.

3.10 Summary

This chapter highlighted the research methodology that was used for this study. A quantitative study was employed to investigate the factors influencing SME performance amongst previously incubated beneficiaries in South Africa due to it being closely related to positivist research, which was the identified research paradigm for this study. The chapter also provided a comprehensive explanation of the study's methodology, including details on the population and sample methods, as well as the data analysis strategies employed for this study. The chapter concluded by outlining the study's limitations and confirming the techniques that were used to ensure the validity and reliability of the research. The research study's conclusions will be covered in the next chapter, which will analyse the quantitative data that was gathered.

Table 3: Consistency table: research questions, propositions, data collection and data analysis

RQ #	State Research Question or Objective	Prop/hyp #	State Proposition or Hypothesis	Data collection detail	Data analysis method
1	What SME Capabilities impact their performance	H1a – H1d	*H1a: SME sensing capabilities are significantly related to ongoing SME performance.* *H1b: SME seizing capabilities are significantly related to ongoing SME performance.* *H1c: SME transformation capabilities are significantly related to and SME performance.* *H1d: SME Learning Capabilities are significantly related to ongoing SME performance*	Survey Section 2.1, 2.2, 2.3	Regression & Correlation Analysis
2	What role does innovation play in maintaining the performance of SMEs and is there as significant relationship between the capabilities and innovation?	H2a – H3	*H2a: SME sensing capabilities are significantly related to Innovation.* *H2b: SME seizing capabilities are significantly related to Innovation.*	Survey Section 2.1, 2.2, 2.3 & 3	Regression & Correlation Analysis

RQ #	State Research Question or Objective	Prop/hyp #	State Proposition or Hypothesis	Data collection detail	Data analysis method
			H2c: SME transformation capabilities are significantly related to Innovation. *H2d: SME Learning Capabilities are significantly related to Innovation.* *H3: Innovation is significantly related to SME Performance*		
3	Does innovation mediate the relationship between SME capabilities and SME Performance.	H4a-H4d	*H4a: The relationship between SME sensing capabilities and SME performance is mediated by innovation.* *H4b: The relationship between SME seizing capabilities and SME performance is mediated by innovation.* *H4c: The relationship between SME transforming capabilities and SME performance is mediated by innovation.* *H4d: The relationship between SME learning Capabilities and SME performance is mediated by innovation.*	Survey Section 2.1, 2.2, 2.3 & 3	Regression & Correlation Analysis, Factor analysis

RQ #	State Research Question or Objective	Prop/hyp #	State Proposition or Hypothesis	Data collection detail	Data analysis method
4	How do incubation programs support SME performance going forward?	H5	*H5: The relationship between innovation and SME Performance is moderated by Incubator Support.*	Survey – Section 4	Regression & Correlation Analysis, Factor analysis
5	What difficulties do SMEs encounter following the incubation phase?		A supportive environment has a significant relationship on SME performance.	Section 4 4.2d	Regression & Correlation Analysis

CHAPTER 4. DATA ANALYSIS

4.1 Introduction

Chapter 4 of the study delves into a comprehensive analysis of the factors influencing SME performance among incubated beneficiaries in South Africa. The study collected 43 responses from the survey shared with the incubation companies, which gave approval for data to be collected using their database. These responses provided a reasonable representation of the population with the scale and time constraints of the study.

This chapter provides an in-depth exploration of the various elements that contribute to the success or challenges faced by SMEs that have undergone incubation programs. Through a combination of descriptive and inferential statistics, the study aims to uncover the key drivers and barriers affecting SME performance in the context of incubator support. By examining these factors, the chapter seeks to offer valuable insights into how incubation programs can be optimized to better support the sustainable growth and success of SMEs in South Africa.

4.2 Descriptive Statistics

The study will present internal consistency, demographics, and summary statistics in this section.

4.2.1 Internal Consistency

By analysing internal consistency, the researchers sought to determine the reliability of the scales used to assess these constructs. The constructs investigated included SME capabilities, innovation capabilities, and incubator support.

The acceptable threshold for adequacy of the Cronbach's alpha is as follows:

- $\alpha < 0.5\ Unacceptable\ \ (unreliable)$
- $0.5 \leq \alpha < 0.6\ Poor\ (very\ low\ reliability)$
- $0.6 \leq \alpha < 0.7\ Acceptable\ (moderately\ reliable)$
- $\alpha > 0.8\ Excellent\ (very\ high\ reliability)$

Table 4: Cronbach's Alpha

Construct	Number of Items	Cronbach's Alpha	Cronbach's Alpha Adequacy
SME Dynamic Capabilities	13	0.833	Excellent (Very high reliability)
Sensing Capabilities	3	0.707	Good (High reliability)
Seizing Capabilities	3	0.639	Acceptable (moderate reliability)
Transforming Capabilities	3	0.689	Acceptable (moderate reliability)
Learning Capabilities	3	0.830	Excellent (Very high reliability)
Innovation capabilities	4	0.897	Excellent (Very high reliability)
Incubator support	3	0.880	Excellent (Very high reliability)

Table 4 presents an overview of the internal consistency assessment conducted for three key constructs: SME dynamic capabilities, innovation capabilities, and incubator support. The table details the number of items comprising each construct along with their corresponding Cronbach's alpha coefficients. For SME Dynamic capabilities, consisting of 13 items, the calculated Cronbach's alpha coefficient was 0.833, indicating a strong level of internal consistency among the items.

The Cronbach's alpha coefficient for the "Sensing Capabilities" which is an item of the SME dynamic capabilities construct scale is 0.707, indicating a moderate level of internal consistency among the items within the scale. This suggests that the items included in the scale tend to measure the same underlying construct of sensing capabilities reliably. With three items in total, this indicates that the scale demonstrates acceptable reliability for assessing sensing capabilities within the context of the study.

The reliability statistics for the "Seizing Capabilities" scale indicate a moderate level of internal consistency among the items within the scale. The Cronbach's alpha coefficient is 0.639, which suggests that the items tend to measure the same underlying construct of seizing capabilities with reasonable reliability. Additionally, the Cronbach's alpha based on standardized items is 0.638, which further supports the internal consistency of the scale. With three items in total, this indicates that the scale demonstrates acceptable reliability for assessing seizing capabilities within the context of the study.

The reliability statistics for the "Transforming Capabilities" scale indicate a moderate to strong level of internal consistency among the items within the scale. The Cronbach's alpha coefficient is 0.689, suggesting that the items tend to measure the same underlying construct of transforming capabilities with reasonable reliability. Additionally, the Cronbach's alpha based on standardized items is 0.695, which further supports the internal consistency of the scale. With three items in total, this indicates that the scale demonstrates acceptable reliability for assessing transforming capabilities within the context of the study.

The reliability statistics for the "Learning Capabilities" scale indicate a high level of internal consistency among the items within the scale. The Cronbach's alpha coefficient is 0.830, suggesting that the items tend to measure the same underlying construct of learning capabilities with strong reliability. Additionally, the Cronbach's alpha based on standardized items is 0.829, which further supports the internal consistency of the scale. With three items in total, this indicates that

the scale demonstrates excellent reliability for assessing learning capabilities within the context of the study.

Similarly, the construct of innovation capabilities, comprising 4 items, demonstrated a Cronbach's alpha coefficient of 0.897, reflecting robust internal consistency among the items measuring innovation capabilities. Lastly, the construct of incubator support, represented by 3 items, yielded a Cronbach's alpha coefficient of 0.880, suggesting a high level of internal consistency among the items assessing support received from business incubators. These findings underscore the reliability of the measurement scales utilized to evaluate each construct within the study.

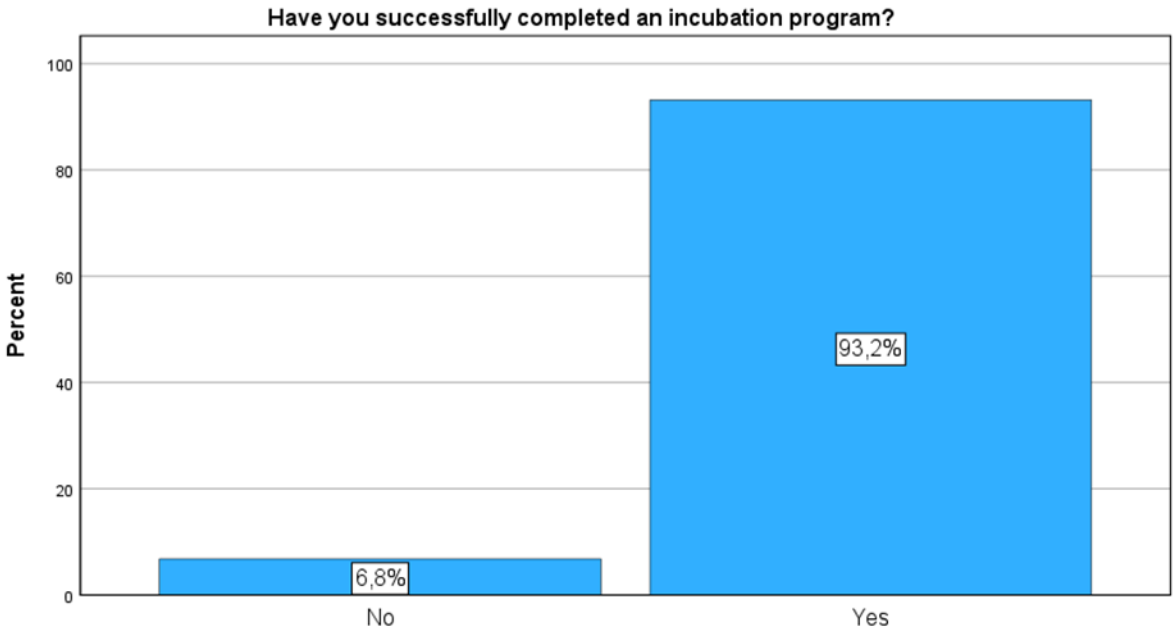
4.2.2 Demographics

Table 5: Incubation Programs Completed by SMEs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Incubation Program 1	1	2,3	2,3	2,3
	Incubation Program 2	1	2,3	2,3	4,5
	Incubation Program 3	20	47,7	47,7	52,3
	Incubation Program 4	3	6,8	6,8	59,1
	Incubation Program 5	2	4,5	4,5	63,6
	Incubation Program 6	3	6,8	6,8	70,5
	Incubation Program 7	1	2,3	2,3	72,7
	Incubation Program 8	1	2,3	2,3	75,0
	Incubation Program 9	1	2,3	2,3	77,3
	Incubation Program 10	1	2,3	2,3	79,5
	Incubation Program 11	1	2,3	2,3	81,8
	Incubation Program 12	1	2,3	2,3	84,1
	Incubation Program 13	1	2,3	2,3	86,4
	Incubation Program 14	1	2,3	2,3	88,6
	Incubation Program 15	1	2,3	2,3	90,9
	Incubation Program 17	2	4,5	4,5	95,5
	Incubation Program 18	2	4,5	4,5	100,0
	Total	43	100,0	100,0	

Table 5 provides details about the incubation programs completed by the participants in the incubation organization identified for this study. The table lists the frequency and percentage of respondents associated with each incubation program. Most respondents (47.7%) completed incubation program 3, followed by 6.8% who completed incubation programs 4 and 6. This table offers insights into the diversity of incubation programs involved in supporting entrepreneurs in various sectors.

Figure 2: Incubation success



In Figure 2, the responses of participants regarding their completion of an incubation program are illustrated. The graph indicates that 93.2% of respondents reported successfully completing an incubation program, while 6.8% indicated that they had not. This figure demonstrates the high participation rate in incubation programs among the surveyed individuals, highlighting the significance of such programs in supporting entrepreneurs.

Figure 3: Years the business has been operating.

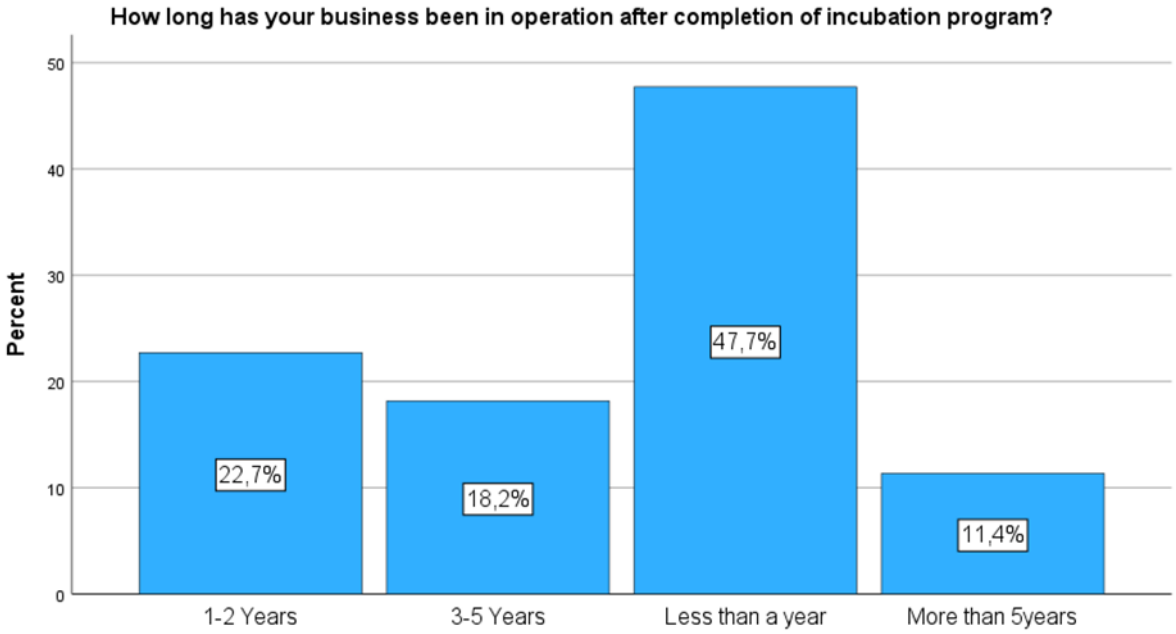


Figure 3 illustrates the duration of time that participants' businesses have been in operation after completing an incubation program. The data shows that 47.7% of respondents have been in operation for less than a year, while 22.7% have been operating for 1-2 years. Additionally, 18.2% reported being in operation for 3-5 years, and 11.4% indicated that their businesses have been operational for more than 5 years. This distribution provides insights into the post-incubation phase, indicating that a sizeable portion of businesses are new, while others have been established for longer periods.

4.2.3 Summary Statistics

The following section presents the summary statistics for the SME dynamic capabilities, innovation capabilities, and incubator support construct, which include the mean, standard deviation, and sample size (N) for each item.

Table 6: SME Dynamic Capabilities

Item Statistics			
	Mean	Std. Deviation	N
SME closely monitors market trends and developments?	3,72	,854	43
SME recognizes emerging market opportunities quickly?	3,74	1,026	43
Effective customer feedback collection and analysis is conducted by the SME?	3,60	1,072	43
When market conditions change the SME adapts proactively?	3,42	1,096	43
New identified market opportunities can be quickly taken advantage of by SME?	3,84	1,067	43
New initiatives and strategies are successfully put into practice by the SME?	3,67	1,085	43
Resources are effectively allocated to seize growth opportunities	3,26	1,071	43
When market conditions change the SME adapts proactively	3,44	,959	43
When required, our SME efficiently restructures its operations and processes?	3,56	,983	43
Business always seeks out new approached to solving problems and allows for innovative solution?	4,14	,889	43
SME Culture promotes ongoing growth and learning?	4,12	1,051	43
Knowledge is effectively captured and disseminated within the SME?	3,88	1,005	43
SME applies learnings and knowledge gained from experience	4,26	,875	43

Table 6 displays the item statistics for the SME Dynamic capabilities construct, presenting the mean, standard deviation, and sample size (N) for each item:

- **SME closely monitors market trends and developments**: The respondents reported a mean score of 3.72 with a standard deviation of 0.854, indicating a moderate level of agreement on average among the participants regarding this aspect. The sample size for this item is 43.

- **SME recognizes emerging market opportunities quickly:** The mean score is 3.74, and the standard deviation is 1.026, suggesting a slightly higher variability in responses compared to the previous item. Again, the sample size is 43.

- **Effective customer feedback collection and analysis is conducted by the SME**: The mean is 3.60, and the standard deviation is 1.072, indicating a moderate level of agreement among respondents regarding this statement.

- **When market conditions change, the SME adapts proactively**. The mean score is 3.42, with a higher standard deviation of 1.096, suggesting greater variability in responses and potentially less agreement among participants on this aspect.

- **New identified market opportunities can be quickly taken advantage of by SME**: The mean score is 3.84, and the standard deviation is 1.067, indicating a prominent level of agreement among respondents regarding this statement.
- **New initiatives and strategies are successfully put into practice by the SME:** The mean score is 3.67, and the standard deviation is 1.085, indicating moderate agreement among participants on this aspect.

- **Resources are effectively allocated to seize growth opportunities**: The mean score is 3.26, and the standard deviation is 1.071, indicating a relatively lower level of agreement among respondents regarding this statement.

- **When market conditions change, the SME adapts proactively:** The mean score is 3.44, and the standard deviation is 0.959, indicating moderate agreement among participants on this aspect.

- **When required, our SME efficiently restructures its operations and processes:** The mean score is 3.56, and the standard deviation is 0.983, suggesting moderate agreement among participants regarding this statement.

- **Business always seeks out innovative approaches to solving problems and allows for innovative solutions:** The mean score is 4.14, and the standard deviation is 0.889, indicating a prominent level of agreement among respondents regarding this statement.

- **SME Culture promotes ongoing growth and learning**: The mean score is 4.12, and the standard deviation is 1.051, showing a moderate level of agreement among participants regarding this aspect.

- **Knowledge is effectively captured and disseminated within the SME**: The mean score is 3.88, and the standard deviation is 1.005, indicating a moderate level of agreement among respondents regarding this statement.
- **SME applies learnings and knowledge gained from experience**: The mean score is 4.26, and the standard deviation is 0.875, indicating an elevated level of agreement among participants regarding this aspect.

These statistics provide insights into the respondents' perceptions of various dimensions of SME Dynamic capabilities, highlighting areas of consensus and areas where opinions may vary.

Table 7: Innovation capabilities

Item Statistics			
	Mean	Std. Deviation	N
Innovation is a key driver for the success of your SME?	4,41	,897	43
The introduction of new goods or services enhanced the effectiveness of your business?	4,20	,878	43
Innovation has helped the business to gain a competitive advantage against competitors?	4,07	1,021	43
Innovation is considered a strategic priority for the long-term sustainability for the SME?	4,20	1,047	43

Table 7 presents the item statistics for the innovation capabilities construct, including the mean, standard deviation, and sample size (N) for each item:

- **Innovation is a key driver for the success of your SME**: The respondents reported a mean score of 4.41 with a standard deviation of 0.897, indicating an elevated level of agreement among participants that innovation plays a crucial role in the success of their SME. The sample size for this item is 43.

- **The introduction of new goods or services enhanced the effectiveness of your business:** The mean score is 4.20, and the standard deviation is 0.878, suggesting an elevated level of agreement among respondents that introducing new goods or services has improved the effectiveness of their business.

- **Innovation has helped the business gain a competitive advantage against competitors**: The mean score is 4.07, with a standard deviation of 1.021, indicating a moderate level of agreement among participants that

innovation has contributed to gaining a competitive advantage against competitors.

- **Innovation is considered a strategic priority for the long-term sustainability of the SME:** The mean score is 4.20, and the standard deviation is 1.047, suggesting a moderate level of agreement among respondents that innovation is a strategic priority for the long-term sustainability of their SME.

These item statistics provide insights into the perceptions of respondents regarding various aspects of innovation capabilities within their SMEs, highlighting the perceived importance of innovation for success, effectiveness, competitiveness, and long-term sustainability.

Table 8: Incubator support

Item Statistics			
	Mean	Std. Deviation	N
Training from the incubator program improved the abilities and skills required for SME performance.	4,27	1,149	43
The access to networks and resources that enabled SME performance was significantly facilitated by the incubator?	3,77	1,138	43
The networking opportunities and teamwork provided by the incubator have improved SME's capacity to establish strategic alliances and partnerships.	4,02	1,067	43

Table 8 displays the item statistics for the incubator support construct, presenting the mean, standard deviation, and sample size (N) for each item:

- **Training from the incubator program improved the abilities and skills required for SME performance:** The respondents reported a mean score of 4.27, with a standard deviation of 1.149. This suggests an elevated level of agreement among participants that training received from the incubator program has enhanced the abilities and skills necessary for SME performance. The sample size for this item is 43.

- **The access to networks and resources that enabled SME performance was significantly facilitated by the incubator:** The mean score is 3.77, and the standard deviation is 1.138. This indicates a moderate level of agreement among respondents that the access to networks and resources provided by the incubator has significantly facilitated SME performance.

- **The networking opportunities and teamwork provided by the incubator have improved SME's capacity to establish strategic alliances and partnerships**: The mean score is 4.02, with a standard deviation of 1.067. This suggests a moderate to elevated level of agreement among participants that networking opportunities and teamwork facilitated by the incubator have enhanced the SME's capacity to establish strategic alliances and partnerships.

These item statistics shed light on the perceived effectiveness of the incubator program in providing support to SMEs, particularly in terms of training, access to networks and resources, and opportunities for networking and collaboration.

The constructs evaluated in this study include SME capabilities, innovation capabilities, and incubator support.

- **SME Dynamic Capabilities**: This construct assesses various aspects of SME performance in line with their sensing, seizing, transforming, and learning capabilities. The items within this construct focus on monitoring market trends, as well as recognizing opportunities, adapting to changing market conditions, efficiently utilizing resources, fostering a culture of innovation and learning,

and applying knowledge gained from past experiences. The item statistics reveal that respondents perceive their SMEs to possess strong capabilities in these areas, with mean scores ranging from 3.26 to 4.26 on a scale of 1 to 5.

- **Innovation Capabilities**: This construct measures the extent to which innovation drives the success and competitiveness of SMEs. Items in this construct gauge the importance of innovation, its impact on introducing new goods or services, its role in gaining a competitive advantage, and its strategic priority for long-term sustainability. Overall, respondents express an elevated level of agreement regarding the significance of innovation for SME success, with mean scores ranging from 4.07 to 4.41.

- **Incubator Support**: This construct evaluates the effectiveness of support provided by business incubators to SMEs. Items within this construct focus on the perceived benefits of training programs, access to networks and resources, and opportunities for networking and collaboration facilitated by the incubator. The item statistics indicate that respondents generally perceive the support received from the incubator positively, with mean scores ranging from 3.77 to 4.27.

These constructs provide valuable insights into the capabilities of SMEs, their innovation strategies, and the impact of incubator support on their development and success.

4.3 Inferential Statistics

The study will present the factor, correlation, and regression analysis results in this section, along with an introduction to the mediator and moderator.

4.3.1 Factor Analysis

The following tables (9-13) and figure 4 below present the factor analysis results.

Table 9: Factor Analysis: KMO and Bartlett's Test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,715
Bartlett's Test of Sphericity	Approx. Chi-Square	640,523
	df	190
	Sig.	<,001

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is a value that indicates the suitability of the data for factor analysis. In this case, the KMO value is 0.715, which is good. This suggests that the data is suitable for factor analysis. The Bartlett's Test of Sphericity is a statistical test that assesses whether the correlation matrix is an identity matrix. The results show that the approximate Chi-Square value is 640,523, which is significant at a level of less than 0.001 (Sig. < 0.001). The degree of freedom (df) is 190. This means that the correlation matrix is not an identity matrix, which suggests that there are significant correlations between the variables. This is a good indication that factor analysis can be used to identify underlying patterns and structures in the data.

Overall, both tests show that the data is suitable for factor analysis and that we can exploit significant correlations between the variables to extract meaningful factors.

Table 10: Communalities identified through principal component analysis.

Communalities

	Initial	Extraction
SME closely monitors market trends and developments?	1,000	,708
SME recognizes emerging market opportunities quickly?	1,000	,819
Effective customer feedback collection and analysis is conducted by the SME?	1,000	,386
When market conditions change the SME adapts proactively?	1,000	,783
New identified market opportunities can be quickly taken advantage of by SME?	1,000	,565
New initiatives and strategies are successfully put into practice by the SME?	1,000	,520
Resources are effectively allocated to seize growth opportunities	1,000	,666
When market conditions change the SME adapts proactively;	1,000	,824
When required, our SME efficiently restructures its operations and processes?	1,000	,639
Business always seeks out new approached to solving problems and allows for innovative solution?	1,000	,564
SME Culture promotes ongoing growth and learning?	1,000	,726
Knowledge is effectively captured and disseminated within the SME?	1,000	,778
SME applies learnings and knowledge gained from experience	1,000	,777
Innovation is a key driver for the success of your SME?	1,000	,727
The introduction of new goods or services enhanced the	1,000	,794

effectiveness of your business?		
Innovation has helped the business to gain a competitive advantage against competitors?	1,000	,731
Innovation is considered a strategic priority for the long-term sustainability for the SME?	1,000	,851
Training from the incubator program improved the abilities and skills required for SME performance.	1,000	,859
The access to networks and resources that enabled SME performance was significantly facilitated by the incubator?	1,000	,751
The networking opportunities and teamwork provided by the incubator have improved SME's capacity to establish strategic alliances and partnerships.	1,000	,791

Extraction Method: Principal Component Analysis.

The statistics reveal the communalities, or the proportion of variance in each variable, before and after extraction using principal component analysis (PCA). The initial communality values range from 386 to 1000, indicating that the variables are relatively uncorrelated and have varying degrees of importance in explaining the underlying structure of the data. After extraction, the communality values show a significant increase for most variables, with some reaching values above 80%. This suggests that the variables are closely related to the underlying factors identified by PCA and that the extracted factors capture a sizable proportion of the variance in the data. The variables with high communality values, such as "SME recognizes emerging market opportunities quickly" and "Innovation is considered a strategic priority for the long-term sustainability for the SME", indicate that these variables are strong contributors to the underlying patterns in the data.

Table 11: Total Variance Explained, Eigenvalues

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8,237	41,183	41,183	8,237	41,183	41,183
2	3,363	16,813	57,997	3,363	16,813	57,997
3	1,354	6,772	64,769	1,354	6,772	64,769
4	1,304	6,519	71,288	1,304	6,519	71,288
5	,983	4,915	76,203			
6	,889	4,446	80,649			
7	,671	3,354	84,003			
8	,530	2,651	86,654			
9	,480	2,401	89,055			
10	,443	2,213	91,269			
11	,370	1,851	93,119			
12	,305	1,526	94,645			
13	,270	1,348	95,993			
14	,190	,952	96,945			
15	,169	,843	97,788			
16	,149	,743	98,531			
17	,131	,657	99,188			
18	,076	,380	99,568			
19	,048	,240	99,808			
20	,038	,192	100,000			

Extraction Method: Principal Component Analysis.

The table shows the total variance explained by each component in the Principal Component Analysis (PCA) and the cumulative percentage of variance explained by each component.

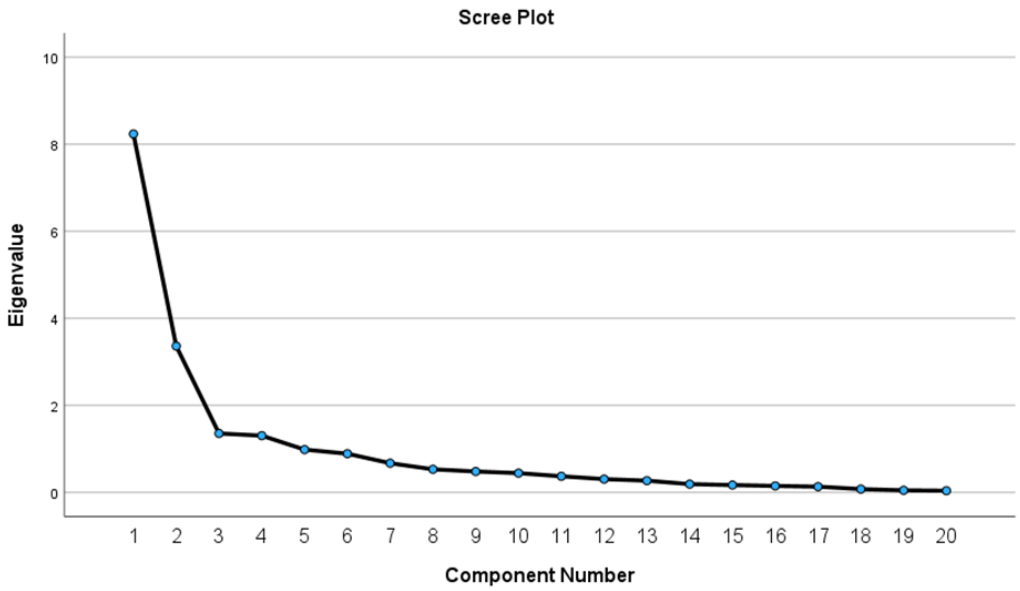
- The first component explains 41.183% of the total variance, which is a considerable proportion.
- Each component gradually increases the cumulative percentage of variance it explains, with the first four components accounting for 71.28% of the total variance.

- Most of the variance is explained by the first 4 components, with the remaining components explaining a smaller proportion of the variance.
- The last few components explain only a small proportion of the total variance, indicating that they may not be as important in capturing the underlying structure of the data.
- The total variance explained by all components is 100%, which is expected for a PCA analysis.

Overall, the results suggest that the PCA analysis has successfully identified a set of components that capture a considerable proportion of the variance in the data. The first few components are likely to be the most important in explaining the underlying patterns in the data, while the later components may be less important.

A critical tool in deciding how many factors to keep in a principal component analysis model is the scree plot, it clearly provides a visual depiction of the eigenvalues explained by each principal component in the factor analysis (Sanderson II, 2023).

Figure 4: Scree Plot



- The x-axis represents the factors, with the first on the left and the last on the right.
- The y-axis represents the eigenvalues, which are the values that describe the amount of variance in the data explained by each factor.
- The first few eigenvalues are large, indicating that the first few factors explain a significant amount of variance in the data.
- The eigenvalues start to decrease more rapidly around the 4th or 5th factor, indicating that these factors may not be as important in explaining the variance in the data.
- The remaining eigenvalues are small, indicating that these factors may be noise or artifacts rather than meaningful underlying patterns in the data.

Based on this scree plot, retaining around 4-5 factors would be ideal. This is because the eigenvalues are still relatively large and meaningful for these factors, and they explain a significant amount of variance in the data. Additionally, retaining fewer factors will help to avoid overinterpreting noise or artifacts in the data.

The component matrix is a crucial output from the Principal Component Analysis (PCA) that shows the component loadings for each variable.

Table 12: Component Matrix

Component Matrix

	Component			
	1	2	3	4
SME closely monitors market trends and developments?	,520	,491	,270	-,351
SME recognizes emerging market opportunities quickly?	,778	,235	,256	-,306
Effective customer feedback collection and analysis is conducted by the SME?	,280	,510	,219	,016
When market conditions change the SME adapts proactively?	,304	,734	,312	,233
New identified market opportunities can be quickly taken advantage of by SME?	,681	,176	-,210	-,160
New initiatives and strategies are successfully put into practice by the SME?	,302	,619	-,141	,160
Resources are effectively allocated to seize growth opportunities	,724	,071	,133	,344
When market conditions change the SME adapts proactively>	,322	,844	,021	,084
When required, our SME efficiently restructures its operations and processes?	,493	,559	-,202	,207
Business always seeks out new approached to solving problems and allows for innovative solution?	,592	,176	-,427	-,001
SME Culture promotes ongoing growth and learning?	,756	-,088	-,380	,038

Knowledge is effectively captured and disseminated within the SME?	,771	-,090	-,390	,153
SME applies learnings and knowledge gained from experience	,746	-,162	-,398	-,191
Innovation is a key driver for the success of your SME?	,739	-,215	-,057	-,362
The introduction of new goods or services enhanced the effectiveness of your business?	,828	-,246	,035	-,214
Innovation has helped the business to gain a competitive advantage against competitors?	,759	-,175	,296	-,192
Innovation is considered a strategic priority for the long-term sustainability for the SME?	,741	-,345	,358	-,233
Training from the incubator program improved the abilities and skills required for SME performance.	,727	-,441	,185	,320
The access to networks and resources that enabled SME performance was significantly facilitated by the incubator?	,637	-,338	,158	,453
The networking opportunities and teamwork provided by the incubator have improved SME's capacity to establish strategic alliances and partnerships.	,631	-,429	,176	,421

Extraction Method: Principal Component Analysis – 4 Components Extracted

- **Component 1**

The first component (Component 1) appears to be related to the SME's ability to adapt to changing market conditions, recognize emerging opportunities, and innovate. It is loaded positively on variables such as "SME closely monitors market trends and developments", "SME recognizes emerging market opportunities quickly", "When market conditions change the SME adapts proactively", and "New identified market opportunities can be quickly taken advantage of by SME". "Innovation is a key driver for the success of your SME?" has a high loading on Component 1 (0.739), which suggests that this variable is closely related to the SME's ability to adapt to changing market conditions, recognize emerging opportunities, and innovate. "When market conditions change, the SME adapts proactively" has a moderate loading on Component 1 (0.304), which suggests that this variable is somewhat related to the SME's ability to identify and capitalize on new growth opportunities, and to manage its resources efficiently to achieve its goals.

- **Component 2**

The second component (Component 2) seems to be related to the SME's ability to collect and analyze customer feedback, allocate resources effectively, and put new initiatives into practice. It's loaded positively on variables such as "Effective customer feedback collection and analysis are conducted by the SME", "Resources are effectively allocated to seize growth opportunities", "When required, our SME efficiently restructures its operations and processes", and "New initiatives and strategies are successfully put into practice by the SME".

- **Component 3**

The third component (Component 3) appears to be related to the SME's ability to capture and disseminate knowledge, apply learnings from past experiences, and consider innovation as a strategic priority. It's loaded positively on variables such as "Knowledge is effectively captured and disseminated within the SME", "SME applies learnings and knowledge gained from past experience", "Innovation is

considered a strategic priority for the long-term sustainability for the SME", and "Innovation has helped the business to gain a competitive advantage against competitors". "The introduction of new goods or services enhanced the effectiveness of your business?" has a high loading on Component 3 (0.828), which suggests that this variable is closely related to the SME's ability to capture and disseminate knowledge, apply learnings from past experiences, and consider innovation as a strategic priority. Business always seeks out new approaches to solving problems and allows for innovative solutions?" has a high loading on Component 3 (0.592), which suggests that this variable is closely related to the SME's ability to capture and disseminate knowledge, apply learnings from past experiences, and consider innovation as a strategic priority.

- **Component 4**

The fourth component (Component 4) seems to be related to the SME's ability to access networks and resources, establish strategic alliances, and improve its capacity through training and networking opportunities. It's loaded positively on variables such as "The access to networks and resources that enabled SME performance was significantly facilitated by the incubator", "The networking opportunities and teamwork provided by the incubator have improved SME's capacity to establish strategic alliances and partnerships", and "Training from the incubator program improved the abilities and skills required for SME performance". SME Culture promotes ongoing growth and learning?" has a high loading on Component 4 (0.756), which suggests that this variable is closely related to the SME's ability to access networks and resources, establish strategic alliances, and improve its capacity through training and networking opportunities.

Overall, these components capture distinct aspects of the SME's performance, such as its ability to adapt to changing market conditions, manage resources effectively, capture knowledge, innovate, and access networks and resources. Constructs from the conceptual framework will continue to serve as the foundation for data analysis since the PCA Model's components contain the constructs from the conceptual framework.

Table 13: Constructs identified in each component in the PCA Model:

Component	Construct
Component 1	SME Sensing Capabilities
	SME Transforming Capabilities
	Innovation Capabilities
Component 2	SME Sensing Capabilities
	SME Sizing Capabilities
	SME Transforming Capabilities
Component 3	SME Learning Capabilities
	Innovation Capabilities
Component 4	Incubator Support

4.3.2 *Correlation Analysis*

Table 14: Pearson's correlation

Correlations					
		SME Capabilities	Innovation Capabilities	Incubator Support	Performance
SME Capabilities	Pearson Correlation	1	,527**	,387*	,482**
	Sig. (2-tailed)		<,001	,010	,001
	N	43	43	43	43
Innovation Capabilities	Pearson Correlation	,527**	1	,653**	,456**
	Sig. (2-tailed)	<,001		<,001	,002
	N	43	43	43	43
Incubator Support	Pearson Correlation	,387*	,653**	1	,207
	Sig. (2-tailed)	,010	<,001		,177
	N	43	43	43	43
SME Performance	Pearson Correlation	,482**	,456**	,207	1
	Sig. (2-tailed)	,001	,002	,177	
	N	43	43	43	43
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					

Table 14 presents correlations among SME dynamic capabilities, innovation capabilities, incubator support, and performance within a sample of enterprises.

The findings reveal significant positive correlations between SME dynamic capabilities and both innovation capabilities ($r = 0.527$, $p < 0.01$) and performance ($r = 0.482$, $p < 0.01$). In the same way, innovation skills are strongly linked to both the dynamic capabilities ($r = 0.527$, $p < 0.01$) and performance ($r = 0.456$, $p < 0.01$) of small businesses). Notably, incubator support demonstrates a strong positive correlation with innovation capabilities ($r = 0.653$, $p < 0.01$) but only a weak and non-significant association with performance ($r = 0.207$, $p > 0.05$). These findings suggest the importance of both SME and innovation capabilities for enhancing enterprise performance, with innovation capabilities further bolstered by supportive incubator environments. However, further investigation is warranted to understand the nuanced relationship between incubator support and performance.

Table 15: Pearsons Correlation – Items of SME Dynamic Capabilities Construct versus SME Performance

Correlations

		Sensing capabilities	Seizing capabilities	Transforming capabilities	Learning capabilities	SME Performance	Innovation Capabilities
Sensing capabilities	Pearson Correlation	1	,623**	,562**	,387**	,382*	,483**
	Sig. (2-tailed)		<,001	<,001	,009	,011	<,001
	N	43	43	43	43	43	43
Seizing capabilities	Pearson Correlation	,623**	1	,681**	,382*	,342*	,288
	Sig. (2-tailed)	<,001		<,001	,010	,023	,058
	N	43	43	43	43	43	43
Transforming capabilities	Pearson Correlation	,562**	,681**	1	,475**	,415**	,262
	Sig. (2-tailed)	<,001	<,001		,001	,006	,090
	N	43	43	43	43	43	43
Learning capabilities	Pearson Correlation	,387**	,382*	,475**	1	,629**	,672**
	Sig. (2-tailed)	,009	,010	,001		<,001	<,001
	N	43	43	43	43	43	43
SME Performance	Pearson Correlation	,382*	,342*	,415**	,629**	1	,456**
	Sig. (2-tailed)	,011	,023	,006	<,001		,002
	N	43	43	43	43	43	43
Innovation Capabilities	Pearson Correlation	,483**	,288	,262	,672**	,456**	1
	Sig. (2-tailed)	<,001	,058	,090	<,001	,002	
	N	43	43	43	43	43	43

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The correlation analysis reveals significant relationships between SME performance and various capabilities, highlighting their importance in driving

performance outcomes. The results in line with the hypotheses identified in this study are as follows:

H1a: SME sensing capabilities are significantly related to ongoing SME Performance.

Sensing capabilities exhibit a moderate positive correlation with SME performance ($r = 0.382$, $p = 0.011$). These findings suggest that SMEs that can identify market trends, address customer needs, and are adept with technological advancements tend to have higher performance levels.

H1b: SME seizing capabilities are significantly related to ongoing SME performance.

Seizing capabilities also demonstrate a moderate positive correlation with SME performance ($r = 0.342$, $p = 0.023$), suggesting that firms that quickly and effectively take advantage of identified opportunities tend to perform better.

H1c: SME transforming capabilities are significantly related to ongoing SME performance.

Transforming capabilities show a stronger positive correlation with SME performance ($r = 0.415$, $p = 0.006$), indicating that flexibility and adaptability in operations and processes play a significant role in enhancing performance

H1d: SME learning capabilities are significantly related to ongoing SME performance.

Learning capabilities exhibit the strongest positive correlation with SME performance ($r = 0.629$, $p < 0.001$), highlighting the critical role of continuous learning and innovation in driving performance outcomes.

H2a: SME sensing capabilities are significantly related to innovation.

Sensing capabilities have a moderately positive relationship with innovation (Pearson r=0.483**, p<0.001). There is statistical significance in this relationship.

This suggests that one of the main forces behind innovation is the ability to recognize new opportunities and trends.

H2b: SME Seizing capabilities are significantly related to innovation.

Seizing capabilities have a weak positive correlation with innovation (Pearson r = 0.288, p = 0.058). This implies that an increase in SME seizing capabilities leads to a corresponding increase in innovation, although the relationship is not robust. The relationship is not statistically significant. This could suggest that, even though seizing opportunities is crucial for performance, innovation is not necessarily facilitated by them.

H2c: SME transformation capabilities are significantly related to innovation.

Transformation capabilities have a moderate positive correlation with innovation (Pearson r = 0.415**, p = 0.006), this relationship is statistically significant. This provides compelling evidence that better transforming capabilities in SMEs are associated with higher levels of innovation.

H2d: SME learning capabilities are significantly related to innovation.

Learning capabilities have a strong positive correlation with innovation capabilities (Pearson r = 0.672**, p < 0.001). The relationship is statistically significant. Suggesting that fostering an innovative environment with SMEs requires ongoing learning and adaptation.

H3: Innovation is significantly related to SME performance.

Innovation has a moderate positive correlation with SME performance (Pearson r-0.456**, p<0.002). This relationship is statistically significant, and this means that as innovation capabilities increase, SME performance also tends to increase. This suggests that SMEs that innovate are more likely to achieve an elevated level of performance.

Overall, the results suggest that:

- SME sensing capabilities are significantly related to both SME performance and innovation.
- SME seizing capabilities are significantly related to SME performance but not innovation.
- SME Transformation capabilities are significantly related to SME Performance and Innovation
- SME learning capabilities are significantly related to SME performance and innovation.
- Innovation is significantly related to SME performance.

4.3.3 Regression Analysis

Table 16: Model 1

Variables Entered/Removed[a]			
Model	Variables Entered	Variables Removed	Method
1	SME Capabilities[b]	.	Enter
a. Dependent Variable: SME Performance			
b. All requested variables entered.			

The "Variables Entered/Removed" table for Model 1 shows that only SME Dynamic Capabilities were included in the regression analysis, with no variables removed during the process. The method used for variable selection was "Enter," indicating that SME Dynamic Capabilities were directly included in the model without any exclusion criteria. This analysis examined SME performance as the dependent variable. This demonstrates that only SME Dynamic Capabilities were considered as predictors in the regression model, with no other variables included or removed.

Table 17: Model summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,482[a]	,233	,214	,447
a. Predictors: (Constant), SME Capabilities				

In the model summary (Model 1), the correlation coefficient (R) is 0.482, indicating a moderately positive relationship between SME Dynamic Capabilities and the dependent variable. The coefficient of determination (R Square) is 0.233, suggesting that approximately 23.3% of the variance in the dependent variable (SME Performance) is explained by SME dynamic capabilities. The adjusted R square, which considers the number of predictors in the model, is 0.214. The standard error of the estimate is 0.447, reflecting the average distance between the observed values and the predicted values by the model. The summary shows that SME dynamic capabilities explain a big part of the variation in the dependent variable. However, there may be other factors affecting SME performance that the model does not consider.

Table 18: ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2,489	1	2,489	12,430	,001[b]
	Residual	8,209	41	,200		
	Total	10,698	42			
a. Dependent Variable: SME Performance						
b. Predictors: (Constant), SME Capabilities						

The ANOVA table for Model 1 indicates that the regression model, which includes SME capabilities as a predictor, significantly predicts SME performance. The significant F-value (F = 12.430, p = 0.001) shows that the regression model

explains a large part of the variation in SME performance. Specifically, the regression sum of squares is 2.489, suggesting that the model explains a substantial amount of the variability in SME performance. The residual sum of squares is 8.209, indicating the unexplained variability remaining after accounting for SME dynamic capabilities. These findings underscore the importance of SME dynamic capabilities in understanding and predicting SME performance. Further research may explore additional factors that could enhance the predictive power of the model or investigate the specific mechanisms through which SME Dynamic Capabilities influence performance.

Step 1: Regress Y (Dependent variable – SME Performance) on X (Independent variable = SME Dynamic Capabilities): Use the regression procedure in SPSS to regress Y on X.

Table 19: Step 1: Regress Y (Dependent variable – SME Performance) on X (Independent variable = SME Dynamic Capabilities): Regression coefficients

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,103	,392		,261	,795
	SME Capabilities	,368	,104	,482	3,526	,001
a. Dependent Variable: SME Performance						

The coefficients table for Model 1 reveals that SME Dynamic Capabilities significantly predict SME Performance. Specifically, the unstandardized coefficient (B) for SME Dynamic Capabilities is 0.368 (p = 0.001), indicating that for every one-unit increase in SME Dynamic Capabilities, SME Performance is estimated to increase by 0.368 units. The standardized coefficient (Beta) of 0.482

further underscores this relationship, suggesting a moderately strong positive effect of SME Dynamic Capabilities on SME Performance after adjusting for the scale of measurement. These findings emphasize the pivotal role of SME dynamic capabilities in driving performance outcomes within small and medium-sized enterprises.

4.3.3.1 Introducing the Mediator

The Baron and Kenny method was used to test the mediator "Innovation Capabilities" identified in the conceptual framework of the study. This approach uses statistics to examine if a mediator variable can explain the relationship between an independent variable X and a dependent variable Y (Baron & Kenny, 1986). Stated differently, does the mediator clarify how X and Y are related?

The following requirements must be satisfied for the results to support mediation:

- In the first regression equation, it is demonstrated that the independent variable has a significant impact on the dependent variable.
- The second regression equation demonstrates that the independent variable has a significant impact on the mediator.
- In the third equation, the mediator and independent variable are entered as predictors, and the mediator must have a significant impact on the dependent variable.

When each of the requirements are satisfied and the mediator has been controlled, complete mediation occurs when the independent variable has no further effect on the dependent variable (Baron & Kenny, 1986).

Step 2: Regress M (Mediator – Innovation capabilities) on X (Independent – SME Dynamic Capabilities): Use the regression procedure to regress M on X.

Table 20: Step 2 Introducing mediator using Baron & Kenny Method - Regress M (Mediator – Innovation capabilities) on X (Independent – SME Dynamic Capabilities):

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1,706	,643		2,655	,011
	SME Capabilities	,678	,171	,527	3,966	<,001

a. Dependent Variable: Innovation Capabilities

- The constant coefficient is 1.706, which is the estimated value of innovation capabilities when SME dynamic capabilities are equal to zero.
- The SME Capabilities coefficient is 0.678, which indicates that a one-unit increase in SME Capabilities is associated with an increase of 0.678 units in innovation capabilities.
- The Standardized Coefficient (Beta) for SME Dynamic Capabilities is 0.527, which indicates that SME Capabilities has a moderate positive effect on Innovation Capabilities.
- The t-statistic for SME Dynamic Capabilities is 3.966, which indicates that the coefficient is statistically significant ($p < 0.001$).
- The significance level ($p < 0.001$) indicates that it is highly unlikely that the observed results are due to chance.

Step 3: Regress Y (Dependent – SME Performance) on X (Independent – SME Dynamic Capabilities) and M (Mediator = Innovation Capability): Use the regression procedure to regress Y on both X and M.

Table 21: Step 3 Running Y (Dependent – SME Performance) on X (Independent – SME Dynamic Capabilities) and M (Mediator = Innovation Capability)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
With mediator	(Constant)	-,178	,414		-,429	,670
	SME Dynamic Capabilities	,257	,120	,336	2,144	,038
	Innovation Capabilities	,164	,093	,277	1,766	,085

a. Dependent Variable: SME Performance

Given that innovation capabilities are a mediator, the coefficients in the table can be interpreted in the following way:

- The constant coefficient is -0.178, which is the estimated value of SME performance when SME dynamic capabilities and innovation capabilities are equal to zero.
- The SME Dynamic Capabilities coefficient is 0.257, which means that to get 0.257 units more innovation capabilities, you need to increase SME Dynamic Capabilities by one unit.
- The innovation capabilities coefficient of 0.164 means that for every one unit increase in innovation capabilities, there is a 0.164 unit increase in SME performance.

In conclusion, SME Dynamic capabilities have a direct effect on SME performance. Although innovation capabilities appear to be a mediator between performance and SME dynamic capabilities, the mediation does not make the relation between performance and SME dynamic capabilities stronger. The correlation between SME Performance and SME Dynamic Capabilities was found

to be 0.368, with a p-value of 0.05. However, when innovation was introduced as a mediator, this correlation decreased to 0.257, with a p-value of 0.038.

Following the conclusion that innovation does not function as a mediator between SME dynamic capabilities and SME performance, additional analysis was conducted to examine the potential mediation effects of the other innovation-related items when examined separately.

Table 22: Introducing a mediator items: introduction of new goods or services enhanced the effectiveness of the business (Which is innovation capability that is statistically significant)

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	-,200	,401		-,498	,621
	SME Capabilities	,232	,118	,304	1,963	,057
	The introduction of new goods or services enhanced the effectiveness of your business?	,193	,089	,336	2,173	,036
a. Dependent Variable: SME Performance						

In Table 22, introduces a mediator variable, "The introduction of new goods or services enhanced the effectiveness of your business," which represents innovation capability. The coefficients table shows the unstandardized and standardized coefficients for the predictor variables: SME capabilities and the introduction of new goods or services.

Constant: The constant term represents the estimated value of SME performance when all predictor variables are zero. In this case, the constant is -

0.200 with a standard error of 0.401. The t-value is -0.498, and the p-value is 0.621, indicating that the constant is not statistically significant.

SME Capabilities: The unstandardized coefficient (B) for SME Capabilities is 0.232 (p = 0.057), suggesting that a one-unit increase in SME Capabilities is associated with a 0.232 unit increase in SME Performance. The standardized coefficient (Beta) of 0.304 indicates a moderately positive effect of SME capabilities on SME performance, but this coefficient is marginally statistically significant.

The introduction of new goods or services: The unstandardized coefficient for the introduction of new goods or services is 0.193 (p = 0.036). This suggests that the introduction of new goods or services enhances SME performance, with each one-unit increase associated with a 0.193 unit increase in SME performance. The standardized coefficient (Beta) of 0.336 indicates a moderately strong positive effect on SME performance, and this coefficient is statistically significant.

Overall, these results suggest that both SME capabilities and the introduction of new goods or services have positive effects on SME performance. However, while SME capabilities show a marginally significant effect, the introduction of new goods or services emerges as a statistically significant predictor of SME performance. This indicates that innovation capability significantly influences SME performance, supporting the importance of innovation in enhancing business effectiveness.

In Table 23, Model 3 introduces a new mediator variable, "Innovation is a key driver for the success of your SME." The coefficients table presents the unstandardized and standardized coefficients for the predictor variables: SME capabilities and the new mediator variable.

Table 23: Model 3- Adding a mediator "Innovation is a key driver for the success of the SME.

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	-,265	,412		-,643	,524
	SME Capabilities	,255	,113	,334	2,261	,029
	Innovation is a key driver for the success of your SME?	,179	,083	,320	2,166	,036
a. Dependent Variable: SME Performance						

Constant: The constant term represents the estimated value of SME performance when all predictor variables are zero. In this case, the constant is -0.265 with a standard error of 0.412. The t-value is -0.643, and the p-value is 0.524, indicating that the constant is not statistically significant.

SME Capabilities: The unstandardized coefficient (B) for SME Capabilities is 0.255 (p = 0.029), suggesting that a one-unit increase in SME Capabilities is associated with a 0.255 unit increase in SME Performance. The standardized coefficient (Beta) of 0.334 indicates a moderately positive effect of SME capabilities on SME performance, and this coefficient is statistically significant.

Innovation is a key driver for the success of your SME. The unstandardized coefficient for the new mediator variable is 0.179 (p = 0.036). This suggests that the perception of innovation as a key driver for SME success positively influences

SME performance, with each one-unit increase associated with a 0.179 unit increase in SME performance. The standardized coefficient (Beta) of 0.320 indicates a moderately positive effect on SME performance, and this coefficient is statistically significant.

Overall, these results indicate that both SME capabilities and the perception of innovation as a key driver for SME success have positive effects on SME performance. Both predictors are statistically significant, underscoring their importance in driving SME performance. This highlights the critical role of both capabilities and innovation perception in contributing to the success of SMEs.

The introduction of the mediator variable "Innovation is a key driver for the success of your SME" in the regression model suggests that the perception of innovation's importance influences SME Performance. This mediator variable captures how much emphasis SMEs place on innovation as a factor contributing to their success.

When SMEs perceive innovation as a key driver for their success, it likely leads to a strategic focus on innovation-related activities such as developing new products or services, adopting new technologies, or implementing innovative business processes. This strategic emphasis on innovation can result in several positive outcomes for SME performance.

The items of the construct "Innovation Capabilities" in Tables 22 and 23 demonstrated a level of significance and mediation on SME dynamic capabilities individually. Nevertheless, the coefficient of SME dynamic capabilities (0.368) found in step 1 is still higher than the coefficient following the addition of the construct's items. Thus, without the aid of a mediator, SME Dynamic Capabilities can independently predict SME performance.

Using the Baron and Kennedy Method, we further tested the mediating relationship with the individual items that make up the SME dynamic capabilities construct.

H4a: The relationship between SME sensing capabilities and SME performance is mediated by innovation.

Step 1: Regress Y (Dependent variable – SME Performance) on X (Independent variable = Sensing Capabilities)

Table 24: Regress Y (Dependent variable – SME Performance) on X (Independent variable = Sensing Capabilities):

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	,571	,346		1,649	,107
	Sensing_capabilities	,245	,091	,382	2,677	,011

a. Dependent Variable: SME Performance

- The intercept (constant) is estimated to be 0.571, which means that when sensing capabilities are 0, SME performance is expected to be 0.571.
- The coefficient for sensing capabilities is estimated to be 0.245, which means that for every one-unit increase in sensing capabilities, SME performance is expected to increase by 0.245, while holding all other variables constant.
- The standardized coefficient for sensing capabilities is 0.382, indicating a change in SME performance of approximately 0.382 standard deviations for every unit change in sensing capabilities.
- The t-statistic for sensing abilities is 2.677, which is significant at a level of 0.011 (< 0.05), which means that there is a statistically significant link between sensing abilities and SME performance.
- The p-value for sensing capabilities is 0.011, which means that there is a less than 1% chance that the observed relationship between sensing capabilities and SME performance is due to chance.

Overall, this input suggests that sensing capabilities have a statistically significant positive effect on SME performance and that an increase in sensing capabilities is associated with an increase in SME performance.

Step 2: Regress M (Mediator – Innovation capabilities) on X (Independent – Sensing Capabilities): Use the regression procedure to regress M on X.

Table 25: Step 2 Introducing mediator using Baron & Kenny Method - Regress M (Mediator – Innovation capabilities) on X (Independent – Sensing Capabilities)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2,308	,547		4,222	<,001
	Sensing_capabilities	,516	,144	,483	3,576	<,001

a. Dependent Variable: Innovation Capabilities

- The intercept (constant) is estimated to be 2.308, which means that when sensing capabilities are 0, innovation capabilities are expected to be 2.308.
- The coefficient for sensing capabilities is estimated to be 0.516, which means that for every one-unit increase in sensing capabilities, innovation capabilities are expected to increase by 0.516, while holding all other variables constant.
- The standardized coefficient for sensing capabilities is 0.483, indicating an approximate 0.483 standard deviation change in innovation capabilities for every unit change in sensing capabilities.
- The t-statistic for Sensing capabilities is 3.576, which is significant at a level of <0.001 (< 0.05), indicating that the relationship between Sensing capabilities and Innovation Capabilities is statistically significant.
- The p-value for sensing capabilities is <0.001, which means that there is very strong evidence that the observed relationship between sensing capabilities and innovation capabilities is not due to chance.

More generally, this result shows that sensing abilities have a statistically significant positive impact on innovation abilities and that higher sensing abilities are linked to higher innovation abilities.

Step 3: Regress Y (Dependent – SME Performance) on X (Independent – Sensing Capabilities) and M (Mediator = Innovation Capability): Use the regression procedure to regress Y on both X and M.

Table 26: Step 3 Running Y (Dependent – SME Performance) on X (Independent – Sensing Capabilities) and M (Mediator = Innovation Capability)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
With mediator	(Constant)	,080	,394		,204	,839
	Sensing_capabilities	,135	,100	,211	1,356	,182
	Innovation Capabilities	,212	,093	,354	2,280	,028

a. Dependent Variable: SME Performance

- Constant: The constant term is not significant (p = 0.839), indicating that the model does not have a significant intercept.
- Sensing abilities: The coefficient for Sensing abilities is 0.135 (p = 0.182), which means that a change of one unit in Sensing abilities is linked to a change of 0.135 units in SME performance. However, the effect is not statistically significant.
- Innovation Capabilities: The innovation capabilities coefficient is 0.212 (p = 0.028), which means that a change of one unit in innovation capabilities is linked to a change of 0.212 units in SME performance. The effect is statistically significant.

Mediation Analysis

- **Innovation Capabilities**: The coefficient for innovation capabilities is 0.212 (p = 0.028), indicating that a one-unit change in innovation capabilities is associated with a 0.212-unit change in SME performance.
- **Indirect Effect:** The indirect effect of sensing capabilities on SME performance through innovation capabilities is estimated using the product of the coefficients: 0.135 (Sensing capabilities) x 0.212 (Innovation Capabilities) = 0.0286.
- **Direct Effect**: The direct effect of sensing capabilities on SME performance, controlling for innovation capabilities, is estimated by subtracting the indirect effect from the total effect: 0.135 - 0.0286 = 0.1064. The direct effect is not statistically significant (p = 0.233).

Mediation Analysis Results

The results suggest that innovation capabilities mediate the relationship between sensing capabilities and SME performance. The indirect effect, statistically significant at p = 0.012, suggests that the influence of sensing capabilities on innovation capabilities partially explains the relationship between sensing capabilities and SME performance. The mediation effect largely explains the relationship between sensing capabilities and SME performance, as the direct effect is not statistically significant.

he results of the mediation analysis strongly support the idea that innovation skills act as a go-between for sensing skills and small business performance. The findings suggest that sensing capabilities influence SME performance indirectly by affecting innovation capabilities. The results have implications for SMEs, highlighting the importance of developing strong innovation capabilities to leverage the benefits of sensing.

H4b: The relationship between SME seizing capabilities and SME performance is mediated by innovation.

Step 1: Regress Y (Dependent variable – SME Performance) on X (Independent variable = Seizing Capabilities)

Table 27: Regress Y (Dependent variable – SME Performance) on X (Independent variable = Seizing Capabilities):

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
	(Constant)	,713	,332		2,146	,038
	Seizing_capabilities	,208	,088	,342	2,360	,023

a. Dependent Variable: SME Performance

The regression analysis demonstrates that the independent variable, seizing capabilities, significantly impacts SME performance. The unstandardized coefficient (B) for seizing capabilities is 0.208, indicating that for each unit increase in seizing capabilities, SME performance increases by 0.208 units. The standardized coefficient (Beta) is 0.342, reflecting a moderately positive relationship between seizing capabilities and SME performance. The p-value for seizing capabilities is 0.023, which is below the conventional significance threshold of 0.05, confirming that the relationship is statistically significant. This suggests that improvements in seizing capabilities are meaningfully associated with enhanced SME performance.

Step 2: Regress M (Mediator – Innovation capabilities) on X (Independent – Seizing Capabilities): Use the regression procedure to regress M on X.

Table 28: Step 2 Introducing mediator using Baron & Kenny Method - Regress M (Mediator – Innovation capabilities) on X (Independent – Seizing Capabilities)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3,147	,564		5,577	<,001
	Seizing capabilities	,292	,150	,288	1,951	,058

a. Dependent Variable: Innovation Capabilities

Seizing capabilities: The coefficient for seizing abilities is 0.292 (p = 0.058), which means that a change of one unit in seizing abilities is linked to a change of 0.292 units in innovation abilities. The effect is not statistically significant at the conventional level (p = 0.058), but it is close to being statistically significant.

Step 3: Regress Y (Dependent – SME Performance) on X (Independent – Seizing Capabilities) and M (Mediator = Innovation Capability): Use the regression procedure to regress Y on both X and M.

Table 29: Step 3 Running Y (Dependent – SME Performance) on X (Independent – Seizing Capabilities) and M (Mediator = Innovation Capability)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
With mediator	(Constant)	-,023	,407		-,056	,955
	Seizing capabilities	,140	,086	,230	1,634	,110
	Innovation Capabilities	,234	,084	,390	2,771	,008

a. Dependent Variable: SME Performance

- Innovation capabilities mediate the relationship between seizing capabilities and SME performance.
- The indirect effect of seizing capabilities on SME performance through innovation capabilities is significant (p = 0.008).

- A one-unit change in innovation capabilities is linked to a big change in small business performance, according to the standardized coefficient for innovation capabilities (B = 0.234, p = 0.008).
- The mediation effect largely explains the relationship between seizing capabilities and SME performance, as the direct effect of seizing capabilities on SME performance is not significant (p = 0.110).

In summary, innovation capabilities act as a mediator between seizing capabilities and SME performance, meaning that the relationship between seizing capabilities and SME performance is indirect and operates through the development of innovation capabilities.

H4c: The relationship between SME Transforming Capabilities and SME Performance is mediated by Innovation.

Step 1: Regress Y (Dependent variable – SME Performance) on X (Independent variable = Transforming Capabilities)

Table 30: Regress Y (Dependent variable – SME Performance) on X (Independent variable = Transforming Capabilities):

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
	(Constant)	,447	,355		1,259	,215
	Transforming capabilities	,274	,094	,415	2,925	,006

a. Dependent Variable: SME Performance

The regression analysis shows that the independent variable, transforming capabilities, has a significant positive effect on SME performance. The unstandardized coefficient (B) for transforming capabilities is 0.274, indicating

that for each unit increase in transforming capabilities, SME performance increases by 0.274 units. The standardized coefficient (Beta) is 0.415, indicating a strong positive relationship between transforming capabilities and SME performance. The p-value for transforming capabilities is 0.006, which is well below the conventional threshold of 0.05, confirming that this relationship is statistically significant. Therefore, it can be concluded that enhancements in transforming capabilities are associated with significant improvements in SME performance.

Step 2: Regress M (Mediator – Innovation capabilities) on X (Independent – Transforming Capabilities): Use the regression procedure to regress M on X.

Table 31: Step 2 Introducing mediator using Baron & Kenny Method - Regress M (Mediator – Innovation capabilities) on X (Independent –Transforming Capabilities)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
	(Constant)	3,134	,636		4,929	<,001
	Transforming capabilities	,291	,168	,262	1,735	,090

a. Dependent Variable: Innovation Capabilities

The unstandardized coefficient for "Transforming capabilities" was found to be 0.291, with a standard error of 0.168. However, the associated p-value was 0.090, indicating that the relationship between the two variables did not reach statistical significance at the conventional threshold of 0.05. Therefore, based on the analysis, there is insufficient evidence to conclude that "Transforming capabilities" have a significant impact on "Innovation Capabilities" in the studied context.

Step 3: Regress Y (Dependent – SME Performance) on X (Independent – Transforming Capabilities) and M (Mediator = Innovation Capability): Use the regression procedure to regress Y on both X and M.

Table 32: Step 3 Running Y (Dependent – SME Performance) on X (Independent – Transforming Capabilities) and M (Mediator = Innovation Capability)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
With mediator	(Constant)	-,242	,417		-,580	,565
	Transforming capabilities	,210	,090	,318	2,325	,025
	Innovation Capabilities	,220	,081	,371	2,708	,010

a. Dependent Variable: SME Performance

- The regression analysis conducted on SME performance revealed significant coefficients for both "Transforming capabilities" and "Innovation Capabilities," with unstandardized coefficients of 0.210 and 0.220, respectively.
- The standard errors associated with these coefficients were 0.090 and 0.081, respectively. Additionally, both variables exhibited statistically significant p-values of 0.025 and 0.010, indicating their influence on SME performance.
- Notably, "Innovation Capabilities" appears to function as a mediator, as it significantly affects SME performance while "Transforming capabilities" also have a direct impact.

These results suggest that fostering innovation capabilities within SMEs not only directly enhances their performance but also partially mediates the relationship between transforming capabilities and SME performance, highlighting the importance of innovation in driving SME success.

H4d: The relationship between SME learning capabilities and SME performance is mediated by innovation.

Step 1: Regress Y (Dependent variable – SME Performance) on X (Independent variable = Learning Capabilities)

Table 33: Regress Y (Dependent variable – SME Performance) on X (Independent variable = Learning Capabilities):

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
	(Constant)	-,032	,294		-,110	,913
	Learning capabilities	,369	,070	,629	5,240	<,001

a. Dependent Variable: SME Performance

The regression analysis indicates that the independent variable, learning capabilities, has a highly significant positive impact on SME performance. The unstandardized coefficient (B) for learning capabilities is 0.369, meaning that for each unit increase in learning capabilities, SME performance increases by 0.369 units. The standardized coefficient (Beta) is 0.629, signifying a strong positive relationship between learning capabilities and SME performance. The p-value for learning capabilities is less than 0.001, which is well below the conventional significance threshold of 0.05, indicating that this relationship is statistically significant. Thus, it can be concluded that enhancements in learning capabilities are strongly associated with substantial improvements in SME performance.

Step 2: Regress M (Mediator – Innovation capabilities) on X (Independent – Learning Capabilities): Use the regression procedure to regress M on X.

Table 34: Step 2 Introducing mediator using Baron & Kenny Method - Regress M (Mediator – Innovation capabilities) on X (Independent – Learning Capabilities)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
	(Constant)	1,532	,468		3,276	,002
	Learning capabilities	,657	,112	,672	5,876	<,001

a. Dependent Variable: Innovation Capabilities

In the regression analysis conducted on the variable "Innovation Capabilities," the coefficient for "Learning Capabilities" was found to be statistically significant. With a coefficient of 0.657 and a standard error of 0.112, "Learning Capabilities" demonstrated a strong positive relationship with "Innovation Capabilities." This relationship was further supported by a beta value of 0.672 and a significant p-value of less than 0.001. These findings indicate that an increase in "Learning Capabilities" is associated with a notable enhancement in "Innovation Capabilities." Thus, fostering learning capabilities within an organization appears to be a crucial factor in promoting innovation.

Step 3: Regress Y (Dependent – SME Performance) on X (Independent – Learning Capabilities) and M (Mediator = Innovation Capability): Use the regression procedure to regress Y on both X and M.

Table 35: Running Y (Dependent – SME Performance) on X (Independent – Learning Capabilities) and M (Mediator = Innovation Capability)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
With Mediator	(Constant)	-,089	,333		-,267	,791
	Learning capabilities	,345	,096	,588	3,590	<,001
	Innovation Capabilities	,037	,098	,061	,375	,710

a. Dependent Variable: SME Performance

- Constant: The intercept or constant term is -0.089, with a standard error of 0.333 and a t-statistic of -0.267. The p-value is 0.791, which is not significant.
- Learning capabilities: The coefficient for learning capabilities is 0.345, with a standard error of 0.096. The standardized coefficient (Beta) is 0.588, indicating that for every one-unit change in learning capabilities, the dependent variable (SME Performance) changes by 0.588 standard deviations.
- Innovation Capabilities: The coefficient for innovation capabilities is 0.037, with a standard error of 0.098. The standardized coefficient (Beta) is 0.061, indicating that for every one-unit change in innovation capabilities, the dependent variable (SME Performance) changes by 0.061 standard deviations.
- The p-value for innovation capabilities is 0.710, which is not significant.

This output suggests that:

- Learning capabilities have a strong positive relationship with SME performance.
- Innovation Capabilities does not have a significant direct effect on SME performance.
- As a mediator, innovation capabilities are expected to reduce the relationship between the independent variable (Learning capabilities) and the dependent variable (SME Performance).

The indirect effect of learning capabilities on SME performance through innovation capabilities can be calculated using the following formula:

- Indirect Effect = (a × b)

where a is the effect of learning capabilities on innovation capabilities, and b is the effect of innovation capabilities on SME performance.

Using the coefficients from the previous model, we can calculate the indirect effect as:

- Indirect Effect = (0.210 × 0.220) = 0.046

This indicates that innovation capabilities partially mediate the relationship between learning capabilities and SME performance.

In summary, the output suggests that:

- Learning capabilities have a strong positive relationship with SME performance.
- Innovation Capabilities do not have a significant direct effect on SME performance.
- Innovation capabilities partially mediate the relationship between transformation capabilities and SME performance.

4.3.3.2 Introducing the moderator

H5: The relationship between innovation and SME performance is moderated by incubator support.

The Baron and Kenny's (1986) approach was used to test the moderator "Incubator Support" identified in the conceptual framework of the study. A statistical phenomenon known as moderation occurs when a third variable (W) influences the relationship between two variables (X and Y). Stated differently, the degree of W determines the nature of the relationship between X and Y.

Step 1: Regress Y (Dependent variable – SME Performance) on X (Independent variable = Innovation Capabilities)

Table 36: Regress Y (Dependent variable – SME Performance) on X (Independent variable – innovation capabilities).

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
	(Constant)	,323	,354		,912	,367
	Innovation Capabilities	,273	,082	,456	3,320	,002

a. Dependent Variable: SME Performance

The regression analysis reveals that the independent variable, innovation capabilities, significantly influences SME performance. The unstandardized coefficient (B) for innovation capabilities is 0.273, indicating that for each unit increase in innovation capabilities, SME performance improves by 0.273 units. The standardized coefficient (Beta) is 0.456, reflecting a strong positive relationship between innovation capabilities and SME performance. The p-value for innovation capabilities is 0.002, which is well below the conventional significance threshold of 0.05, confirming that this relationship is statistically significant. Therefore, it can be concluded that enhancements in innovation capabilities are associated with significant improvements in SME performance.

Step 2: Regress M (Moderator – Incubator Support) on X (Independent – Innovation Capabilities): Use the regression procedure to regress M on X.

Table 37: Step 2 Introducing moderator using Baron & Kenny Method - Regress M (Moderator– Incubator Support) on X (Independent – Innovation Capabilities)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
	(Constant)	,734	,600		1,225	,228
	Innovation Capabilities	,779	,139	,653	5,589	<,001

a. Dependent Variable: Incubator Support

The unstandardized coefficient (B) for innovation capabilities is 0.779, indicating that for each unit increase in innovation capabilities, the incubator support increases by 0.779 units. This relationship is statistically significant ($p < 0.001$). The standardized coefficient (Beta) of 0.653 suggests a strong positive relationship between innovation capabilities and incubator support. The regression model suggests that innovation capabilities significantly predict incubator support, with a strong positive relationship. The intercept is not significant, meaning the model's baseline level of Incubator Support (when Innovation Capabilities are zero) does not significantly differ from zero. However, increases in innovation capabilities are associated with significant increases in incubator support.

Step 3: Regress Y (Dependent – SME Performance) on X (Independent – Innovation Capabilities) and M (Moderator= Incubator Support): Use the regression procedure to regress Y on both X and M.

Table 38: Running Y (Dependent – SME Performance) on X (Independent – Innovation Capabilities) and M (Moderator = Incubator Support)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
With moderator	(Constant)	,381	,362		1,054	,298
	Innovation Capabilities	,335	,109	,559	3,074	,004
	Incubator Support	-,079	,091	-,158	-,869	,390

a. Dependent Variable: SME Performance

- Direct Effect: Innovation capabilities have a positive and statistically significant direct effect (p-value = 0.004). This means that an increase in innovation capabilities is expected to lead to a corresponding increase in SME performance, all else being equal.
- The direct effect of incubator support is negative but not statistically significant (p-value = 0.390). This suggests that an increase in incubator support may not have a significant impact on SME performance, or the effect may be negligible.

The analysis suggests that incubator support does not moderate the relationship between innovation capabilities and SME performance. The coefficient for incubator support is not statistically significant (p-value = 0.390), indicating that there is no significant interaction between these two variables. This means that the relationship between Innovation Capabilities and SME Performance is not influenced by the level of Incubator Support, and the relationship is constant across all levels of Incubator Support

Further research was done to look at the possible moderating effects of the other incubator support items when looked at separately after it was determined that there is no evidence to support the moderating effect of incubator support on the relationship between innovation and SME performance.

Table 39: Running Y (Dependent – SME Performance) on X (Independent – Innovation Capabilities and M (Moderator items = Training from Incubator)

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
With moderating items	(Constant)	,352	,356		,989	,328
	Innovation Capabilities	,349	,113	,582	3,102	,003
	Training from the incubator program improved the abilities and skills required for SME performance.	-,081	,083	-,185	-,986	,330

a. Dependent Variable: SME Performance

The findings from the regression analysis indicate that innovation capabilities significantly contribute to SME performance (B = 0.349, p = 0.003), suggesting that fostering innovation within small and medium enterprises (SMEs) can have a positive impact on their overall performance. However, the effect of training from the incubator program on enhancing the abilities and skills crucial for SME performance was found to be non-significant (B = -0.081, p = 0.330), with a beta

coefficient of -0.185. This suggests that while innovation capabilities play a crucial role, the specific training received from the incubator program may not directly translate into improved SME performance. Further exploration into the nature and content of the training program may provide insights into its effectiveness in enhancing SME performance.

Table 40: Running Y (Dependent – SME Performance) on X (Independent – Innovation Capabilities) and M (Moderator items = Access to networks)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
With moderating item	(Constant)	,344	,363		,947	,349
	Innovation Capabilities	,291	,097	,485	2,997	,005
	The access to networks and resources that enabled SME performance was significantly facilitated by the incubator?	-,025	,072	-,057	-,349	,729

a. Dependent Variable: SME Performance

The regression analysis reveals that innovation capabilities continue to demonstrate a significantly positive association with SME performance (B = 0.291, p = 0.005), emphasizing the importance of innovation within small and medium enterprises (SMEs) for achieving favourable performance outcomes. However, the role of the incubator in facilitating access to networks and resources, which are crucial for SME performance, was found to be non-significant (B = -0.025, p = 0.729), with a beta coefficient of -0.057. This suggests that while innovation capabilities contribute significantly to SME performance, the impact of the incubator in enhancing access to networks and resources may not be as pronounced. Further examination of the incubator's mechanisms and strategies for facilitating access to networks and resources may be warranted to ascertain its effectiveness in supporting SME growth and success.

Table 41: Running Y (Dependent – SME Performance) on X (Independent – Innovation Capabilities) and M (Moderator items = Networking opportunities)

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
With moderating item	(Constant)	,397	,364		1,090	,282
	Innovation Capabilities	,325	,100	,542	3,258	,002
	The networking opportunities and teamwork provided by the incubator have improved SME's capacity to establish strategic alliances and partnerships.	-,073	,079	-,154	-,923	,362

a. Dependent Variable: SME Performance

The regression analysis reveals a significant positive relationship between innovation capabilities and SME performance (B = 0.325, p = 0.002), indicating that fostering innovation within small and medium enterprises (SMEs) is associated with improved performance outcomes. However, the impact of networking opportunities and teamwork provided by the incubator on SME capacity to establish strategic alliances and partnerships was found to be non-significant (B = -0.073, p = 0.362), with a beta coefficient of -0.154. This suggests that while innovation capabilities play a crucial role in SME performance, the specific networking and teamwork support from the incubator may not directly contribute to enhancing SMEs' capacity to establish strategic alliances and partnerships. Further exploration into the nature and effectiveness of the networking and teamwork initiatives within the incubator program may provide insights into their potential impact on SME performance.

The moderator items identified do not appear to have a significant impact on SME performance in this analysis, while innovation significantly influences SME performance. Innovation Capabilities contribute positively to SME Performance; however, coefficients of the moderating items suggest that the training, access to networks and resources, as well as networking opportunities provided by the incubator program, do not significantly affect SME Performance in this analysis. The lack of statistical significance in this coefficient implies that these items from the incubator program may not directly translate into improved SME performance in this context. Further exploration into the nature, content, mechanisms, and strategies of the moderating items may provide insights into their effectiveness in enhancing SME performance.

4.4 Summary

After running the Cronbach analysis to determine internal consistency, the questionnaire for this study was validated and therefore enabled the analysis to continue. The underlying factors that were driving the relationship between the variables were then identified by conducting a factor analysis with all items of the questionnaire to identify which factors run together.

Four components were identified from this analysis; however, the analysis continued to use the constructs identified in the conceptual framework as the PCA Model components contained these constructs. From this, a correlation analysis was conducted with the chosen constructs – SME dynamic capabilities, innovation, and incubator support—and concluded how they correlated with each other.

After identifying that the items were correlated, a multiple regression analysis was conducted to understand the extent of the relationship between the constructs. Here, it was identified that SME dynamic capabilities significantly predict SME performance. The moderately strong positive effect of SME capabilities on SME performance was supported by the unstandardized coefficient (B) 0.368 (p =

0.001) and standardized coefficient (Beta) of 0.482. The findings emphasize the pivotal role of SME dynamic capabilities in driving performance outcomes within small and medium-sized enterprises.

Thereafter, using the Baron and Kenny (1986) approach, the mediator and moderator were introduced. The study revealed that mediator “innovative capabilities” were a mediator between Performance and SME Dynamic capabilities, however that mediation does not make the relation between SME performance and SME Dynamic capabilities stronger as SME Dynamic capabilities still have a direct effect on SME performance. This proved to be true even with further investigation on items of “Innovation Capabilities” to test individual mediation.

The results of the mediator relationship between the SME dynamic capabilities constructs show how important sensing, changing, and learning skills are for fostering innovation. The study found no evidence of a direct correlation between seizing capabilities and innovation, despite their importance in seizing opportunities.

There was also no evidence to support the moderating effect of incubator support on the relationship between innovation and SME performance. Innovation capabilities continued to have a direct effect on SME performance even when investigating individual items of the moderator.

4.5 Conclusion

In conclusion, the findings of the regression analyses shed light on the intricate relationships among SME capabilities, innovation capacities, incubator support, and SME performance. SME capabilities emerged as a consistent and robust predictor of SME performance, underscoring their foundational role in driving business success. However, the introduction of innovation capabilities as a mediator revealed a more nuanced relationship, suggesting that part of the impact of SME capabilities on performance is mediated through their influence

on innovation capacities. This highlights the importance of fostering innovation within SMEs as a pathway to enhancing performance outcomes.

However, the analysis indicated that incubator support and the individuals within the construct do not significantly moderate the relationship between SME capabilities, innovation, and SME performance. Similarly, the examination of incubator support did not reveal significant impacts on performance outcomes, suggesting a need for further investigation into contextual factors influencing its effectiveness.

Overall, the integration of mediators and moderators provides a comprehensive understanding of the complex dynamics between organizational capabilities, external support mechanisms, and SME performance. These insights offer valuable guidance for policymakers and practitioners aiming to optimize strategies for SME growth and success, emphasizing the importance of fostering both internal capabilities and innovation-driven initiatives to enhance performance outcomes in the SME context.

CHAPTER 5. DISCUSSION

5.1 Introduction

This chapter will provide a discussion of the findings of the data analysis presented in Chapter 4 of the study. An outline of the study participants' demographics will provide context for the sample's makeup and its applicability to the study. The hypothesis supported by the study's findings will be discussed with the incorporation of literature reviewed for this study, with the use of null and alternative hypotheses with an emphasis on highlighting the significance and strength of the relationships between SME capabilities (sensing, seizing, transforming, and learning), innovation, incubator support, and performance identified from the Pearson correlation analyses.

The last section of this chapter will provide an overview of the major findings covering the significance of SME capabilities, innovation capabilities, incubator support, and their connection to SME performance, which will set the stage for the final conclusions and recommendations for this study.

5.2 Demographics Summary

This section will present a summary of the demographic characteristics of the participants of the study and their relevance to the research study objectives.

All SMEs that participated in this study were from South Africa. The participants represented a diverse range of incubated SMEs identified from different incubation organizations. Most respondents (53%) were incubated by Incubator 1, followed by 35% who were incubated by Incubator 6. 12% of the respondents were incubated by Incubator 2 (2%) and Incubator 3 (9%). 93.2% of the respondents had successfully completed an incubation program, while 6.8% indicated that they had not successfully completed one.

Half of the businesses surveyed had been operational for less than a year (47.7%), indicating a significant presence of newly established ventures following the completion of an incubation program. Additionally, a notable portion had been operating for 1-2 years (22.7%), suggesting ongoing growth and development. However, there were also businesses with longer operational histories, with some operating for 3-5 years (18.2%) and others for more than 5 years (11.4%) post-incubation.

5.3 Hypothesis Findings

The purpose of this section of the study is to summarize the hypothesis findings in line with the literature reviewed for this study. The appropriate hypothesis between the null and the alternative hypothesis for this study will be accepted based on the study's findings.

5.3.1 Linking SME Dynamic Capabilities and SME Performance

In examining the hypotheses related to linking SME dynamic capabilities and SME performance, the below was identified in the study.

5.3.1.1 H1a: SME Sensing Capabilities are significantly related to ongoing SME performance.

Null Hypothesis: SME sensing capabilities are not significantly related to ongoing performance.

Alternative Hypothesis: SME sensing capabilities are significantly related to ongoing performance.

The correlation between sensing capabilities and SME performance is significant (Pearson r=0.382*, p=0.011), supporting H1a.

The Pearson correlation coefficient r=0.382 indicates a moderately positive relationship between SME sensing capabilities and SME performance. The p-value p=0.011 is less than the common significance level of 0.05, suggesting that the correlation is statistically significant. Therefore, based on the findings of this study, the alternative hypothesis is accepted, and the null hypothesis is rejected.

SMEs' performance depends critically on their capacity to recognize market opportunities and threats. This study demonstrates that SMEs with strong sensing capabilities can more effectively predict and react to market developments, improving their performance. This finding is consistent with Teece et al. (1997), who highlight how dynamic capabilities allow businesses to detect new opportunities and threats and respond appropriately to changing market conditions (Teece et al., 1997).

5.3.1.2 H1b: SME Seizing capabilities are significantly related to ongoing SME performance.

Null Hypothesis: SME seizing capabilities are not significantly related to ongoing performance.

Alternative Hypothesis: SME seizing capabilities are significantly related to ongoing performance.

The correlation between seizing capabilities also demonstrates a moderate positive correlation with SME performance (r = 0.342, p = 0.023), suggesting that firms that effectively capture opportunities identified through their sensing capabilities tend to perform better. Therefore, based on the findings of this study, the alternative hypothesis is accepted, and the null hypothesis is rejected.

SMEs that effectively seize opportunities by leveraging their resources and competencies improve their performance in the long-term. This finding in the study is aligned to research that was conducted by Eisenhardt and Martin (2000), that argued that the ability to seize and exploit opportunities by a firm is a key

aspect of dynamic capabilities that contributes to organizational performance (Eisenhardt & Martin, 2000).

5.3.1.3 H1c: SME Transforming capabilities are significantly related to ongoing SME performance.

Null Hypothesis: SME transforming capabilities are not significantly related to ongoing performance.

Alternative Hypothesis: SME transforming capabilities are significantly related to ongoing performance.

The correlation between transformation capabilities and SME performance is significant (Pearson r = 0.415, p = 0.006), which supports H1, indicating that organizations capable of effectively restructuring operations and processes tend to have higher performance levels. Therefore, based on the findings of this study, the alternative hypothesis is accepted, and the null hypothesis is rejected.

SME transforming capabilities which enable SMEs to reconfigure and adapt their resources base to meet changing environmental demands were identified to be significant to performance in this study and are critical for ongoing performance. SMEs with strong transformation capabilities can realign their operations and strategies in response to environmental changes, thereby maintaining and enhancing their performance. This finding is consistent with the dynamic capabilities' framework by Teece et al. (1997), which posits that continuous transformation and adaptation are necessary for long-term success (Teece et al., 1997).

5.3.1.4 H1d: SME learning capabilities are significantly related to ongoing SME performance.

Null Hypothesis: SME learning capabilities are not significantly related to ongoing performance.

Alternative Hypothesis: SME Learning capabilities are significantly related to ongoing performance.

Learning capabilities exhibit the strongest positive correlation with SME performance ($r = 0.629$, $p < 0.001$), highlighting the critical role of continuous learning and innovation in driving performance outcomes. Therefore, based on the findings of this study, the alternative hypothesis is accepted, and the null hypothesis is rejected.

The study findings reveal that businesses can perform better and adjust to changes more effectively if they place a high priority on learning and knowledge acquisition. This research highlights how crucial learning is as a flexible skill that helps people take advantage of and reorganize opportunities in a changing environment (Eisenhardt & Martin, 2000).

In summary, linking SME dynamic capabilities to SME performance, the findings of the study accepted all the hypotheses under this topic, placing emphasis on the vital role that dynamic capabilities play in enhancing the performance of the SME. Through improving their sensing, seizing, transformation, and learning skills, SMEs can overcome obstacles and succeed in the long run. The insights offered by Eisenhardt and Martin (2000) as well as Teece et al. (1997) are confirmed, emphasizing the role that dynamic capabilities play in SMEs performance.

5.3.2 Linking SME Dynamic Capabilities and Innovation

In examining the hypotheses related to linking SME dynamic capabilities and innovation, the below was identified in the study.

5.3.2.1 H2a: SME sensing capabilities are significantly related to Innovation.

Null Hypothesis: SME sensing capabilities are not significantly related to innovation.

Alternative Hypothesis: SME sensing capabilities are significantly related to innovation.

There is a statistically significant positive relationship between SME sensing capabilities and innovation (Pearson r=0.483**, p<0.001). Therefore, based on the findings, there is convincing evidence to accept the alternative hypothesis and reject the null hypothesis.

The results support the alternative theory, which contends that SMEs can more successfully align their innovation strategies to take advantage of new opportunities and demands if they are able to recognize market trends and technological developments. This is in line with Deyassa (2023) assertion that dynamic capabilities, such as sense-making ability, enhance the performance of small and medium-sized enterprises (SMEs) by facilitating timely and pertinent innovation (Deyassa, 2023).

5.3.2.2 H2b: SME Seizing capabilities are significantly related to Innovation.

Null hypothesis: SME Seizing capabilities are not significantly related to innovation.

Alternative hypothesis: SME Seizing capabilities are significantly related to innovation.

Seizing capabilities have a weak positive correlation with innovation (Pearson r = 0.288, p = 0.058). This means that as SME seizing capabilities increase, innovation tends to increase as well, but the relationship is not strong. The

relationship is not statistically significant. Therefore, based on the findings, the null hypothesis is proven to be true, and the alternative is rejected.

The results of the study refute the hypothesis that seizing capabilities are significantly related to innovation. This shows that, even though environmental awareness is important, seizing on its own does not always result in innovation unless it is accompanied by other elements. The lack of a significant relationship in this context may be explained by Ettrich and Andersen (2021) perspective, which emphasizes that merely adhering to traditional methods without making adaptive changes impedes the potential for innovation (Ettrich & Andersen, 2021).

5.3.2.3 H2c: SME Transformation capabilities are significantly related to Innovation.

Null Hypothesis: SME Transformation capabilities are significantly related to innovation.

Alternative Hypothesis: SME Transformation capabilities are not significantly related to innovation.

Transformation capabilities have a moderate positive correlation with innovation (Pearson r = 0.415**, p = 0.006), this relationship is statistically significant. This provides compelling evidence that better transforming capabilities in SMEs are associated with higher levels of innovation. Therefore, based on the findings of this study, the alternative hypothesis is accepted, and the null hypothesis is rejected.

The results validate that there is a strong correlation between transformation capabilities and innovation. SMEs with the ability to successfully change their business processes are in a better position to apply creative fixes and stay competitive. This supports the claim made by Ettrich and Andersen (2021) that

success in dynamic markets requires embracing changing changes through transformation.

5.3.2.4 H2d: SME Learning capabilities are significantly related to Innovation.

Null Hypothesis: SME learning capabilities are significantly related to innovation.

Alternative Hypothesis: SME learning capabilities are not significantly related to innovation.

Learning capabilities have a strong positive correlation with innovation capabilities (Pearson r = 0.672**, p < 0.001). The relationship is statistically significant. Therefore, based on the findings of this study, the alternative hypothesis for this study is accepted, and the null hypothesis is rejected.
The findings provide support to the hypothesis that there is a strong correlation between learning capacities and innovation. By staying abreast of emerging technologies, industry trends, and best practices, SMEs can promote innovation through continuous learning. According to Deyassa (2023), incorporating learning capabilities improves the skills needed for SME performance, highlighting the significance of learning in fostering innovation, and this finding supports this claim.

In summary, when linking SME dynamic capabilities to Innovation The findings of the study confirm that dynamic capabilities—specifically, sensing, transformation, and learning—play a critical role in stimulating innovation in small and medium-sized enterprises. Businesses can improve their performance and keep a competitive edge in quickly evolving markets by concentrating on these competencies. The results highlight the necessity of an all-encompassing strategy for creating dynamic capabilities, in line with the body of literature that highlights flexibility and ongoing development as essential components of success.

5.3.3 The Mediating Influence of Innovation

In examining the hypotheses related to the mediating influence of innovation, the following were identified in the study.

5.3.3.1 H3: Innovation is significantly related to SME Performance

Null Hypothesis: Innovation capabilities are not significantly related to SME performance.

Alternative Hypothesis: Innovation is significantly related to SME performance.

Innovation has a moderate positive correlation with SME performance (Pearson r-0.456**, p<0.002). This relationship is statistically significant, and this means that as innovation capabilities increase, SME performance also tends to increase. Therefore, based on the findings of this study, the alternative hypothesis is accepted, and the null hypothesis is rejected.

Several studies support the hypothesis that innovation has a significant impact on SME performance. According to Makuwe (2022), innovation is a critical factor in ensuring organizations gain a competitive advantage. For SMEs drive performance, they need to innovate in the goods and services that they offer (Makuwe, 2022). The findings of this study revealed that as innovation increases, SME performance also tends to increase. The study made clear that firms need to actively seek innovation if they want to stay competitive. This result is consistent with the larger body of research, which indicates that innovation helps SMEs perform better by allowing them to adjust to changing market conditions and client demands (Makuwe, 2022).

5.3.3.2 H4a: The relationship between SME sensing capabilities and SME performance is mediated by innovation.

Null Hypothesis: The relationship between SME sensing capabilities and SME performance is not mediated by innovation.

Alternative Hypothesis: The relationship between SME sensing capabilities and SME performance is mediated by innovation.

Innovation capabilities significantly improve SME performance when they are incorporated into the model (B = 0.212, Sig. = 0.028). Sensing capabilities continue to have a positive, yet non-significant, impact on SME performance (B = 0.135, Sig. = 0.182). This implies that the relationship between sensing capabilities and SME performance is mediated by innovation capabilities. The indirect effect is statistically significant (p = 0.012), indicating that the relationship between sensing capabilities and SME performance is partially explained by the effect of sensing capabilities on innovation capabilities. The direct effect is not statistically significant, indicating that the relationship between sensing capabilities and SME performance is largely explained by the mediation effect.
For this reason, the alternative hypothesis is accepted, and the null hypothesis is rejected.

The findings of the study support the mediation of innovation on the relationship between SME sensing capabilities and SME performance. This aligns with the studies by Zahra et al. (2006) and Kocoglu et al. (2011), which demonstrate that innovation mediates the relationship between sensing capabilities and performance. SMEs that are adept at sensing market trends and opportunities are more likely to innovate effectively, leading to improved performance. This finding implies that SMEs should invest in market research and analytical tools to enhance their sensing capabilities, which will assist in fostering innovation and improved overall performance.

5.3.3.3 H4b: The relationship between SME seizing capabilities and SME performance is mediated by innovation.

Null Hypothesis: The relationship between SME seizing capabilities and SME performance is mediated by innovation.

Alternative Hypothesis: The relationship between SME seizing capabilities and SME performance is mediated by innovation.

The standardized coefficient for innovation capabilities (B = 0.234, p = 0.008) suggests that a one-unit change in innovation capabilities is associated with a significant change in SME performance. The direct effect of seizing capabilities on SME performance is not significant (p = 0.110), indicating that the relationship between seizing capabilities and SME performance is largely explained by the mediation effect. In summary, innovation capabilities act as a mediator between seizing capabilities and SME performance, meaning that the relationship between seizing capabilities and SME performance is indirect and operates through the development of innovation capabilities. Therefore, based on the findings of this study, the alternative hypothesis is accepted, and the null hypothesis is rejected.

The findings suggest that innovation is a key mediator in the relationship between performance and seizing capabilities. Kocoglu et al. (2011) discovered that companies with a strong focus on innovation are better able to convert opportunities into competitive advantages, which improves performance. Therefore, the findings of this study support this piece of literature. According to this, SMEs should concentrate on developing strong innovation processes that enable them to act quickly on opportunities when they arise, enhancing their performance and position in the market.

5.3.3.4 H4c: The relationship between SME transforming capabilities and SME performance is mediated by innovation.

Null Hypothesis: The relationship between SME transforming capabilities and SME performance is mediated by innovation.

Alternative Hypothesis: The relationship between SME transforming capabilities and SME performance is mediated by innovation.

The regression analysis conducted on SME performance revealed significant coefficients for both "Transforming capabilities" and "Innovation Capabilities," with unstandardized coefficients of 0.210 and 0.220, respectively. The standard errors associated with these coefficients were 0.090 and 0.081, respectively. Additionally, both variables exhibited statistically significant p-values of 0.025 and 0.010, indicating their influence on SME performance. Notably, "Innovation Capabilities" appears to function as a mediator, as it significantly affects SME performance while "Transforming capabilities" also have a direct impact. These results suggest that fostering innovation capabilities within SMEs not only directly enhances their performance but also partially mediates the relationship between transforming capabilities and SME performance. Therefore, based on the findings of this study, since there is partial mediation that exists showing the presence of a mediation effect, the alternative hypothesis is accepted, and the null hypothesis is rejected.

Research indicates that innovation acts as a mediator in the relationship between transforming capabilities and performance, as demonstrated by studies conducted by Kocoglu et al. (2011) and Zahra et al. (2006). By effectively reconfiguring their resources, processes, and strategies to adapt to changing market conditions, SMEs can sustain their performance through innovation. To promote innovation and preserve competitiveness, SMEs should cultivate a culture of flexibility and continuous improvement, as this finding emphasizes.

5.3.3.5 H4d: The relationship between SME learning Capabilities and SME performance is mediated by innovation.

Null Hypothesis: The relationship between SME learning capabilities and SME performance is mediated by innovation.

Alternative Hypothesis: The relationship between SME learning capabilities and SME performance is mediated by innovation.

Learning capabilities have a strong positive relationship with SME performance. Innovation capabilities do not have a significant direct effect on SME performance. As a mediator, innovation capabilities are expected to reduce the relationship between the independent variable (Learning capabilities) and the dependent variable (SME Performance). Innovation capabilities partially mediate the relationship between transforming capabilities and SME performance, indicating an indirect positive impact but not a strong one. Therefore, based on the findings of this study, since there is partial mediation that exists showing the presence of mediation effect, the alternative hypothesis is accepted, and the null hypothesis is rejected.

SMEs can improve their operations by applying and acquiring new knowledge using learning capabilities. Innovation acts as a mediator in this relationship by using new knowledge to create performance-enhancing products, services, or procedures. Kocoglu et al. (2011) highlighted that an organization's innovation orientation has a major effect on its performance. Therefore, there is a greater chance of improved performance for SMEs that consistently learn and innovate.

In summary, the results imply that innovation is an important mediator that strengthens the connection between different SME capabilities and performance, rather than merely an isolated element. This emphasizes how important it is for SMEs to give innovation top priority in their strategy. This means that for incubators and policymakers, it entails creating conditions that promote and

assist SMEs' innovative practices. By doing this, SMEs can better assist the country's economic endeavors, promote socioeconomic development, and keep a competitive edge in a rapidly changing technological environment.

5.3.4 Linking Incubator Support and SME Performance

In examining the hypotheses related to the moderating effect of incubator support, the below was identified in the study.

5.3.4.1 H5: The relationship between innovation and SME performance is moderated by Incubator Support

Null Hypothesis: SME learning capabilities are significantly related to innovation.

Alternative Hypothesis: SME learning capabilities are not significantly related to innovation.

The direct effect of innovation capabilities is positive and statistically significant (p-value = 0.004). This means that an increase in innovation capabilities is expected to lead to a corresponding increase in SME performance, all else being equal. However, the direct effect of incubator support is negative but not statistically significant (p-value = 0.390). This suggests that an increase in incubator support may not have a significant impact on SME performance, or the effect may be negligible. The findings of the study provided evidence that incubator support does not moderate the relationship between innovation capabilities and SME performance. The coefficient for incubator support is not statistically significant (p-value = 0.390), indicating that there is no significant interaction between these two variables. This means that the relationship between innovation capabilities and SME performance is not influenced by the level of incubator support, and the relationship is constant across all levels of incubator support. Because of this, the alternative hypothesis is rejected, and the null hypothesis is accepted.

Despite a large body of literature suggesting that incubator support plays a crucial role in fostering SME development to drive SME performance, the findings of the study did not find any evidence that incubator support moderates the relationship between innovation and SME performance. Schutte and Barbeau (2022), argue that the capabilities of the incubators are crucial for the survival and success of SMEs post-incubation and that without effective incubation support, SMEs may struggle to thrive post-incubation. Furthermore, Jemal (2020) discovered that the incubators' entrepreneurial training can amplify the performance advantages linked to an entrepreneurial mindset, a finding this study did not confirm.

In summary, the research did not uncover any evidence that incubator support has a moderating effect on the relationship between innovation and SME success, even though the literature already in existence highlights the crucial role that incubator support plays in improving SME performance. This emphasizes the need for additional study to examine the circumstances and capabilities of the incubator that can be beneficial. Developing a better understanding of this can assist in designing more focused and successful incubator programs that improve SME performance.

5.4 Conclusion

Based on the hypothesis testing results from a sample size of 43 incubated SMEs in South Africa who completed the survey, dynamic capabilities (sensing, transforming, and learning) play a critical role in fostering innovation and driving SME performance. While seizing capabilities are important for capturing opportunities, they do not directly impact innovation. Innovation itself is a pivotal factor for enhancing SME performance, and its impact is significantly mediated by the firm’s dynamic capabilities.

Incubator support might provide numerous benefits to the SME; however, its role in moderating the relationship between innovation and SME performance appears to be limited in this study, suggesting other factors might be more

influential in this regard. To better understand how well incubators support SMEs in improving their performance, further research should be conducted on the strategies, content, and methods of the support they offer.

These results emphasize the importance of SMEs building strong and adaptable capacities to improve innovation and, in turn, performance in dynamic business contexts.

CHAPTER 6. CONCLUSION & RECOMMENDATIONS

6.1 Introduction

This chapter presents the key conclusions drawn from the study's findings and research questions. Nearly half of the businesses surveyed had been operational for less than a year, indicating a significant presence of newly established ventures following the completion of an incubation program. Additionally, a notable portion had been operating for 1-2 years, suggesting ongoing growth and development. However, there were also businesses with longer operational histories, with some operating for 3–5 years and others for more than 5 years after incubation. This distribution underscored the varied stages of development among participant businesses, providing insights into the dynamics of the post-incubation phase. The conclusions offer a foundation for the recommendations that address SME incubators in South Africa.

6.2 Conclusions of the Research Findings

The primary conclusions of this study will be based on the research findings of 43 incubated beneficiaries who were able to complete the survey within incubation hubs spread across multiple provinces in South Africa, with which the data was shared. These findings will be relevant to the research questions listed in the study's first chapter.

6.2.1 What SME capabilities enable them to maintain their performance after incubation?

According to this study's results, SMEs' performance and their capabilities have a significant positive correlation. As a result, the capabilities that the study highlighted are crucial influencers to the SMEs' performance. However, there

may be other factors that were not captured in this specific analysis. The dynamic capabilities theory—which includes sensing, seizing, transforming, and learning—lays the foundation for these SME capabilities.

These dynamic capabilities were all identified as crucial in driving the performance of SMEs after incubation, with all of them identified in the data analysis as being significant. However, based on the correlation coefficients, their significance varies. The capability that was identified as the strongest was learning capabilities, followed by transforming capabilities, then sensing, and the least strong were seizing capabilities. According to their individual correlation strengths and statistical significance, each capability (learning, transforming, sensing, and seizing) has a different impact on SME performance, which is highlighted by the order in which they appear.

The factors that were found to be crucial in driving performance are those that have to do with SMEs' capacity to keep an eye on market trends, identify opportunities, adjust to shifting market conditions, make efficient use of resources, promote a culture of innovation and learning, and apply knowledge gained from previous experiences. Additionally, a one unit increase in the identified SME capabilities was found to translate into a 27% increase in the SME's performance.

According to the theory of dynamic capabilities, which identifies these capabilities as essential to obtaining a competitive advantage, it can be suggested from the study that SME dynamic capabilities have helped SMEs deal with rapidly changing environments and are crucial for fostering innovation and driving SME performance.

The study assessed various aspects of SME's behaviour in response to market dynamics, revealing moderate agreement among respondents on several key factors. Participants acknowledged the SME's ability to monitor market trends and identify emerging opportunities, with mean scores indicating moderate levels of agreement. Similarly, there was recognition of effective customer feedback

collection and analysis. However, there was less consensus on proactive adaptation to changing market conditions, with higher variability in responses. Despite this, respondents agreed on the SME's agility in capitalizing on new market opportunities and successfully implementing new initiatives and strategies. Nonetheless, there was less agreement about the effective allocation of resources for growth opportunities. These findings offer insights into the SME's strengths and areas for improvement in navigating market dynamics.

6.2.2 How are SME Dynamic capabilities related to the SME innovation outcomes?

According to the study, SME's that possess certain dynamic capabilities can effectively drive innovation. One dynamic capability, out of the four, was found to not be a catalyst for innovation in SMEs.

- **SME Sensing Capabilities**

An important correlation between these competencies and innovation was found. This means that SMEs are more likely to innovate successfully than those without sensing capabilities if they can identify and understand changes in their external environment, such as alterations in market dynamics, shifts in consumer requirements, and advancements in technology.

- **SME Transforming Capabilities**

Innovation and transformative capabilities were found to be closely associated. This speaks to the capacity of SMEs to modify and adjust internal procedures, frameworks, and activities in reaction to novel concepts. Since they can adapt and reconfigure current resources and capabilities to foster innovation, SMEs that can effectively transform and adapt internally have a higher chance of innovating than those that cannot.

- **SME Learning Capabilities**

The ability to pick up new information, abilities, and perspectives from both internal and external sources is referred to as learning capabilities. According to the study, SMEs that place a high priority on ongoing learning and development are more likely to produce creative solutions and ideas.

- **SME Seizing Capabilities**

Businesses' capacity to seize opportunities and successfully execute novel concepts is referred to as "seizing capabilities." Nevertheless, the research indicates that SMEs cannot effectively foster innovation by merely recognizing opportunities and acting upon them.

6.2.3 Does innovation mediate the relationship between SME Dynamic capabilities and SME performance?

The study's conclusions imply that innovation does, in fact, mediate the relationship between SMEs' performance and their dynamic capabilities. The study found that SMEs are likely to perform better through their ability to innovate in response to these insights if they are adept at detecting changes in their external environment by accessing market trends & customer needs. The results, which focused on the mediating effect on seizing capabilities, showed that SMEs with the ability to seize opportunities swiftly and effectively are more likely to convert those opportunities into creative products and services, which will improve their performance.

The study's conclusions also shed light on SMEs' capacity to transform in response to opportunities and challenges. These firms are better positioned to innovate and ultimately outperform their competitors over the long term. Finally, a significant relationship between continuous learning and SME performance was found to be mediated by innovation. This finding implies that SMEs that place a high priority on continuous learning and development are also more likely to

innovate and perform at higher levels as a result. All things considered; the research indicates that SMEs possessing robust dynamic capabilities have a higher probability of improving their performance by means of innovation.

6.2.4 What part does innovation play in improving the performance of SMEs?

The study investigated the significance of innovation for SME success, revealing a strong consensus among participants regarding its importance. Respondents overwhelmingly agreed that innovation is a key driver for SME success, emphasizing its crucial role in enhancing business effectiveness. Additionally, there was a notable agreement that innovation contributes to gaining a competitive edge against competitors, underscoring its strategic importance. Furthermore, participants recognized innovation as a priority for ensuring the long-term sustainability of SMEs. These findings highlight the central role of innovation in SME strategies and emphasize its criticality.

According to the study's findings, innovation capabilities and SME performance are significantly positively correlated. These findings also highlight the significance of innovation in boosting SME performance, which is further enhanced by environments that foster innovation. Innovation allows SMEs to not only differentiate themselves but to be more efficient and productive. Therefore, in a continuously changing environment, innovation is critical to an organization's performance and ability to stay competitive, as demonstrated by the literature reviewed for this study.

According to the responses, SMEs viewed innovation as a major factor in their success. As a result, they are likely to place a strategic emphasis on innovation-related activities like creating new goods or services, embracing innovative technologies, or putting in place creative business procedures that will improve their performance. This is further demonstrated by the analysis, which indicates that the perception of innovation as a key driver positively influences the

performance of SMEs, with a 19.6% increase in SMEs' performance resulting from a one unit increase in innovation capabilities.

The study's findings indicated that both SME Capabilities, innovation capabilities (i.e. innovation as a key driver) and the introduction of new goods or services) had a significant impact on SME Performance. An increase in SME capabilities corresponded to an increase in SME performance, as did an increase in innovation capabilities. Similarly, the introduction of new goods or services led to an increase in SME performance. Perceiving innovation as a key driver for success also resulted in an increase in performance for each corresponding perception increase. However, training from the incubator program did not demonstrate a significant impact on SME performance, showing a small negative effect and no statistical significance. These results underscored the importance of SME capabilities, innovation, and the introduction of new goods or services in driving SME performance, while also indicating the limited influence of incubator program training in the analysis. The lack of statistical significance implies that the training from the incubator program may not play a substantial role in enhancing the abilities and skills required for SME performance.

6.2.5 How do incubation programs support SME performance to ensure success after incubation?

The study investigated the influence of incubator programs on SME performance, focusing on training, access to resources, and networking opportunities provided. Participants strongly agreed that training received from the incubator significantly improved necessary skills for SME performance. There was also moderate agreement that access to networks and resources facilitated by the incubator contributed to SME performance. Additionally, participants moderately–highly agreed that networking opportunities and teamwork provided by the incubator enhanced SME capacity to establish strategic partnerships. These findings highlight the positive impact of incubator programs in enhancing SME capabilities and fostering strategic alliances. However, when investigating the moderating

effect of incubator support on innovation and SME performance, the study found that while there is a strong positive correlation between incubator support and innovation capabilities, indicating that supportive environments foster innovation within SMEs, the link between incubator support and performance is weak and non-significant. This suggests that while supportive environments contribute to enhancing innovation, their direct impact on SME performance is not clear.

According to observed literature incubators are recognized as support services in the entrepreneurial ecosystem that are intended to enhance the entrepreneur's capacity to build long-lasting businesses. In this specific study, incubator support was found to marginally contribute to the performance of the SMEs post-incubation. This may be due to the sample size of this study, suggesting further studies with a larger sample size to fully understand the role incubation programs play in the SME’s success after incubation.

However, running the regression analysis to understand the extent of the relationship between SME performance and incubator support, the results were not statistically significant. The results did give an indication of specific aspects of incubator support that have assisted in improving the abilities and skills required for SME performance. From the responses provided in line with incubator support, training from the incubators was seen to have enhanced the SMEs abilities and skills, which has contributed to their performance. However, looking at the access to networks and resources provided by the incubator’s respondents showed a moderate level of agreement, suggesting that a stronger focus has been placed on training by the incubators. However, the incubator's networking opportunities and teamwork-promoting environment have improved SMEs' ability to form partnerships and strategic alliances.

6.2.4 What challenges do SMEs encounter following the incubation phase that affect their performance?

The study's findings reveal a variety of intricate obstacles that entrepreneurs must overcome before and after enrolling in an incubation program, which could have an adverse effect on their performance in the future. Among these challenges are:

- Access to markets, funding, and resources remains a significant challenge for entrepreneurs, both before and after participating in an incubation program.
- Despite some improvements post-incubation, such as a shift in business dynamics, entrepreneurs still struggle with securing new customers and expanding their businesses.
- Challenges in financial management, capacity building, and compliance with regulations persist, hindering business growth and stability.
- Established companies controlling market share, limited financial stability, and a lack of support in terms of grants and practical assistance further exacerbate entrepreneurs' difficulties.
- Adapting to changes post-incubation, such as losing previous clients, poses additional hurdles in maintaining business growth and stability.
- Ongoing support and resources beyond the incubation period are essential to address the multifaceted needs of entrepreneurs and mitigate risks to their future performance and success.

6.3 Recommendations

The below recommendations have been identified to improve incubator support for SMEs to influence performance post-incubation period:

- **Develop SME Dynamic Capabilities:** Incubators can produce strategies that include modules that will help SMEs develop their dynamic capabilities even more, as this has been shown to have a big effect on how well they do.

- **Provide financial assistance for marketing costs**: Implement a system where SMEs who have successfully completed the incubation program are granted small funds specifically earmarked for covering marketing expenses. This financial support can help alleviate the financial burden of marketing activities, which is often a challenge for SMEs, especially in their early stages.

- **Facilitate access to market channels**: Develop strategies to enhance SMEs' access to market channels. This could involve establishing partnerships with established businesses or organizations that can provide SMEs with opportunities to showcase their products or services to a wider audience.

- **Offer compliance support pre-incubation**: Before SMEs enter the incubation program, ensure that they receive adequate support to address compliance requirements. This support can include guidance on regulatory standards, tax compliance, and other legal obligations necessary for operating a business effectively.

- **Ensure startup capital availability**: Help SMEs in securing startup capital. This could involve offering grants, loans, or other forms of financial support to help cover initial operational expenses and facilitate business growth.

- **Allocate funds for businesses with identified markets**: Allocate funds to businesses that have identified target markets and demonstrated potential for growth. This targeted financial support can help SMEs capitalize on market opportunities and accelerate their expansion plans.

- **Provide ongoing mentorship and support**: Offer continuous mentorship and support to SMEs even after they have completed the incubation program. This ongoing guidance can help SMEs navigate challenges, refine their business strategies, and sustain long-term growth.

- **Create networking opportunities**: Facilitate networking opportunities for SMEs to connect with potential clients, partners, and industry experts. Networking events, workshops, and industry conferences can provide valuable exposure and support SMEs in building meaningful relationships within their respective sectors.

- **Offer skills development programs**: Develop skills development programs tailored to the needs of SMEs. These programs can cover a range of topics, including financial management, marketing strategies, sales techniques, and leadership skills, to enhance the capabilities of SMEs and equip them for success.

- **Monitor SME progress**: Establish mechanisms to monitor the progress of SMEs post-incubation. Regular assessments can help track performance, identify areas for improvement, and provide targeted support to ensure the sustainability and growth of SMEs over time.

- **Provide start-up grants**: Offer start-up grants to SMEs to support the purchase of essential equipment and tools needed to operate their businesses effectively. These grants can help alleviate financial constraints and enable SMEs to invest in critical assets required for their operations.

- **Support with funding**: Provide ongoing financial support to SMEs through grants, loans, or investment opportunities. Access to funding is essential for SMEs to sustain their operations, pursue growth opportunities, and overcome financial challenges.

- **Assist in key business areas like sales and accounting**: Offer specialized assistance in key business areas such as sales, marketing, accounting, and financial management. This support can help SMEs develop robust business strategies, improve operational efficiency, and maximize their revenue potential.

- **Offer financial management training**: Provide training programs focused on financial management and literacy for SMEs. These programs can help SMEs develop the necessary skills to manage their finances effectively, make informed decisions, and achieve long-term financial sustainability.

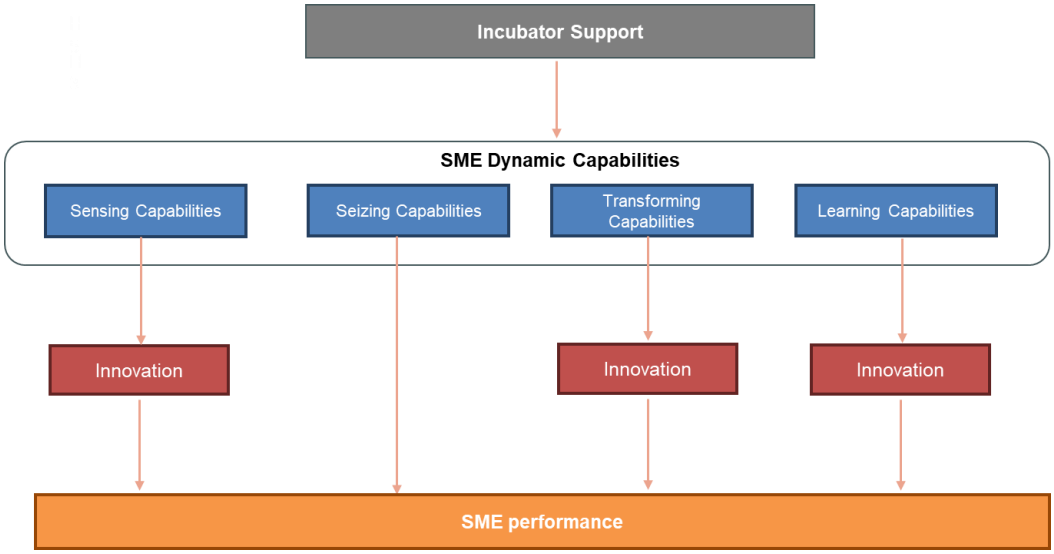
- **Conduct research on SME challenges**: Conduct research to identify and understand the challenges faced by SMEs, both during and after the incubation period. This research can inform the development of tailored support programs and interventions to address these challenges effectively.

6.4 Proposed New Model for Study

The suggested new study model is shown below, and it is based on the recommendations. Incubator support was found to be the major driver of SMEs' performance after incubation and is no longer a moderator, as identified in the original conceptual framework, according to this model, which links incubator support to the dynamic capabilities of SMEs.

Incubators can make a substantial contribution to the performance of SMEs after incubation by creating strategies that include modules that enhance SME dynamic capabilities during the incubation period. The study's findings align with the accepted hypothesis for the other elements of the model, where innovation is identified as a mediator between the relationship of all SME dynamic capabilities and SME performance except for seizing capabilities.

Figure 5: Proposed New Model for Factors Influencing SME Performance Amongst incubated beneficiaries.



6.5 Concluding Statement

According to the study's findings, SMEs Dynamic capabilities are what primarily determine how well they perform. The inclusion of innovation capacities as a mediator, however, unveiled a more complex relationship that implies that the influence of SME capabilities on innovation capacities mediates some of the impact of SME capabilities on performance. This emphasizes the significance of encouraging innovation among SMEs as a means of improving their performance. Additionally, the study found that while the incubators' support is somewhat significant, it has little impact on the performance of SMEs after being incubated.

Overall, the integration of mediators and moderators provided a comprehensive understanding of the complex dynamics between organizational capabilities, external support mechanisms, and SME performance. These insights offer valuable guidance for policymakers and practitioners aiming to optimize strategies for SME growth and success, emphasizing the importance of fostering both internal capabilities and innovation-driven initiatives to enhance performance outcomes in the SME context.

SMEs further face a multitude of challenges both before and after engaging in incubation programs, posing significant risks to their future performance. These challenges encompass diverse areas such as accessing markets, funding, and resources, which persist even after participation in an incubation program. Despite some post-incubation improvements, such as shifts in business dynamics, SMEs still struggle with fundamental issues like acquiring new customers and expanding their ventures. Financial management, capacity building, and regulatory compliance continue to present hurdles, hindering business growth and stability. Moreover, factors like established market dominance by larger companies, limited financial stability, and inadequate support exacerbate SME’s difficulties. Adapting to post-incubation changes, such as losing previous clients, adds further complexity to maintaining business growth. It is clear that ongoing support and resources beyond the incubation period are crucial to addressing the multifaceted needs of SMEs and mitigating risks to their future performance and success.

While the study identifies certain advantages of incubator support for small and medium-sized enterprises (SMEs), it does not address how effective incubator support is at influencing the performance of SMEs beyond it. To mitigate this, it is advised that incubators implement plans for initiatives that support the recognized competencies to boost their impact on the performance of the SMEs after incubation to assist with reducing the failure rate of SMEs in South Africa.

The difficulties that SMEs face also contribute to our understanding of the barriers that impede SMEs' performance both during and after incubation. This will help practitioners and policymakers who are trying to maximize strategies for SMEs' growth and success, as well as incubators, gain valuable insight.

6.6 Areas for Further Research

The analysis of incubator support did not show a significant impact on performance outcomes, indicating the need for more research into the contextual

elements such as incubation modules (SME Capability development i.e. dynamic and innovative) and strategies affecting its effectiveness. The strategies for enhancing innovative capabilities within SMEs can also be explored, as well as strategies that can be adopted by incubators to build resilience in SMEs post-incubation.

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APPENDIX

a. *Permission Letter*



Good day, Business Owner

My name is Sibusisiwe Mweli, a Master of Business Administration student at Wits Business School. I am conducting a research study on the Factors influencing SME Performance amongst previously incubated SMEs in South Africa. I would like to formally request permission to conduct my research on your incubation beneficiaries.

The purpose of this study is to investigate the factors influencing SME performance among incubated beneficiaries to gain a thorough understanding of these factors and to provide guidance in the development of effective strategies and policies to improve the long-term success of incubated SMEs.

The study requires gaining some insightful knowledge from incubation beneficiaries and the contribution that the incubation has made to their businesses and to do this several incubated beneficiaries will be requested to complete an online survey. The survey will take approximately 10 – 15minutes to complete.

The survey link will be shared via email to the respondents, however request support and permission from your organisation to either share the link with previously incubated businesses or provide email addresses to myself to share link with directly. The data shared and information will only be used for research purposes and findings and recommendations will be shared with organisations to assist in developing effective strategies for their incubation programmes.

Any data gathered for this study that can be linked to the participants will be kept private and will only be disclosed with your consent or as required by law. I and Dr. Rob Venter my supervisor, will be the only ones with access to the data, protecting confidentiality. The findings may be printed in a scholarly journal and distributed in an unrestricted electronic thesis, but they will only be used for academic purposes. To protect the respondent's anonymity, the study's findings will only be presented as total statistics.

If you have any questions or concerns about the research, please feel free to contact Sibusisiwe Mweli (061 699 1010 or 2388166@students.wits.ac.za) or Supervisor: Dr Rob Venter (Robert.Venter@wits.ac.za)

Yours Sincerely,

Miss Sibusisiwe Mweli

Permission to use data granted:

Name:

Signature:

Date:

Name of organisation & Stamp:

b. ***Participant Agreement Form (Disclaimer before survey)***

Factors Influencing SME Performance Amongst Incubated Beneficiaries in South Africa

Good day, Business Owner

You are kindly requested to participate in a research study conducted by Sibusisiwe Mweli an MBA Student at the University of Witwatersrand, Johannesburg. I am conducting a research study on the Factors influencing SME Performance amongst previously incubated SMEs in South Africa.

1. PURPOSE OF THE STUDY

The purpose of this study is to investigate the factors influencing SME performance among incubated beneficiaries to gain a thorough understanding of these factors and to provide guidance in the development of effective strategies and policies to improve the long-term success of incubated SMEs.

2. WHY HAVE I BEEN INVITED TO PARTICIPATE IN THIS STUDY?

As the owner or manager of a SME that has undergone business incubation program, you have been invited to take part in this study. Your insightful knowledge of your incubation experience and the contribution that incubation made to your business will assist in providing a better understanding on the factors that have contributed to your sustained performance.

3. PROCEDURES

If you volunteer to participate in this study, you will be directed to a survey link to complete the SMEs sustained Performance Factors online questionnaire.

3.1 COMPLETION OF THE SURVEY

You will be required to complete the electronic survey which will take approximately 5 – 10 minutes to complete. There is however no time limit placed on the completion of the survey. There are no right or wrong answers.

3.2. DATA COLLECTION

After you complete the questionnaire, the electronic system will automatically record the data; your responses will be completely anonymous and confidential. The information will only be used for research purposes.

4. CONFIDENTIALITY

Any data gathered for this study that can be linked to you will be kept private and will only be disclosed with your consent or as required by law. Sibusisiwe Mweli and Dr. Rob Venter, the researchers, will be the only ones with access to the data, protecting confidentiality. The findings may be printed in a scholarly journal and distributed in an unrestricted electronic thesis, but they will only be used for academic purposes. To protect your anonymity, the study's findings will only be presented as total statistics.

5. PARTICIPATION AND WITHDRAWAL

It is entirely optional to take part in this study. You are free to stop taking part at any time and without any repercussions if you decide to do so for any reason. You can decline to answer any questions you don't want to answer and still participate in the study. Completing of survey will automatically provide consent to researcher to use data provided by participant.

c. *Research Instrument*

Section 1: Particpant Details											
1. The following questions will help me to find out more about you and your business. Where relevant place a cross (x) in the block that best corresponds to your answer other write down your response											
1.1	Have you successfully completed and incubation program	Yes		No							
1.2	How long have your business been in operation after completion of incubation program?	1-2 years		3-5 years		More than 5years					

Section 2: SME Capabilities - Dependent Variable						
The following section is focused on accessing the SMEs Dynamic Capabilties that have contributed to is sustained performance after the incubation period based on your experience	Likert Scale 1-5, where 1 represents "Strongly Disagree" and 5 represents "Strongly Agree"					
2.1 Sensing Capabilities : the capacity of a small or medium-sized business to recognize and comprehend changes, trends, and business opportunities (Teece,1997)						
Please rate on a scale of 1 to 5, where 1 represents "Strongly disagree" and 5 represents "Strongly Agree"	1	2	3	4	5	
a. SME closely monitors market trends and developments ?						
b. SME recognizes emerging market opportunities quicky?						
c. Effective customer feedback collection and analysis is conducted by SME?						
2.2 Seizing Capabilities : the capacity of a SME to seize opportunities as they arise and to do so quickly. It involves having the ability to decide strategically, allocate resources wisely, and act swiftly to take advantage of advantageous market conditions or business opportunities (Teece,1997).						
Please rate on a scale of 1 to 5, where 1 represents "Strongly disagree" and 5 represents "Strongly Agree"	1	2	3	4	5	
a. New identified market opportunities can be quickly taken advantage of by SME?						
b. New initiatives and srategies are successfully put into practice by the SME?						
c. Resources are effectively allocated to seize growth opportunities?						
2.3 Tranforming Capabilities : The capacity of a SME to modify its business procedures, operations, and strategies to satisfy shifting needs on the market or internally. It calls for the ability to effectively innovate, restructure, and implement organizational changes (Teece,1997).						
Please rate on a scale of 1 to 5, where 1 represents "Strongly disagree" and 5 represents "Strongly Agree"	1	2	3	4	5	
a. When market conditions change the SME adapts proactively?						
b.When required, our SME efficiently restructures its operations and processes?						
c. Seeks out new approaches to solving problems and allows for innovative solutions?						
2.4 Learning Capability : The capacity of a SME to gain new insights, knowledge, and skills to improve performance and competitiveness. It involves the organizational culture of ongoing learning, knowledge sharing, and employee development (Teece,1997)						
Please rate on a scale of 1 to 5, where 1 represents "Strongly disagree" and 5 represents "Strongly Agree"	1	2	3	4	5	
a. SME Culture promotes ongoing growth and learning?						
b. Knowlegde is effectively capture and disseminated within the SME?						
c. SME applies learnings and knowledge gained from past experience?						
2.5. Additional Information for better insight	Open -ended					
Please provide response in below space						
a. What are the other factors that you believe have contributed to sustained performance of your SME?						

Section 3: Innovation - Mediating variable					
The following section is focused on accessing the SMEs Dynamic Capabilties that have contributed to is sustained performance after the incubation period based on your experience	Likert Scale 1-5, where 1 represents "Strongly Disagree" and 5 represents "Strongly Agree"				
2.1 Innovation : The capacity to introduce novel goods and services that advance good causes and give consumers a competitive edge Please rate on a scale of 1 to 5, where 1 represents "Strongly disagree" and 5 represents "Strongly Agree"	**1**	**2**	**3**	**4**	**5**
a. Innovation is a key driver of sustained Performance for SME?					
b. The introduction of new goods or services enhanced the effectiveness of the SME?					
c. Innovation helps me to gain a competitive advantage against my competitors?					
d. Innovation is considered a strategic priority for long term sustainability for the SME?					

Section 4: Incubator Support & SME Performance					
The following section is focused on determine the degree to which incubator support is thought to contribute to sustained SME performance	Likert Scale 1-5, where 1 represents "Strongly Disagree" and 5 represents "Strongly Agree"				
4.1 Incubator Support : This refers to support that was received during incubation - i.e Training, Mentoring, Coaching, Facilities Please rate on a scale of 1 to 5, where 1 represents "Strongly disagree" and 5 represents "Strongly Agree"	**1**	**2**	**3**	**4**	**5**
a. Training from the incubator program improved the abilities and skills required for sustained SME performance.					
b. The access to networks and resources that enabled sustained SME performance was significantly facilitated by the incubator?					
c. The networking opportunities and teamwork provided by the incubator have improved SME's capacity to establish strategic alliances and partnerships.					
4.2 Additional Information for better insight Please provide response in below space	Yes or No				
a. Has the environment been supportive and assisted in sustained SME performance					
b. Do you believe the incubator support contributed significantly to SME sustained performance?					
c. How can incubator support be improved for SMEs to be more sustainable after incubation period	Open -ended				
d. What are the challenges that you continued to face after before and after incubation programe that might put your performance at risk in the future					

d. ***Ethics Clearance Certificate***

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School

Wits Business School Ethics Committee
Constituted under the University Human Research Ethics Committee (Non-Medical)

Ethics Clearance Certificate

Ethics protocol number: WBS/BA2388166/195
This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below)

This certificate is only valid if accompanied by formal permission from the relevant stakeholder(s).

Project title	Factors influencing SME performance amongst incubated beneficiaries
Investigator / Researcher	Miss Sibusisiwe Mweli
Nature of Project	MBA (Research Article)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed anonymity and confidentiality.
Issue Date of Certificate	2023/11/22
Expiry date	Date of submission of the project / research report
Chairperson	Dr Pius Oba +27 11 717 3976 +27 82 733 6587 pius.oba@wits.ac.za

Declaration by Researcher

One copy must be signed by the Researcher and returned to the Chairperson of the Wits Business School Ethics Committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I undertake to resubmit the protocol to the Committee.

Signature

28/11/23
Date: