

Developing a Framework to strengthen the Agility of South African Manufacturing Small and Medium Enterprises using Best Practices from Brazil, Russia, India, China and South Africa (BRICS) countries

Submitted in complete fulfilment of the requirements for the degree of

Doctor of Philosophy

(FACULTY OF COMMERCE)

RHODES UNIVERSITY

by

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JUNE 2025

**Developing a Framework to strengthen the Agility of South African
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FACULTY: FACULTY OF COMMERCE, RHODES UNIVERSITY

DEGREE: DOCTOR OF PHILOSOPHY

Abstract

The COVID-19 pandemic exposed significant vulnerabilities across global economies, prompting governments to re-evaluate the sectors essential for long-term economic stability and resilience. Although the pandemic had officially ended, its economic aftershocks continued to impede recovery, particularly in countries with pre-existing structural weaknesses. In South Africa, the manufacturing sector's prolonged decline further highlighted the importance of organisational agility (OA) as a strategic capability that enabled firms to anticipate, adapt to, and respond effectively to emerging disruptions. However, most existing OA frameworks were generic, operationally focused, and insufficiently tailored to the specific needs of manufacturing SMEs, thereby limiting their ability to leverage agility as a source of competitive advantage. Drawing on best practices from BRICS country datasets, this study identified cross-learning opportunities that strengthened OA adoption and repositioned agility as a central driver of resilience within manufacturing SMEs. The literature showed that the absence of sector-specific OA frameworks constrained firms' responsiveness to economic fluctuations and undermined their sustainability. Accordingly, the study examined the relationships between OA enablers and capabilities, organisational practices and processes, and the sense–response mechanisms that underpinned agile behaviour. While competitive advantage had traditionally been conceptualised through the Resource-Based View (RBV), which emphasised valuable, rare, inimitable, and non-substitutable (VRIN) resources, this study extended the theory by framing agility itself as a strategic resource that enhanced firms' capacity for renewal in turbulent environments. Existing policies treated OA as standard procedure but did not include systematic monitoring. To address this gap, the study proposed a sector-specific OA framework for manufacturing SMEs, informed by BRICS best practices, to strengthen resilience and long-term competitiveness.

KEYWORDS: Competitiveness, Enablers and capabilities, Manufacturing, Organisational agility, Performance, Practices and processes, Sense-response, Small and Medium Enterprises, Sustainable growth.

Declaration

I declare that the thesis, “*Developing a Framework to Strengthen South African Manufacturing SMEs' Agility with Best Practices from BRICS countries*”, submitted for the degree of Doctor of Philosophy at Rhodes University, is my work. I further declare that this thesis was not previously submitted to obtain a degree at this or any other tertiary institution and that all the sources used have been duly acknowledged.



Nokonwaba Andiswa Gcume

Acknowledgements

I wish to thank God for blessing me with the capacity, fortitude and grace to undertake and complete this journey.

To my supervisor, **Professor Tshidi Mohapelo**, thank you for empowering me, guiding my scholarly growth, and encouraging me to see this research through to completion.

My sincere gratitude goes to the **BRICS Research Institute**, led by **Professor Fulufhelo Netswera**, for the invaluable experience and for welcoming me into the BRICS RI Capacity Development Fellows Project.

I am equally grateful to the **National Institute of Human and Social Sciences (NIHSS)** for the financial support provided through the Durban University of Technology BRICS Research Institute (Project Grant No: BR122/1215). Your support created opportunities that strengthened both my experience and my research capabilities.

To the CEOs and executives across the BRICS countries who approved and participated in this study, thank you. Your willingness to share your insights, time, and enthusiasm has left an indelible mark on this work.

I honour the memory of my late mother, **Nonkululeko Prudence Gcume**, who began my academic journey. She cheered the loudest at every graduation, and today I say, *Mama, it is PhiniseD*. To my late brother, **Yamkela**, thank you for your prayers, belief in me, and your constant humour. This milestone is ours, Jama.

To my family, **O Dlamini**, thank you for sacrificing time, supporting me without complaint, and continuously believing in me. To my nephews and nieces: we run so that you may walk a little easier—your dreams are within reach.

Finally, to my friends, colleagues, and accountability partners across the BRICS countries who tirelessly supported me, *ndiyabulela*. Your encouragement sustained me throughout this journey.

Terms and Definitions

Terms	Definition
Agility	The ability of a firm or industry to bounce back after external environment turbulence.
Artificial Intelligence (“AI”)	A digitally controlled computer or robot that can perform tasks ordinarily associated with intelligent beings.
Best practice	A method or technique that is recognised as superior and most effective in achieving a particular outcome or goal within a specific context.
Competitiveness	The ability of individuals, organisations, or nations to compete effectively in a given market or industry.
Digital Transformation	Digital transformation integrates digital technology into all business areas, fundamentally changing how you operate and deliver value to customers.
4IR (4th Industrial Revolution)	An ongoing transformation phase in the digitalisation of the manufacturing sector. It considers how people and systems work through the integration of technology, analytics, human-machine interaction and improvements in robotics.
Framework	A structured set of concepts, guidelines, or structures that provide a basis for organising, understanding, and solving complex issues or problems within a specific domain.
Furniture	Movable objects or fixtures that serve various functional and decorative purposes in residential, commercial, or institutional spaces.
Industrial Revolution	An essential, robust, notable change in an economy, technology, and power-driven machinery provides the necessary transformation in various industries simultaneously.
Manufacturing	A process that entails converting raw materials, components, or parts into completed goods or products to meet a customer's expectations or specifications.

Mechanisation	The introduction and use of machinery and mechanical equipment have enabled the completion of several tasks previously done manually.
Modernisation	The mining sector adopts and integrates innovative procedures, technologies, and practices to improve productivity, efficiency, and safety.
Performance	The execution, achievement, or effectiveness of actions, tasks, systems, individuals, or entities in various contexts
Robotics	Technology that deals with the design, construction, and operation of robots
Small & Medium Enterprises	An enterprise that employs between 1 and 249 employees
Sustainable growth	The ability to maintain a certain trajectory of growth over time without increasing financial leverage.
Technology	The application of scientific knowledge, artificial intelligence, computer systems, or processes for business, industry, manufacturing, and other related purposes.

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CHAPTER 1

INTRODUCTION AND BACKGROUND

1.1. Introduction

This chapter provides the foundation of the study, reflecting the importance of SMEs in the furniture manufacturing sector, within the broader manufacturing industry and the dynamics that influence their performance. There has been growing interest in the role of SMEs in development, as they remain a focal point in policy debates, particularly in developing countries. SMEs play a pivotal role in addressing several economic development challenges that South Africa faces.

The SME sector has significantly contributed to poverty alleviation by creating jobs and fostering national prosperity (Leboea, 2017). Economically, in developing countries, SMEs positively impact employment growth, Gross Domestic Product (GDP), and poverty alleviation by 20-60 % and 38-77 %, respectively, and inclusive growth by 36-64 % on average (Fajarika *et al.*, 2024). Manufacturing has been the driving force behind sustained economic growth in many countries (UNDP, 2021). UNIDO (2020) further highlights that a key characteristic of the manufacturing sector is its high economic multipliers, stemming from its upstream and downstream links, value addition, and contributions to strengthening value chains. Growth in the manufacturing sector offers multiple macroeconomic benefits, serving as a key driver of economic development, particularly in middle-income countries. This sector fosters the expansion of services, enhances the utilisation of human capital, and strengthens economic institutions (Gumata and Ndou, 2020).

Moreover, manufacturing is a critical catalyst for innovation and competitiveness, substantially contributing to exports and productivity growth (Ududechinyere & Mbam, 2018). The sector also provides high economic multipliers through its integration with upstream industries, such as mining and agriculture, as well as downstream service sectors (Bhorat & Rooney, 2017).

Strengthening this sector could significantly boost GDP, with estimates suggesting an increase of over 15 % by enhancing the competitiveness of key industries.

Furthermore, manufacturing fosters shareholder value and facilitates increased economic activity through infrastructure modernisation (Hunter *et al.*, 2025). Its role in promoting inclusive growth is particularly critical, as it employs a diverse workforce without necessitating advanced degrees while offering higher wages than the service industry (Padhi, 2022).

At the beginning of the 21st century, agility and sustainability have become essential considerations within the global manufacturing sector. The shift in manufacturing approaches towards environmentally conscious procurement and organisational agility has profoundly impacted sustainability efforts, shaping firms' operational practices, innovation capabilities and procurement processes. Integrating sustainable practices into manufacturing represents a multifaceted challenge, requiring extensive research to understand the various factors influencing firms' sustainability initiatives (Thekkote, 2022).

This study is based on the premise that in Brazil, Russia, India, China, and South Africa (BRICS), manufacturing remains a leading economic sector (BRICS Economic Indaba, 2023). However, despite its importance, the manufacturing industry's contribution to South Africa's GDP and formal employment has declined, reaching its lowest level of 12 % by 2019 (South African Reserve Bank, 2020). The sector has faced persistent challenges, exacerbated by the negative effects of the COVID-19 pandemic (Anatan, 2021; Ardolino *et al.*, 2022), which further exposed vulnerabilities, including the industry's unpreparedness for crises, job losses, and business liquidations (Jacobs, 2025).

Countries across the BRICS vary in terms of enablers and capabilities, practices and processes, and response to external environmental influences that affect firm performance and growth (Qalati, Barbosa & Iqbal, 2022). Building an organisational agility framework for manufacturing SMEs in South Africa will be supported by best practices from other BRICS countries. Therefore, this qualitative study examined the key success factors that drive sustainable growth and performance for SMEs in the manufacturing sector. In addition to these challenges, the South African SME sector is experiencing an economic downturn due

to factors such as unreliable energy supply, high interest rates, sluggish economic growth, increasing competition, financial recovery post-crisis, and rising shipping costs. Technical inefficiencies within the manufacturing sector further exacerbate these difficulties.

The influx of imports and exports creates a highly competitive environment, compelling domestic industries to reduce expenses and improve operational efficiency (Mazorodze, 2020).

Given these mounting pressures, there is a need for strategic interventions to revitalise this critical sector. This need is even more urgent for manufacturing SMEs that are paradoxically expected to drive economic growth and employment creation (Zighan and Dwaikat, 2023) despite experiencing high failure rates. In manufacturing operations, organisational agility is essential, enabling firms to respond swiftly and effectively to market demands while minimising disruptions in supply chains (Barhmi, 2022; Arsawan, Hariyanti, Atmaja *et al.*, 2022). The increasing pressure on the manufacturing SME sector underscores the need for agility strategies beyond traditional competitive advantages.

This study is motivated by the high failure rate of small businesses and the declining performance of the manufacturing sector. SME failure rates across BRICS countries remain critically high, underscoring broader challenges in these emerging economies. Recent statistical data reveal severe SME failure rates in Brazil, India, China, South Africa, and Russia, where economic instability, regulatory constraints, and limited access to financing contribute to business closures (Singh & Lee, 2022; Yahaya & Nadarajah 2023; Zhao, Sum, Zhang *et al.*, 2006; da Silva, De Matos, De Oliviera-Gibbon *et al.*, 2025). In Brazil, the SME failure rate reached approximately 25 % in 2022, with significant declines in manufacturing performance (IBGE, 2022). Similarly, India's Ministry of MSME reports a surge in SME failures, particularly in manufacturing and services, driven by financial mismanagement and delayed payments (Singh & Bhat, 2021; Satpathy, Sahoo, Mohanty *et al.*, 2025). China's manufacturing SMEs have faced increasing crises, with failure rates of 22 % in 2022 due to global supply chain disruptions and rising production costs (Abdeldjalil, Samir, Mosab *et al.*, 2024).

South Africa's National Small Business Chamber (NSBC) has reported a sharp increase in manufacturing SME failures, approaching 28 % (NSBC, 2022). Russia's Federal State Statistics Service (Rosstat, 2023) has also documented a 19% increase in SME failures in manufacturing, exacerbating economic regression (Rosstat, 2023).

These statistics highlight a shared struggle among BRICS nations with high SME failure rates and declining manufacturing sector performance, posing a significant challenge to economic growth and stability. The lessons from the global COVID-19 pandemic emphasise the importance of enhancing the capacity of manufacturing firms to sense and respond to external environmental turbulences. The pandemic caused widespread business closures, job losses, stock market delisting, economic disruptions, and GDP contractions. This underscores the need for a resilient and agile SME manufacturing sector, equipped with robust enablers, capabilities, practices, processes and sense-response mechanisms to withstand economic shocks and ensure sustained performance.

1.2. Overview of Organisational Agility

Organisational agility refers to an organisation's ability to adapt and respond effectively to changes in its operating environment, whether internal or external. In today's dynamic business landscape, organisational agility has become increasingly important for organisations to stay competitive and thrive (Govuzela & Mafini, 2019; Nkurunziza, 2023; Bangura & Lourens, 2024). In manufacturing, agility is closely linked to a firm's ability to respond swiftly to the environment and address new challenges with innovative solutions (Alamsjah & Asrol, 2023).

The BRICS countries view organisational agility as a key pillar of sustainable and thriving firms. The speed of response to unexpected changes or disruptions in the business environment is a distinguishing factor of a successful organisation (Kolev, Dykes, Kang *et al.*, 2024). To achieve agility, firms must revise their response mechanism to external environmental factors (Bullough & Renko, 2013; Govuzela, 2018; and Govuzela & Mafini, 2019). In both developed and developing countries, OA remains a crucial component of sustainable, thriving firms (Appelbaum, Calla, Desautels & Hasan, 2017).

Furthermore, the role of OA in manufacturing SMEs extends beyond individual firm-level responsiveness to broader strategic imperatives, influencing national economic resilience. The impact of OA on manufacturing SMEs manifests in the proliferation of successful OA strategies, the development of capabilities, and improvements in response mechanisms.

Manufacturing is one of the priority areas for BRICS countries, along with agriculture, digital economy, green economy, and financial services infrastructure (BRICS Economic Indaba, 2023). This sector plays a critical role in job creation, economic growth, and the development of skilled labour, contributing to an improved quality of life (Arjun *et al.*, 2020). Several key factors determine organisational agility. These include an organisation's adaptability to environmental changes, flexibility to modify processes without bureaucratic red tape, quick decision-making, customer focus, collaboration, and supportive leadership (Sharma *et al.*, 2022; Sadigoklu & Ozorhon, 2024). However, there is a lack of clearly defined and sector-specific organisational agility frameworks in the manufacturing SME sector, necessitating an investigation into how these firms navigate external environmental changes.

Notwithstanding the varying sustainable growth factors and the environments in which these manufacturing SMEs operate, challenges that hinder SMEs' ability to sustain their competitive advantage go beyond industry dynamics and resources (Kiranantawat & Ahmad, 2023). For instance, in Brazil, the SME manufacturing sector has a greater chance of success in lean manufacturing, despite suffering the most from international competition (Da Rocha Junior & Gazoli de Oliveira, 2019). The ability of a firm to survive externally influenced, turbulent economic conditions is a key factor. BRICS member states vary in terms of enablers and capabilities, practices and processes, and response frameworks to external environmental influences that affect firm performance and growth (Qalati *et al.*, 2023). By drawing on insights from these BRICS nations, this study aims to develop an organisational agility framework tailored for furniture manufacturing SMEs in South Africa, incorporating best practices from comparative operating environments.

1.3. Research context

The survival rate of SMEs in South Africa is concerning, with 70-80% of small businesses failing within 5 years. In previously disadvantaged areas, only 1% of SMEs progress from employing 5 people to 10 (Bushe, 2019).

1.3.1. SME Landscape in South Africa

According to Abor and Quartey (2010), approximately 91% of formal businesses in South Africa are SMEs. The SME sector constitutes almost 98.5% of total firms in the economy, contributes approximately 28% more than international trends suggest to job creation, and generates 70% of employment (Small Business Institute, 2018). South Africa's furniture manufacturing sector, for instance, is dominated by SMEs, which account for over 90% of market participants (Fortune Business Insights, 2025). However, according to the South African Furniture Initiative (2022), the sector has been regressing for more than twenty years, with a further decline in export and local consumption. The COVID-19 pandemic exacerbated the situation faced by the furniture manufacturing sector. The challenges were characterised by minimal capital investment, an influx of cheaper imports, insufficient innovation and design skills, insufficient research, skewed consumer expenditure, poor skills development, and high startup costs. Since 2020, organisations have adjusted their furniture purchasing patterns by reducing office occupation due to the work-from-home policies and the adoption of new health and safety regulations. This shift has led to a higher demand for home-office furniture, presenting an opportunity for SMEs to innovate and realign their business models.

According to the Eastern Cape Socioeconomic Consultative Council (ECCSECC, 2021), South Africa has 2.4 million diversified SMEs. Govuzela *et al.* (2019) argued that SMEs contribute approximately 40% to overall economic activity, making their survival and sustainability crucial to national growth. The SME sector employs 47% of the South African workforce, with 13% in manufacturing. Liedtke (2019) notes that the sector contributes over 20 % to the country's Gross Domestic Product (GDP).

South Africa's diverse economy relies on key sectors such as finance (20 %), government services (18 %), wholesale and retail (13.2 %), manufacturing (13 %), mining (8 %), transport (10 %), personal services (6 %), construction (4.8 %), and agriculture (3 %). SMEs contribute between 52 % and 57 % of employment and 60 % of GDP (The DTI, 2023). According to Msomi *et al.* (2019), SMEs play a pivotal role in the country's sustainable growth. Statistics South Africa (2018) further confirms that SMEs contribute between 70% and 95% to GDP, highlighting their economic significance.

1.3.2. The Role of Small Businesses in Developing Countries

SMEs have emerged as components of economic development in both developing and developed economies (Diabate, Sibiri, Wang *et al.*, 2019). Previous research highlights the substantial role of SMEs in national economies (Ayandibu & Houghton, 2017). Pascual *et al.* (2019) emphasise that SMEs contribute to sustainable growth. Bayati & Taghavi (2007) argue that a strong SME sector can bolster the national economy by creating jobs, alleviating poverty, and promoting entrepreneurship, thereby boosting GDP. Globally, governments are prioritising the development of the SME sector to drive economic growth. Given their widespread geographical presence, SMEs influence grassroots economic activities more significantly than larger organisations (Das, Mukhopadhyay, & Suar, 2020). Achieving sustainable growth in this sector fosters stable, enduring national development (Bugwandin *et al.*, 2025). Enaifoghe and Ramsujar (2023) stress the fundamental importance of SME performance in national economies, while Govuzela and Mafini (2019) highlight their strategic role in shaping economic outcomes.

Wang (2016) identifies barriers that hinder SME growth, including limited access to business knowledge, financial constraints, ambiguous tax and trade regulations, a general unwillingness to scale operations, a lack of technology adoption, weak entrepreneurial networks, and insufficient policy advocacy. These structural barriers persist across economies, reinforcing the need for targeted interventions to enhance SME resilience and competitiveness. Despite these challenges, Brazil provides a compelling case study of SME-driven industrial innovation. With a strong manufacturing base and an effective start-up ecosystem, Brazil has successfully integrated public, private, and state-owned entities to support SME growth (OECD, 2020a).

Its extensive and well-coordinated network of business incubators and open innovation programs fosters collaboration between SMEs and larger enterprises, offering critical insights into organisational-agility-enhancing practices (Grama-Vigouroux & Roger, 2020).

Drawing on comparative lessons from Brazil and other BRICS economies, this study seeks to develop a robust, theory-led framework to enhance organisational agility within South African manufacturing SMEs, positioning the sector for long-term growth and sustainability.

1.4. Composition of SMEs across BRICS Countries

Across BRICS, SMEs are defined as follows:

- **Brazil:** SMEs employ between 10 and 249 employees, as defined by the Brazilian Institute of Geography and Statistics (IBGE, 2023). The threshold for annual turnover is \$963,623,000 as of December 2023.
- **Russia:** SMEs have less than 250 employees and an annual turnover threshold of \$203 million.
- **India:** SMEs employ between 11 and 250 people, with an annual threshold of \$12,022,900.
- **China:** The manufacturing sector allows up to 2,000 employees, with a minimum of 300.
- **South Africa:** Sectors are classified with different thresholds for turnover and employees. In the manufacturing sector, SMEs employ between 11 and 250 people. Their annual turnover is less than \$8,837,861 million.

The comparison of SME definitions highlights significant differences in classification across BRICS countries, underscoring the need for context-specific agility frameworks that accommodate diverse SME structures and regulatory environments.

The background presented ensures that the study's focus is well-defined and that the proposed strategies are applicable and transferable to other countries. Given these variations, this study explored how agility practices in BRICS SMEs influence their resilience and growth, providing a benchmark for South African SMEs.

The inclusion of global perspectives enhances the robustness of the framework developed in this study, ensuring its applicability in diverse market conditions.

1.5. Overview of the Methodological Approach

This thesis presents a comprehensive study aimed at strengthening organisational agility (OA) in manufacturing SMEs, focusing on the furniture manufacturing sub-sector in South Africa. The study sought to develop a sector-specific OA framework based on BRICS best practices, drawing on the resources, capabilities, and institutional expertise of these economies to inform strategies that enhance growth and competitiveness within the furniture manufacturing sector.

A fundamental aspect of OA in manufacturing SMEs is the role of organisational enablers and dynamic capabilities. This includes an examination of policies, regulatory, and legislative frameworks that influence OA, resilience, and growth. Policies set the strategic direction, regulatory requirements dictate compliance, and legislative frameworks establish the boundaries within which SMEs must operate. Understanding how these factors shape the agility of manufacturing SMEs is crucial for ensuring they can adapt swiftly to market dynamics and external shocks.

1.5.1. Investigating enablers and capabilities of OA

The study investigates how key organisational enablers, capabilities, and differing regulatory and policy landscapes across BRICS countries affect the agility of manufacturing SMEs, with a comparative analysis aimed at extracting best practices. The aim is to identify how enabling environments foster resilience, allowing SMEs to mitigate risks associated with regulatory constraints while effectively leveraging legislative support mechanisms to drive growth.

1.5.2. Investigating How Practices and Processes in Manufacturing SMEs Accelerate and Influence Agility

A key focus of this study is to investigate the internal mechanisms within manufacturing SMEs that drive agility. Organisational practices and processes, including lean manufacturing, digital transformation, supply chain responsiveness and workforce adaptability, are instrumental in fostering agility in a firm.

Manufacturing SMEs that embed agile methodologies in their operations can enhance their ability to pivot in response to market disruptions, technological advancements and shifting consumer preferences

This section examines the roles of operational flexibility, decision-making speed, and continuous improvement practices in strengthening OA. By conducting a thematic analysis of documented best practices from BRICS countries, this research identifies specific interventions that accelerate agility. Emphasis is placed on integrating technology, upskilling the workforce, and reengineering processes as levers of agile transformation. The study also highlights the importance of knowledge-sharing networks in fostering innovation and responsiveness.

1.5.3. Investigating How Sense-Response Mechanisms in Manufacturing SMEs Accelerate and Influence Agility

Sense-response capabilities enable manufacturing SMEs to proactively detect, interpret, and respond to changes in their operational environment. The ability to sense market shifts, technological disruptions, and supply chain vulnerabilities determines how swiftly organisations can reconfigure their strategies.

This research explores the effectiveness of sense-response mechanisms by examining case studies of SMEs that have successfully adapted to external pressures. The study considers the role of predictive analytics, market intelligence, and strategic foresight in enhancing organisational agility.

A comparative evaluation of sense-response mechanisms across BRICS countries provides insights into how SMEs develop and implement proactive strategies.

The study explores the role of leadership in promoting an organisational culture that prioritises real-time decision-making and strategic adaptability. Furthermore, findings highlight the necessity of cross-functional collaborations to ensure that response mechanisms are embedded across all levels of the organisation.

1.5.4. Developing a Theory-Led Best Practices Framework to Strengthen Organisational Agility in the Manufacturing Sector

This study integrates resource-based theory (RBT) and agility theory to formulate a comprehensive OA framework tailored to the furniture manufacturing sector in South Africa. While RBT underscores the importance of leveraging firm-specific resources to gain a competitive advantage, agility theory extends this perspective by emphasising the capacity to dynamically reconfigure resources in response to environmental shifts.

A qualitative research methodology was employed to explore enablers, capabilities, organisational practices, and sense-response frameworks of OA. The interpretivist qualitative data collection method was used, focusing on document reviews and in-depth interviews with industry stakeholders across BRICS countries. Thematic analysis and pattern matching were applied to identify recurring themes and validate findings. To enhance research robustness, triangulation was incorporated, and ATLAS-ti software was utilised for coding and analysis until data saturation was reached. Additionally, hermeneutics was applied during analysis to deepen the interpretative understanding of the data. The framework was subjected to a rigorous validation through the Delphi method, involving expert reviews to refine and substantiate its applicability. The Delphi approach ensured that the final framework aligns with real-world industry needs and can serve as a strategic tool for furniture manufacturing SMEs seeking to enhance their agility and resilience. By leveraging expert insights, the framework was iteratively improved to provide tangible recommendations that support policy formulations, operational excellence and long-term sustainability.

This study makes a noteworthy contribution to organisational agility by contextualising agility within the unique challenges and opportunities of the furniture manufacturing sector in South Africa.

By integrating insights from BRICS best practices, the study presents a structured framework for SMEs to navigate volatility, improve responsiveness, and sustain competitive advantage. Future research may explore the longitudinal impact of the proposed OA framework on SMEs' growth trajectories and resilience in an increasingly uncertain global market.

The findings of this study are poised to inform policymakers, industry leaders, and SME managers on the strategic imperatives for embedding agility as a core organisational capability.

1.6. Research Problem and Research Questions

Manufacturing firms require resources and the ability to withstand external turbulence. Despite this, there is a dearth of industry or sector-specific organisational agility (OA) frameworks, even though OA helps achieve and maintain a competitive advantage. This gap indicates the necessity for sector-specific frameworks that account for industry dynamics, ensuring applicability and effectiveness. Conceptualisation and sector specificity in existing OA frameworks lack clarity when applied to various industries (Walter, 2021; Msomi *et al.*, 2019). OA frameworks are often treated as standard operating procedures, rather than being monitored or evaluated. However, their content and structure vary significantly (Zhang & Sharifi, 2000).

Manufacturing SMEs, in particular, struggle in understanding the importance of OA (Zhang & Sharifi, 2000; Walter, 2021) and are not provided with any framework to facilitate cross-learning. The absence of a structured approach to OA adoption prevents SMEs from capitalising on agility-driven opportunities. Given the external environment's threat, it is necessary to strengthen OA for SMEs (Walter, 2021). Poor manufacturing performance is frequently attributed to inadequate risk management and a lack of firm-level agility (Herrington and Kew, 2018). Therefore, achieving competitive advantage requires implementing sector-specific strategies to navigate the external environment (Attafar Ghandehari & Momeni, 2012; Rajagopaul, Magwentshu & Kalidas, 2020; Arsawan *et al.*, 2022).

Agility systems contribute to market enhancement, access to finance, and meeting technological needs, while governance processes require business stability for effective lean manufacturing. Consequently, the absence of industry or sector-specific OA frameworks motivates this study to focus on furniture manufacturing firms, particularly examining their decision-making processes and agile approaches.

Wendler (2013) analysed and summarised twenty frameworks, classifying them into four groups: agile software development, agile organisations, agile workforce and agile manufacturing. This classification highlights the fragmented nature of existing agility frameworks, underscoring the need for a targeted model. Opting for the agile manufacturing domain enables the development of a comprehensive agility framework for the furniture sector, as it delves into sector-specific concerns and aligns with this study's focus.

There is therefore a critical need for a sector-specific OA framework for manufacturing SMEs in South Africa, particularly given the challenges they face. Despite SMEs' recognised importance in contributing to economic growth, the manufacturing sector has seen a significant decline in its GDP and employment contributions, exacerbated by unreliable energy supply, high interest rates, and the COVID-19 pandemic. When applied in the manufacturing sector, existing organisational agility frameworks lack clarity and specificity, resulting in a poor understanding of agility among SMEs. This deficiency hampers their ability to respond effectively to external environmental changes and market demands, resulting in high failure rates and inadequate performance.

The absence of a common framework for cross-learning further complicates the situation, as firms struggle to implement strategies that enhance resilience and competitive advantage. The criticality of agility in ensuring sustainability within SMEs is, therefore, an area requiring urgent academic and practical intervention. Given the pressing need for manufacturing SMEs to adapt to turbulent economic conditions, this study explores the key success factors that drive sustainable growth and performance.

The research aims to develop a comprehensive OA framework tailored for South African manufacturing SMEs by examining and comparing agility enablers and practices across BRICS countries. This framework is intended to facilitate better decision-making processes and agile approaches, enhancing the sector's ability to navigate challenges and capitalise on growth opportunities. The essence of strengthening OA for SMEs cannot be overemphasised. However, the absence of a framework comprising key enablers, practices, processes, and guiding principles based on best practices has the potential to exacerbate SMEs' fragility during disturbances.

Given this gap, this study proposes a framework for South African furniture manufacturing SMEs that draws best practices from BRICS countries. This approach ensures that the proposed model is informed by international insights while maintaining local relevance.

1.7. Aim and objectives of the Study

This study aimed to develop an all-encompassing framework for organisational agility in the furniture manufacturing sector of South Africa. Ultimately, the study sought to develop an OA framework by exploring sector-specific agility instruments in manufacturing SMEs and to influence them to think beyond resources and consider organisational agility if they are intentional about gaining a competitive advantage, averting negative external environmental turbulence, and attaining sustainable growth.

1.7.1. Objectives of the Study

The study seeks to achieve these objectives.

- a) To explore the critical enablers and capabilities that influence organisational agility of manufacturing SMEs in South Africa.
- b) To examine the effect of organisational practices and processes on manufacturing SMEs' agility.
- c) To investigate how sense-response in manufacturing SMEs accelerates and influences agility.
- d) To develop a theory-led best practices framework to strengthen organisational agility in the manufacturing SMEs sector.

1.7.2. Research questions

The study provided answers to the following questions:

- a) What are the critical enablers and capabilities that influence organisational agility of manufacturing SMEs in South Africa?
- b) What is the effect of organisational practices and processes on manufacturing SMEs' agility?
- c) How does sense-response ability in manufacturing SMEs influence agility?

- d) What constitutes a theory-led best practices framework to strengthen organisational agility in the manufacturing SMEs sector?

1.8. Research Propositions

Addressing each stated objective, the study provided valuable insights and enhanced the overall understanding of organisational agility in the manufacturing sector within the BRICS context.

1.8.1. Proposition 1 (P1): External Enablers – Policies, Regulations, and Legislative Frameworks

Proposition Statement: Policies, regulatory, and legislative frameworks significantly influence organisational agility, resilience, and growth in the manufacturing sector.

Rationale: This proposition examined the extent to which institutional factors functioned as enablers or constraints to OA. By evaluating the impact of policies, regulations, and legislative frameworks, this study has provided empirical insights that inform policymakers, industry stakeholders, and business leaders in developing strategies to foster an agile and resilient manufacturing sector.

1.8.2. Proposition 2 (P2): Internal Practices and Processes

Proposition Statement: The internal practices and operational processes of manufacturing SMEs play a pivotal role in enhancing and accelerating organisational agility.

Rationale: This proposition explored how internal mechanisms, including production workflows, innovation practices, decision-making structures, and resource management strategies, influenced OA. By identifying best practices, this study enhances understanding of how manufacturing SMEs can optimise internal processes to improve agility and responsiveness in dynamic market conditions.

1.8.3. Proposition 3 (P3): Sense-and-Respond Mechanisms

Proposition Statement: Sense-and-response mechanisms within manufacturing SMEs enhance their capacity to detect and adapt to internal and external environmental changes, thereby strengthening OA.

Rationale: This proposition focuses on the role of sensing capabilities, real-time data utilisation, and adaptive decision-making in fostering OA. By analysing how SMEs identify, interpret, and respond to environmental signals such as market shifts, technological disruptions, and supply chain uncertainties, this study aims to establish the critical success factors that contribute to organisational resilience and competitive advantage.

1.8.4. Proposition 4 (P4): Development of a Theory-Led Best-Practice Framework

Proposition Statement: A theory-driven best-practice framework that synthesises insights from external enablers, internal processes, and sense-and-respond mechanisms can provide a structured approach to strengthening organisational agility in the manufacturing sector. Rationale: This proposition seeks to integrate findings from the preceding propositions into a cohesive, theoretically grounded framework that offers actionable recommendations for manufacturing SMEs, policymakers, and industry practitioners. The framework serves as a strategic guide to enhance OA, ensure sustained growth, and improve adaptability in an increasingly volatile and competitive manufacturing landscape.

1.9. Rationale for the study

The study sought to develop an organisational agility framework for manufacturing SMEs in South Africa, based on best practices identified in other BRICS countries. While cross-learning results, the focus is on strengthening the South African manufacturing SME sector. This, therefore, shapes the nature of the information accessed.

1.10. Research contribution

(a) Economic impact and relevance

The manufacturing sector contributes significantly to economic development, boosting GDP, job creation, and poverty alleviation. However, the industry has faced substantial challenges, including declining contributions to GDP and employment, worsened by the Covid-19 pandemic and ongoing economic pressures such as high interest rates and unreliable energy supply.

This study is significant as it aims to develop a sector-specific framework for organisational agility that can help manufacturing SMEs navigate these challenges, ultimately fostering resilience and sustainable growth in a crucial sector of the economy.

(b) Addressing high failure rates

SMEs, particularly in manufacturing, experience high failure rates due to their inability to swiftly adapt to market changes and external disruptions. The study highlights the urgent need for enhanced organisational agility for these firms to respond effectively to environmental turbulence. By focusing on the furniture manufacturing sector, which has faced profitability challenges, this research seeks to identify key success factors that can improve the agility and competitiveness of SMEs, thereby reducing failure rates and promoting longevity in the market.

(c.) Learning from BRICS countries

The comparative analysis of agility enablers and practices across BRICS countries offers valuable insights and best practices that can be adapted to South Africa. By examining the policies, regulatory frameworks, and legislative environments that support manufacturing SMEs in these countries, the study aims to inform the development of a tailored OA framework. This approach also enhances the understanding of organisational agility and facilitates cross-learning among SMEs, promoting a culture of collaboration and shared knowledge.

(d) Policy implications

The findings of this study have significant implications for policymakers.

The research advocates re-evaluating policy approaches to include organisational agility as a core component of SME support initiatives, identifying gaps in existing policies and the lack of sector-specific agility frameworks. This shift could lead to more effective strategies that empower manufacturing firms to thrive independently, reducing their reliance on government support during crises.

In summary, this study is significant as it addresses critical issues facing the manufacturing sector in South Africa. It offers a framework for organisational agility to enhance resilience, reduce failure rates, and contribute to economic growth. It bridges theoretical gaps, informs policy development and provides practical insights for SMEs to navigate an increasingly complex and competitive landscape.

1.11. Contribution of the study to existing knowledge

This study aims to identify the enablers and capabilities that influence OA and growth in the manufacturing industry. A critical examination of policies, the regulatory environment, and legislative frameworks provides insights into their roles in shaping OA. It is imperative to understand how these external factors create either enablers or barriers to agility, influencing the industry's ability to respond to dynamic market demands. It is imperative to understand how these external factors create either enablers or barriers to agility, influencing the industry's ability to respond to dynamic market demands. Previous studies (Zitkiene and Deksnys, 2018; Yikilmaz and Cekmecelioglu, 2023; Sherehiy *et al.*, 2007; Jaafar *et al.*, 2025; Zighan and Dwaikat, 2023; Arsawan *et al.*, 2022b; Govuzela and Mafini, 2019) have assessed various OA frameworks; however, their inadequacies necessitate the development of an industry-specific OA framework. The study investigates the pre-existing state of OA in manufacturing and the impact of disruptive events, such as the COVID-19 pandemic. This analysis highlights a crucial gap in resilience; here, the pandemic exposed previously unknown vulnerabilities. While existing frameworks may have been responsive in certain contexts, his study provides evidence of how furniture manufacturing firms can enhance their agility in turbulent environments.

Addressing these objectives collectively contributes to a holistic view of OA by considering both external and internal factors. This approach provides practical guidelines for improving OA through strategic policy recommendations. The study's findings have significant implications for policy formulation, management practices and strategic decision-making, ultimately contributing to increased agility, resilience, and growth within the furniture manufacturing sector.

Manufacturing SMEs play a crucial role in economic development, but their ability to remain agile depends on their practices and processes. This section examines how internal organisational structures, decision-making processes, and operational strategies contribute to agility. By identifying key best practices, the study provides SMEs with actionable strategies to enhance agility and resilience. A comparative analysis of different SME operational models within BRICS countries offers cross-learning opportunities. The study further evaluates existing business process management frameworks, highlighting best practices that foster agility and contribute to competitive advantage.

An organisation's ability to sense and respond effectively to external changes is central to agility. This section explores the role of sensing mechanisms, such as market intelligence, technological adaptation, and stakeholder engagement, in shaping responsive strategies. By examining how manufacturing SMEs in BRICS nations employ sense-and-response mechanisms, the study provides insights into the roles of predictive analytics, scenario planning, and adaptive decision-making. This exploration emphasises the importance of proactive responses to mitigate risks and leverage opportunities in volatile markets.

Given the inadequacy of existing frameworks, this study proposes a new industry-specific OA framework tailored to the manufacturing SMEs in South Africa. This framework is grounded in Agility Theory and integrates best practices observed in other BRICS countries.

The study contributes significantly to the manufacturing literature by providing insights into how other countries achieve agility despite resource constraints and competition (Leong *et al.*, 2016; Wang, 2016). It further introduces an industry-specific OA framework that SMEs can adopt for sustained agility, resilience, and growth.

This framework is particularly relevant for industry practitioners and policymakers, as it offers a structured approach to embedding agility into organisational strategy. By leveraging lessons from BRICS countries, SMEs can adopt a more dynamic and responsive approach to business continuity.

1.11.1. Operational Contribution

The novelty of this study lies in its development of an industry-specific OA framework for furniture manufacturing SMEs in South Africa. Existing frameworks are often internalised as standard operating procedures (SOPs) without effectively enabling practical, adaptable agility. The COVID-19 pandemic revealed significant preparedness gaps within the industry, underscoring the need for a more resilient agility model. This framework facilitates cross-learning between BRICS countries by identifying agility enablers, practices, processes, and sense-response mechanisms. By incorporating best practices from various BRICS nations, the framework ensures that SMEs are equipped to handle external shocks and sustain growth.

1.11.2. Theoretical Contribution

While previous agility studies have predominantly relied on the dynamic capability theory and the resource-based view (RBT) theory, this study advances agility theory as a standalone theoretical construct. Gerhart and Feng (2021) argue that resources alone are insufficient for ensuring firm performance in turbulent environments. This study, therefore, asserts that agility must be positioned as a critical competitive advantage beyond mere resource capabilities.

This theoretical contribution broadens the discourse on competitive advantage by underscoring an organisation's ability to continuously renew and respond to external challenges. This perspective is crucial for policymakers and industry practitioners seeking to embed agility into organisational structures.

1.11.3. Methodological Contribution

The study adopts an interdisciplinary approach, integrating perspectives from manufacturing SMEs, supporting institutions, financiers, and policymakers. This broad methodological scope ensures a comprehensive understanding of OA within the BRICS nations.

The research employs qualitative methods within an interpretivist paradigm to explore the socially constructed nature of OA. The use of semi-structured interviews, document analysis, and the Delphi approach enhances the study's robustness and validity.

Triangulation across multiple data sources strengthens the credibility and trustworthiness of findings, ensuring a nuanced, contextually rich analysis.

Furthermore, the study's emphasis on longitudinal data from the BRICS research databases over seven years provides valuable historical insights into OA trends and adaptations. This depth of analysis ensures that the final OA framework is not only theoretically sound but also practically applicable across diverse manufacturing contexts. The validated framework is expected to serve as a vital tool for SMEs, challenging them to rethink organisational culture, align budgets with agility initiatives, and implement strategic changes necessary for sustainable growth. In summary, the study's methodological rigour, theoretical advancements, and operational contributions collectively enhance the understanding of OA in the manufacturing sector.

1.12. Significance of the Study

This study's significance lies in addressing critical gaps in understanding and enhancing organisational agility (OA) within the manufacturing sector, particularly for small and medium enterprises (SMEs) in South Africa. While extensive research on entrepreneurship, its processes, and national policy initiatives has been conducted, no comparative industry-specific studies have been conducted on the national OA framework for manufacturing SMEs, especially drawing on best practices from BRICS countries. This study pioneers new insights into OA for SMEs.

1.13. Scope of the study

This study concentrates on developing an organisational agility framework suitable for the furniture manufacturing SME sector in South Africa. Contextually, the manufacturing sector in South Africa is among the leading industries that generate jobs, following the services and automotive sectors. It contributes significantly to socio-economic development. The industry's business environment has evolved, presenting challenges that require targeted effort and sector-specific mitigation strategies. According to Msomi and Olarewaju (2021), the South African manufacturing sector faces difficulties, including SME coordination, access to finance, skilled labour, adherence to management accounting principles, and the adoption of lean manufacturing strategies, among others.

The study focused on enablers and capabilities, practices, processes and sense-response frameworks of OA. The above combines building blocks and the necessary systems for the agile manufacturing SME sector. Therefore, this study proposed solutions for furniture manufacturing SMEs and offered insights into addressing the challenges they face in South Africa, thereby improving sustainable growth and performance. This study used agility and resource-based view theories to develop a framework to improve the performance of the manufacturing SME sector and achieve OA.

Industry-specific (organisational-level) aspect of the furniture manufacturing sector is central to the study. Compared to the other nine sectors, this is because the furniture manufacturing sector recorded the lowest (1%) profit margin in 2021, according to Statistics South Africa (2021). The South African Furniture Initiative (2022) indicates that the furniture manufacturing sector has been regressing for more than two decades compared to other sub-sectors. The BRICS alliance allows countries to pool their markets, skills, and resource endowments to drive growth and competitiveness. According to WESGRO (2022), furniture manufacturing is one of the most labour-intensive sectors, and the development of SMEs has a significant impact on job creation.

The same report highlights a need for research and development in the furniture manufacturing sector due to its challenges. All these reasons justify my interest in undertaking this research/study.

1.14. Justification for the study

The manufacturing sector is selected because it is a fundamental pillar of economic growth, an essential contributor to GDP, and a source of resilience against economic shocks. It has a high multiplier effect due to its forward and backwards links to both downstream and upstream production sectors of the economy, and it contributes to exports and employment (BRICS Business Council, 2023). Manufacturing is considered a priority area for BRICS member countries (BRICS Economic Indaba, 2023). It is also an influential sector for economic growth through job opportunities, higher labour quality, improved skills, and higher living standards (BRICS Economic Strategy, 2015).

The SME manufacturing sector in South Africa has played an essential role in the country. It remains an industry of hope for the country in job creation and socioeconomic development (Ngo Ndjama & van der Westhuizen, 2024). The COVID-19 pandemic has exposed the manufacturing SME sector to several challenges, which are taking time to bring the businesses back to regular operation. Therefore, this requires additional reflection to improve and to consider their level of agility as a source of SMEs' competitiveness, looking beyond their resources and considering it as a source of competitive advantage.

The understanding/assumption is that an OA framework assists the manufacturing SME sector in tackling further performance regression. Secondly, the sector averts job losses and improves GDP contribution. Additionally, the study sought to enhance theoretical and operational knowledge of organisational agility in the furniture manufacturing SME sector, particularly through tested best practices from other BRICS member countries. The study's novelty is underpinned by its theoretical contribution, which moves competitiveness and sustainable firm growth beyond resources. This new knowledge forms the basis for further interrogation of other sources of competitive advantage beyond OA.

The final framework serves as the baseline for further research and the generation of industry-specific frameworks. It also creates additional knowledge and new frameworks.

Future dynamics provide an opportunity for critical review and potential framework adjustment. The OA framework is a novel tool that can improve the sustainable growth and performance of manufacturing SMEs in South Africa.

Finally, this study is essential because the generated OA tool can assist Policymakers, SME-supporting institutions, manufacturing SMEs, and national governments in improving the sector's performance beyond the current one-size-fits-all policy structure, fragmented support, and lack of coordination. Furthermore, the study also provides critical information to shape policy frameworks for the furniture manufacturing SME sector.

1.15. Thesis structure

The thesis is presented in eight chapters.

Chapter 1 introduces the topic, followed by an explanation of why this topic is of interest to the reader. The purpose of the study is presented, along with the research objectives, based on the background and research problem integral to the study. The chapter also includes the scope, rationale and limitations.

Chapter 2 presents the research context and scope of the study. It mainly focuses on the operating environment of manufacturing SMEs, justifying the need to strengthen OA in the furniture manufacturing sector. The analysis cuts across BRICS countries.

Chapter 3 presents the theoretical and conceptual frameworks underpinning the study, followed by a literature review supporting the study. A review of the field of manufacturing OA is presented, including an analysis of existing theories and empirical research findings. The document also outlines the critical elements associated with the manufacture of SME OA.

These include enablers and capabilities, practices, and processes that manufacturing SMEs use towards OA. Lastly, the study delves into sense-response frameworks applied in manufacturing SMEs that position them in the OA space.

Chapter 4: This chapter discusses the research methodology used in the study. The chapter describes the processes and methods used to achieve the study objectives. It explains the research philosophy, data analysis methods and provides justifications for each method. It further delves into the alignment of the manufacturing SMEs, agility setting, and common practices used in the manufacturing SME sector. In addition to describing standard definitions, this chapter also lays the foundation for understanding the fundamental concepts and principles common to this field.

In Chapter 5, the chapter focuses on data analysis, from document review, interviews and Delphi expert reviews. The analysis is linked to each research objective. The chapter includes a profiling frame for the panel of experts used in the study. It also narrates the requirements linked to literature, justification for each identified expert and their relevance to the study.

Chapter 6 presents the discussion and findings that provide direction for the recommended OA framework for furniture manufacturing SMEs in South Africa. After each round of reviews, the chapter provides a list of constructs under agreement. It also provides a table of responses received from each review round to ensure a transparent and trustworthy data collection process. The chapter further presents the results of the study and analysis process for the development of the proposed OA framework. This is where the achievement of research objectives is confirmed, aligning with the chapters and findings.

Chapter 7 presents the conclusions, recommendations and implementation framework of the study. It also highlights future research areas.

1.16. Conclusions

This introductory chapter laid the basis for the study. It gave the project overview, research problem, the ensuing research aims and objectives, and the corresponding research questions. Subsequently, the study was justified, and the thesis structure was described.

CHAPTER 2

CONTEXT AND SCOPE

2.1. Introduction

As the operating environment becomes increasingly volatile, organisational agility has become an essential tool for sustaining competitive advantage. This chapter dissects the interplay between organisational agility enablers and capabilities, practices and processes, and sense-response frameworks within organisations. By analysing these components, the study aims to examine the underlying factors that contribute to an organisation's ability to sense and respond to change. This literature review explores organisational agility in the manufacturing sector, with a specific focus on furniture manufacturing SMEs in South Africa through an interpretive approach. It offers an overview of evidence, theories, and research, particularly in the field of organisational agility. The chapter also identifies trends and patterns crucial to cross-learning among BRICS countries. It encompasses theoretical, empirical, and conceptual frameworks, emphasising the organisational agility paradox, enablers, capabilities, practices, processes, and sense-response mechanisms. Despite support from various entities, SMEs struggle to achieve agility, thereby affecting their resilience to external turbulence. The furniture manufacturing sector cannot be thoroughly explored without first discussing the operating environment in which it operates: the broader manufacturing sector, the SME landscape, the BRICS bloc, and the research propositions.

2.1.1. Dynamics and Complexities of BRICS

The population dynamics of the BRICS member states show that India is the fastest-growing country, with up-and-coming growth prospects. The population of India is growing rapidly, ranking it as the second-most populous country in the world, with 1404.9 million people (IBGE, 2025). This is followed by China, with 1408.5 billion people.

Brazil is the largest country in South America and the seventh most populated country globally, with a population of 212,812,405 (IBGE, 2025). Russia has a population of 146.3 million people in 2023 (IBGE, 2025).

China spans over 9.5 million square kilometres, making it the fourth largest country after Russia, Canada, and the United States. Between 2002 and 2022, South Africa experienced positive year-on-year population growth (Statistics South Africa, 2023). The current South African population is 62.4 million (IBGE, 2025). In examining the GDP contributions of various countries, Brazil's GDP per capita is approximately USD 1,606.08 billion. SMEs play a significant role in Russia, accounting for about 44% of value added in the business sector, or around USD 1,775.55 billion. Between 2011 and 2021, Russia's GDP breakdown showed that agriculture contributed about 3.8%, the industry sector contributed 33.21%, and the service sector dominated with 53% (Gurkov and Filinov, 2022).

Looking at India, the country is projected to grow by 7.5%, reaching approximately USD 3,177.92 billion, the highest globally (Raghavan, 2023). Meanwhile, China's GDP has grown significantly, currently standing at USD 17,458.04 billion, with a notable 7% increase in 2015 (OECD, 2018a). In contrast, South Africa's contribution is the lowest among the BRICS countries at USD 418.02 billion. Despite challenges posed by the COVID-19 pandemic, South Africa's manufacturing sector accounted for 13% of GDP and nearly 50% of total export income in 2020. However, the manufacturing industry declined by 5.9%, resulting in a negative impact of 0.7 percentage points on GDP growth (Statistics South Africa, 2021).

Empirical studies conducted in South Africa focused more on other subject areas, such as SME performance and causes of failure (Noshad, Amjad, Shafiq *et al.*, 2019; Bushe, 2019; Nkoana and Mashamaite, 2025; Nach and Ncwadi, 2024; Ngwenya, 2022; Sibiya *et al.*, 2023, Wang, 2016; National Small Business Chamber, 2022).

Little attention has been paid to developing a framework to ensure sustainable growth and performance of SMEs in the manufacturing sector (Mofokeng, Chinomona & Mafini, 2023). This oversight has a ripple effect on job creation, GDP, and sector growth, given the notable and critical contribution that SMEs make to economic development. An example of this contribution is that 98.5% of formalised businesses in South Africa are SMEs, which contribute significantly to employment (Vuba, 2019). SMEs Despite this importance, there is a lack of comprehensive frameworks that address internal drivers, such as innovation and sustainability (Mofokeng *et al.*, 2023), as well as external factors, such as policy alignment and environmental practices.

Recent initiatives, such as the National Integrated Small Enterprise Development (NISED) strategy, aim to support MSMEs through targeted interventions but do not specifically focus on manufacturing sector sustainability (Government of South Africa, 2023). The Economic Reconstruction and Recovery Plan emphasise local production but lacks detailed strategies for sustainable SME growth in manufacturing (The Presidency of South Africa, 2021). Therefore, while efforts are underway to enhance overall SME development and industrialisation policies in South Africa, more research is needed to develop tailored frameworks for sustainable growth in the manufacturing sector.

The South African SME survival rate statistics are dismal: 70-80% of small businesses fail within 5 years. According to SME South Africa (2020), South Africa has 700,000 SMEs, which contribute between 52 and 57% to the GDP. 61 % of total employment in SA is from the SME sector (Ngwenya, 2022). In previously disadvantaged areas, only 1% progress from employing 5 people to 10 (Bushe, 2019). According to Msomi *et al.* (2019), SMEs play a crucial role in the development and growth of the country. This makes SMEs the bedrock of the economy. In this context, this study aims to identify factors that strengthen organisational agility in the manufacturing SME sector, thereby influencing sustainable growth and performance. The study examined the obstacles facing SMEs, the prospects of the South African government's economic initiatives aimed at promoting the development of small businesses, and how these initiatives affect SME performance.

2.2. Overview of Organisational Agility

Agility in the manufacturing sector is closely linked to an organisation's ability to proactively respond to environmental challenges with innovative solutions (Arsawan *et al.*, 2022a). To achieve agility, firms must revise their response mechanisms to external environmental factors (Rawashdeh, Abdallah, Alfawaer *et al.*, 2024; Govuzela, 2018; Govuzela & Mafini, 2019). In developed and developing countries, organisational agility (OA) is a crucial pillar of sustainable and thriving firms (Desalegn *et.al*, 2024).

The speed of response to unexpected changes or disruptions in the business environment is a distinguishing factor for successful companies (BRICS Information Centre, 2017).

Hence, the impact of OA on manufacturing SMEs is the proliferation of successful OA strategies, the development of capabilities, and the establishment of response mechanisms.

Manufacturing is considered one of the priority areas for BRICS member countries in agriculture, digital economy, financial services infrastructure, and green economy (BRICS Economic Indaba, 2023). It is a living labour force, improvement of skills, and standards of living, an influential sector for economic growth through job opportunities, increased quality labour, and improved skills and standards of living (BRICS Economic Strategy, 2015).

2.2.1. Domains of organisational agility

The OA domains have four perspectives: agile software development, agile organisation/enterprise, agile workforce, and agile manufacturing (Wendler, 2013).

2.2.1.1. Agile manufacturing

Agile manufacturing is a concept that originated in manufacturing, where it was used to ensure adaptability and resilience in the face of external influences (Appelbaum, Calla, Desaulles, & Hassan, 2017). The domain assumes that increasing production should improve agility. In agile manufacturing, products are designed quickly, technologies are used, close cooperation between suppliers and corporate partners is maintained, employees are trained, and the entire organisation is involved in the process to respond proactively to changes in the market or satisfy customer requirements (Gunasekaran, Subramanian and Yusuf, 2018; Gunasekaran, 1998; Gunasekaran, Yusuf, Adeleye *et al.*, 2019).

These are critical factors in creating an agile manufacturing environment. Introducing agile manufacturing requires a change in technologies and processes and the organisation's culture and purpose (Walter, 2021). Without this reorganisation, agile procedures cannot flourish.

Creating an agile manufacturing environment requires several organisational elements, such as flexibility of organisational culture and purpose, an empowered open network of teams, technologies, tools, and a faster turnaround strategy (Ali & Wasim, 2022). This means that the workforce itself must be agile (Wendler, 2013). Agile manufacturing aims to meet customers' needs while reducing costs and maintaining quality, making it suitable for organisations operating in competitive environments where even minor improvements in

performance and quality can significantly improve competitiveness and reputation. In addition, it allows organisations to adapt to a changing environment or a change in customer requirements, ensuring that they remain competitive and at the forefront of their customers' minds (Andreoni, Chang, Labrunie *et al.*, 2021).

Agile manufacturing gives consumers access to new and customised products, a wide range of options, and fast delivery times in modern manufacturing. According to Andreoni and Anzolin (2019), small-scale local teams characterise agile manufacturing. Its advantage is that firms can respond rapidly to customer demands, quickly provide different products, adapt products to changing demands, and provide personalised solutions that would not otherwise be possible if large and distant manufacturing operations were running (UNIDO, 2021a). In addition, the three OA domains are generic, which means that they do not relate to a particular industry and have elements that can be applied to the manufacturing industry. Each of the other three perspectives of OA domains focuses on a specific area within the company. For example, an agile workforce pertains to human capital only, an agile organisation pertains to operations, and agile software development pertains to systems (Wendler, 2013).

The study only focused on the manufacturing sector. After all, manufacturing is the fundamental pillar of economic growth, an essential contributor to GDP, and a source of resilience to economic shocks. It has a strong multiplier effect through its forward and backwards links to production sectors; it contributes to exports and employment (BRICS Business Council, 2023). Manufacturing is one of the priority areas for BRICS member countries (BRICS Economic Indaba, 2023). It is also an influential sector for economic growth through job opportunities, higher labour quality, improved skills, and higher living standards (BRICS Economic Strategy, 2015).

No consideration is given to the shortcomings of each domain when applied separately because they may have shortcomings in other sectors. Hence, this study focuses on agile manufacturing. Additionally, manufacturing has generally been the driving force for sustained and sustainable economic growth in most countries (UNDP, 2021).

UNIDO (2021a) noted that a critical characteristic of the manufacturing sector is its high economic multipliers, driven by value addition and its contribution to strengthening value chains. Growth in the manufacturing sector has several macroeconomic benefits.

South Africa has the lowest GDP contribution and the highest unemployment rate of 34%, exacerbated by the highest job losses in the manufacturing sector among BRICS member states (World Economic Forum, 2020a). The International Finance Corporation (2019) asserted that manufacturing sectors can generate substantial employment multipliers across value chains due to their naturally high employment multipliers. Signe and Johnson (2018) affirm that labour absorption is derived from manufacturing. By absorbing, diffusing, and developing modern technology, manufacturing contributes to advanced technology and innovation (Teece, Oeteraf & Leih, 2016).

In addition, it supports and facilitates the growth of national skills and capabilities capacities and the establishment of a knowledge-based economy (Muduli, 2016). For example, the automotive sector supports several related sectors, including parts suppliers, transport, insurance, maintenance, and the tourism industry, which is associated with recreational activities such as leisure trips and car rallies. However, manufacturing sectors also have low employment multipliers across value chains and tend to be more labour-intensive, which can lead to lower wages and fewer opportunities for advancement.

2.2.1.2. Agile software development

There has been a recent shift towards agile software development and manufacturing methods in the manufacturing industry.

As a result, they aim to enhance a software development team's agility and its ability to respond to technology changes on time (Kettunen, 2009). This process depends on the skills of its artisans, the flexibility of its systems, and the self-organising nature of its teams. It is guided by twelve (12) principles, and at the core is customer satisfaction. When firms misinterpret agile principles and values, they assume agility is achieved simply by adopting them.

This misunderstanding can lead to poor implementation in agile software development. In these circumstances, there is a high probability of ineffective execution. Agile software development can be successful if firms take the time to understand and implement the principles correctly. When done properly, agile software development can increase customer satisfaction, improve quality, and accelerate delivery times (Tucker, 2025; Suvvari, 2020). As Evangelist-Roach (2020) noted, an agile workforce adapts quickly to changing customer, employee, and market needs.

2.2.1.3. Workforce agility

In increasingly volatile, fast-changing organisational contexts, employee adaptability has become a critical determinant of organisational performance. According to Tessarini and Saltorato (2021), workforce agility is the ability to respond quickly and effectively to a competitive, unpredictable business environment. To be agile, employees need to be proactive, flexible, adaptable, resilient, and competent. These can be improved through learning and training, organisational structure, human resource management, and culture. By leveraging employees' knowledge and skills, the workforce can achieve greater agility. The key to strengthening workforce agility is a commitment to employee learning and performance management (Evangelist-Roach, 2020). Das *et al.* (2023) assert that better customer service, quality improvement and learning are benefits of workforce agility.

Two vital indicators of workforce agility are intelligence and competency. However, these factors remain external and do not include interpersonal skills or soft skills, such as technological competencies, emotional intelligence, employee participation, psychological empowerment, and psychological predisposing factors, including job-related, anticipation, risk-taking, planning, risk-taking, active listening, learning from past mistakes, trust, and job self-efficacy. Sherehiy and Karwowski (2014) echo the earlier work on behaviour skills, stating that skills and behaviours characterise an agile workforce.

Building an agile manufacturing environment depends fundamentally on the human element, particularly employees' capacity to adapt to changing production demands. Ali and Wasim (2022) stated that to implement agile manufacturing, a highly flexible, highly skilled, cross-trained, empowered, and engaged workforce is necessary.

An organisation's workforce agility can provide it with a competitive advantage. Several studies examined this notion (Muduli & Pandya, 2018; Faster Capital, 2024); Pacor, 2025; Sherehiy & Karwowski, 2014).

These studies identified three characteristics of agile workforces: proactivity, adaptability, and resilience.

2.2.1.4. Agile organisation/enterprise

Agile organisations are team networks operating in a people-centred culture and are capable of rapid learning and decision-making, guided by a clear sense of purpose to co-create value for all stakeholders (Khokhar, 2024; Pettersson *et al.*, 2023). This framework fosters collaboration among teams and enhances responsiveness to market changes, enabling organisations to thrive in dynamic environments (Idrissi *et al.*, 2022). Organisations can quickly and efficiently restructure strategy, structure, processes, people, and technology using an agile operating model to create and protect value (Aghina *et al.*, 2018). Consequently, agile organisations provide a decisive competitive advantage by combining stability with agility and adaptability, making them more resilient to volatility, uncertainty, complexity, and ambiguity (Faster Capital, 2025).

As Aghina *et al.* (2018) explained, agile organisations or enterprises are characterised by stable backbone elements that slowly evolve and support dynamic capabilities that can quickly adapt to changing circumstances. Additionally, agile organisations quickly mobilise, drive agility, and make rapid decisions (Buchanan and O'Connell, 2023). The response is like a living organism.

In response to pressure, agile organisations demonstrate greater strength than mere robustness; they show improved performance as pressure increases (Muduli and Pandya, 2018). In addition, such companies achieve higher revenue growth, lower costs, and a more engaged workforce by simultaneously improving customer centricity, accelerating time-to-market, and reducing costs.

While agile organisations have many advantages, they also have disadvantages to consider (Tessarini and Saktorato, 2020; Cardenas, 2024; Lutwama, Dlulane, Pillay *et al.*, 2024).

One downside of agile organisations is that they can be less stable than traditional organisations. This is because they constantly change and evolve to adapt to their environment. This can make it difficult for employees to keep up with changes, leading to frustration and turnover.

Additionally, due to their decentralised nature, agile organisations can be easier to manage and control (Annosi, Martini, Brunetta *et al.*, 2020). Lack of agile experts, traditional organisational culture, reluctance to adopt agile methods, lack of management commitment, Abrar *et al.* (2020). Secondly, they have limited capacity to foster organisational learning in self-managed, team-based firms due to the scarcity of research on routinised individual actions and adaptation. This, however, is addressed by the recommendations, which place training and development across all four objectives, making it a key feature of the organisational agility framework.

2.3. Frameworks of organisational agility

Existing organisational agility frameworks lack clear definitions and conceptualisations, and are not specific to sectors (Msomi *et al.*, 2019). This is because they are designed to be applicable across diverse industries (Alvedalen and Boschma, 2017; Msomi *et al.*, 2019). Researchers have categorised agility frameworks into three main types: a) agility enablers and capabilities, b) organisational agility practices and processes, and c) the sense-response framework of OA (Zitkiene and Deksnys, 2018; Appelbaum, Calla, Desaulles *et al.*, 2017).

2.3.1. Enablers and Capabilities

Agility enablers and capabilities encompass processes and activities accommodating changes in customer demands and market conditions. These are rooted in agile manufacturing principles and encompass specific abilities related to adaptability and competence (Shafiri & Zhang, 2001; Harraf *et al.*, 2015; Charbonnier-Voirin, 2011).

2.3.2. Supporting policy, regulatory, and legislative frameworks

Supporting policy, regulatory, and legislative frameworks enables SMEs to thrive (Botha *et al.*, 2020). However, there are criticisms regarding the effectiveness and implementation of such frameworks, particularly in developing contexts.

Some scholars argue that these frameworks can be overly bureaucratic, hindering rather than helping SMEs (Mehta & Singh, 2023).

Legislative and regulatory frameworks have enabled countries like Russia, China, and India to become forerunners in SME development, underscoring the need for a framework that facilitates cross-learning on organisational agility.

Critics, however, point out that what works in one country may not be directly transferable to another due to differing cultural, economic, and political contexts (Kumar & Raghavan, 2023; Kumar & Singh, 2023). The impact on the manufacturing SME sector can be substantial if successful organisational agility (OA) strategies, capability-building, and response mechanisms are effectively disseminated.

Brazil's policies, including *Sistema S*, *Simplex Nacional*, and *SEBRAE* (the Brazilian Micro and Small Business Support Service), aim to implement government policies effectively, enhance labour force skills, and create a simplified tax and regulatory regime (Jones & Lee, 2018). Conversely, Rodriguez and Carvalho (2022) argue that these policies can disproportionately benefit larger SMEs, thereby neglecting micro-enterprises that often lack the resources to meet compliance requirements.

In Russia, the Skolkovo initiative supports innovative SMEs through incubation partnerships with educational institutions and funding. However, critics are suggesting that reliance on state-driven initiatives can stifle entrepreneurial spirit and innovation if not balanced with market-driven incentives (Petrov & Sokolov, 2020).

India prioritises entrepreneurial ecosystems and allocates resources to strengthen these policies (Botha *et al.*, 2020). Despite this, Mehta and Singh (2023) warn that bureaucratic inefficiencies and corruption can undermine these efforts, making it challenging for genuine entrepreneurship to flourish.

China's open-door policy encourages foreign investment, with tax and incubation policies facilitating rapid results (Naradda-Gamage, Ekanayake, Abeyrathne *et al.*, 2020).

There are, however, criticisms regarding the long-term sustainability of such an investment-driven model, with concerns that it could lead to environmental degradation and social disparities (Li & Chen, 2021).

The policy and regulatory environment in South Africa is generally favourable for SMEs across various sectors, with the manufacturing sector benefiting from incubation facilities and training centres. Policies are designed to prioritise funding for entities such as TVET colleges and university graduates, based on needs assessments and government-set poverty metrics (Sibiya & Kele, 2019).

Nevertheless, some scholars have argued that these priorities may not adequately address the unique challenges faced by existing SMEs, particularly in developing regions (Moyo & Mpofu, 2024; Nkoana and Mashamaite, 2025). Regulatory authorities' focus on SMEs stems from the need to ensure compliance with regulations and to enable policies in production operations. However, Nieuwenhuizen (2019) argues that the focus on compliance can sometimes create an environment in which SMEs feel burdened by excessive regulations, deterring their ability to innovate and compete.

While supportive policy and regulatory frameworks are essential for fostering SME growth, critical perspectives highlight the importance of tailoring these frameworks to local contexts, ensuring equitable access, and balancing regulatory compliance with the need for innovation and agility.

2.3.2.1. Innovation and Technological Advancement

2.3.2.1.1. China

China is a leader in technological advancement in furniture manufacturing, making significant investments in automation and cutting-edge materials (Xiong, Yue & Wu, 2022). Its research and development initiatives have led to breakthroughs in various manufacturing areas, including electric cars and 5G technologies (Xiong *et al.*, 2022). China heavily invests in research and development, especially in fields such as artificial intelligence and renewable energy (Statista, 2024). The furniture industry is leveraging advancements in design and production methods, adapting to changing customer tastes and materials (The Furniture Forum, 2024).

2.3.2.1.2. India

India is gaining recognition for its innovations in computer-aided design and manufacturing, leading to improvements in furniture production (Mandurnekar, 2024).

The country is also notable for its thriving software and IT services sector, with governmental support for research and development across various industries (Jalote & Natarajan, 2019). SMEs in India are increasingly embracing technology, particularly in software development and pharmaceuticals (Johnson & Lee, 2017). The focus on innovative furniture design aligns with global trends, especially emphasising sustainability (Mandurnekar, 2024).

2.3.2.1.3. Russia

Russia has a rich history of innovation, particularly in aerospace and defence technologies. However, it struggles to broaden its technological advancements beyond these areas (Tokarev & Litvinova, 2021). The furniture industry is adopting new technological ideas but often relies on conventional production methods, which may hinder its competitive edge (Ivanov & Sokolov, 2018). While efforts are underway to implement innovative technologies, Russia's SMEs, especially in furniture production, have been slow to adopt them, resulting in limited innovation (Doroshenko *et al.*, 2021).

2.3.2.1.4. Brazil

Brazil has made significant investments in innovation, especially in the agribusiness and aviation sectors (da Silva, Matos, Gibbon *et al.*, 2025). The country's SMEs are progressively integrating technology, particularly in aerospace and agribusiness (Costa & Almeida, 2021). Despite advancements in agricultural technology, Brazil's automotive and other industries still trail in high-tech manufacturing. The country struggles to catch up. Additionally, innovation efforts in Brazil may generate impacts; however, these impacts do not translate into better financial performance due to the risky and expensive nature of innovation (De Oliveira *et al.*, 2018). Technology integration within SMEs is crucial for maintaining competitiveness in the global market. The Brazilian manufacturing sector's use of Intellectual Property (IP) strategies, including invention patents, utility models, industrial designs, and trademarks, is positively associated with its export performance (Zucoloto *et al.*, 2017).

Da Silva Barbosa-Gama and Bonamigo (2024) have noted that sustainable lean manufacturing significantly improves environmental, social and operational performance in Brazilian automotive companies. This is a strategy South Africa can follow.

2.3.2.1.5. South Africa

South Africa is making strides in areas like automotive production and renewable energy (Mkhize & Dube, 2020). The country is also working to enhance its technological and design capacities in furniture production, though it may take time to meet international standards. Investment in technology across industries such as mining and automobiles is significant; however, South Africa faces challenges in advancing more comprehensive technological development (Mkhize & Dube, 2020).

Funding research and development initiatives also presents challenges. Although Brazil's furniture industry may not be as innovative as others, current designs and environmentally friendly methods are becoming increasingly important (Costa & Almeida, 2021). Along with employing local materials, South Africa's SMEs concentrate on design innovation and sustainability.

2.3.2.2. Manufacturing flexibility

According to a survey conducted by Kaur, Kumar, and Kumar (2017), SMEs have little need for more understanding of the manufacturing flexibility concept, and its use is still in its infancy. It was discovered that, while large and small businesses use manufacturing flexibility, they differ; Kaur *et al.*, (2017) focus on the adoption strategies required to achieve this flexibility. While large organisations emphasise technology competence, sourcing strategies, and integration practices to gain flexibility, SMEs emphasise entrepreneurial orientation and flexible human resource practices (Dey, Sharma and Pandey, 2019).

2.3.2.3. Access to finance

According to Msomi and Olarewaju (2021), SME owners in South Africa have identified the lack of start-up capital and difficulty accessing financial support as significant challenges to the survival and growth of their businesses. Although SME business owners may raise most or all the initial capital on their own, such capital would generally be limited.

Growth-oriented SMEs seeking to expand would need external sources of finance, such as banks and venture capital (Hashi and Krasniqi, 2011).

Most small firms typically have more access to external funding for various reasons. Even in developed economies, the loan market is incomplete and narrow, failing to meet the financing needs of small enterprises. This limitation may be exacerbated by regulatory frameworks that favour larger companies, further narrowing the financial options available to small businesses. Small businesses may experience credit rationing due to information asymmetry in financial markets. Consequently, larger companies are better able to provide collateral and demonstrate a reliable track record than smaller ones, and banks are more likely to grant them loans.

This can create a cycle in which small businesses struggle to grow due to limited access to necessary funding, thereby reinforcing their inability to provide sufficient collateral for future loans. As a result, small businesses are less likely to obtain financing and to provide the necessary collateral.

Fowowe (2017) acknowledges the documented importance of finance to firm growth. It has been found that small firms face crucial obstacles to growth, encountering more considerable challenges in obtaining financing than larger firms (Wang, 2016). This discrepancy raises important questions about the equity of financial systems and whether they effectively support the diverse needs of businesses of all sizes. Access to finance is essential for firms because it helps them expand operations, foster innovation, and invest in production facilities and new personnel (Surya, Menne, Sabhan *et al.*, 2021).

Most studies have focused on sustainable growth or the performance of SMEs in specific geographic areas, thereby influencing change in those provinces. While these studies provide valuable insights, they often overlook broader systemic issues that affect SMEs nationally or globally. Limited scholarly literature has focused on organisational agility and other performance-support alternatives (entrepreneurial bricolage, management accounting practices, etc.) and often bypasses organisational agility as a strategy to drive sustainable growth and performance in SMEs.

Due to its size and growth potential, China has attracted substantial foreign direct investment (FDI), particularly in manufacturing SMEs (Zhang, 2022).

Other BRICS nations have also sought foreign investments to boost their manufacturing sectors, with varying degrees of success. For instance, while China leads in high-tech FDI, other countries, such as India, have succeeded in specific sectors, demonstrating that targeted strategies can yield better outcomes (Shi and Zhu, 2021).

India's FDI inflow into manufacturing has been growing, aiding SMEs, particularly in the automotive and pharmaceutical (Sharma, 2024). Conversely, Russia's FDI inflows into manufacturing are limited compared to those of other BRICS nations (Ershova, 2017).

Brazil attracts FDI in manufacturing, particularly in agribusiness and aerospace (Latam, 2024).

South Africa receives FDI in the automotive and agro-processing sectors, which benefits SMEs (Higuchi, Barnes, Black *et al.*, 2024). However, challenges remain, as Russia, Brazil, and South Africa have struggled to attract significant FDI to their SME manufacturing sectors (Nach and Ncwadi, 2024). SMEs are essential for job creation and have significant potential to contribute to economic development and growth. However, access to finance hinders SME growth in most countries. The International Finance Corporation (IFC) estimated that 40% of formal SMEs in developing countries have an unmet annual need of \$5.2 trillion (World Bank, 2022). This figure highlights the urgent need for innovative financing solutions.

2.3.2.4. Ease of barriers to market entry

China has a complicated regulatory framework but typically supports manufacturing and offers SMEs several incentives (Noshad *et al.*, 2019). The Chinese government has initiated programmes to enhance domestic manufacturing capabilities, including financial support schemes that provide tax incentives and grants to SMEs (Made in China). India has been implementing various measures to make doing business easier for SMEs. Initiatives such as "Make in India" and "Startup India" focus on improving the ease of doing business and providing financial assistance to small enterprises (Singh and Jaiswal, 2018; Tripathy and Dastrala, 2023; Jalaja, 2022). The 2024 Budget further emphasises this commitment by allocating significant funds to support SME growth and sustainability (Oxyzo, 2024). South Africa identifies its products under the "Proudly South African" brand.

Russia's laws can be complicated, and there is little specific help available for small and medium-sized manufacturers. The regulatory environment in Russia poses challenges for SMEs, including bureaucratic hurdles and limited access to financial support (Jomon, 2024; Aitchison, 2014; Yukhanaev, Fallon, Baranchenko *et al.*, 2015).

This complexity can deter potential entrepreneurs from starting new ventures, as the perceived difficulty of navigating regulations may outweigh the potential benefits of entering the market (Kovalenko, Zavyalova and Krotov, 2023; Basit, Gharleghi, Batool *et al.*, 2024).

Brazil has been working to streamline regulations and promote the growth of small businesses.

The Brazilian government has introduced reforms to simplify regulatory processes for SMEs, such as reducing bureaucratic requirements and offering tax incentives (Noshad *et al.*, 2019; Calijuri and de Oliveira, 2023). While these reforms are commendable, there are still concerns about their effective implementation and whether they truly reach the intended beneficiaries (Wilkins *et al.*, 2022; Almeida & Ramos, 2022).

Although South Africa has worked to strengthen the regulatory framework, there are still problems. Despite initiatives to support SMEs, challenges such as access to finance and high compliance costs persist, hindering the growth potential of small businesses in the country (Noshad *et al.*, 2019; Moyo, Ndhlovu & Khumalo, 2022). Critics argue that without addressing these underlying issues, regulatory improvements may have a limited impact on actual business growth (Majozi, 2024).

Within the BRICS countries, regulatory environments differ significantly and are subject to regular changes. China and India have supportive policies and financial incentives for SMEs (Naradda *et al.*, 2020). These countries have recognised that facilitating access to finance and reducing bureaucratic barriers are crucial for stimulating innovation and economic growth. In contrast, South Africa and Russia continue to experience more challenges in this regard (Sibiya and Kele, 2019; Matikiti, 2024).

SMEs must manage these obstacles, given differences in legal landscapes and business conditions across the BRICS nations (Azam, 2019). Moreover, SMEs in these regions must adapt proactively to regulatory changes, which can be resource-intensive and complex.

Studies by various authors (Dube, 2024; Noshad and Amjad, 2019) highlight the varying degrees of bureaucratic challenges faced by SMEs across BRICS nations, emphasising the need for tailored regulatory approaches.

Additionally, Rahman et al. (2025) and Huang and Kumarasinghe (2024) discuss how the regulatory frameworks in China and India have successfully fostered innovation, contrasting them with the more restrictive environments in Russia and South Africa. Lastly, Wani and Dhimi (2017) note that despite the regulatory hurdles, opportunities still exist for SMEs to leverage government incentives in Brazil and South Africa.

2.3.2.5. Strategy, structure, and processes

The SEDA Annual Report (2019/2020) revealed that the approach to SME support is one-size-fits-all, resulting in duplication of efforts. SME support was fragmented, thereby hindering their ability to access a central database to ascertain the status of assistance extended to them. Yoo, Choo, and Lee (2018) have noted that SMEs and large companies should prepare long-term growth strategies to strengthen their technological innovation capability necessary to overcome these adverse circumstances and pursue sustainable growth. According to Govuzela *et al.* (2019), a firm's survival depends on its business performance, which is fundamental for economic growth. External environmental turbulence can hinder this performance if agility is not part of the organisational strategy.

2.3.2.6. External support

To maintain their niche and competitive advantage, firms in the BRICS countries have made strides without a clear guiding framework. Current trends in BRICS economies are such that SMEs account for most businesses worldwide and significantly contribute to job creation and global economic development (ECCSECC, 2021). According to the World Bank (2020), they account for about 90% of businesses and more than 50% of employment worldwide.

Brazil is a developing country, rich in natural resources and with a strong focus on manufacturing and the supply chain. The income inequality gap has been steadily closing due to recent financial tightening strategies, with anticipated long-term prosperity (OECD, 2020b).

Brazil has a well-functioning, innovative start-up ecosystem. The Brazilian start-up ecosystem comprises many public, semi-public, and private organisations that collaborate effectively (Cohen & Hochberg, 2021).

Brazil has a strong and effective network of business incubators and accelerators, and some promising open innovation programs connect start-ups and small companies with large companies requiring specific technology solutions (Ziakis, Vlachopoulou, Petridis, 2022; Dahl & Pedersen, 2022).

The central local development policy, at the federal level, has focused on business clusters. Studies have noted positive effects of cluster participation on the performance of local SMEs, including job creation and wage increases (Figal Garone *et al.*, 2015). In Russia, manufacturing production measures the output of companies in the industrial sector of the economy. Industrial production is the most important sector, accounting for 55 % of total production.

New orders have grown the fastest since April 2019, driven by stronger demand conditions amid a soft decline in external demand since the beginning of 2022 (World Bank, 2023). It has a large middle class that is growing and evolving with improved spending patterns, offering a significant domestic market for foreign products and services (IBGE, 2023). India has taken several steps to improve trade, including proposals for a new and inclusive BRICS portal (Kumar & Arora, 2015; De Sousa Filho, Santos, De Santa Ribeiro *et al.*, 2024).

India encourages trade within BRICS, pushing member countries to import goods from one another rather than Europe. With the help of the BRICS Bank, India has significantly improved the state of industrial bases and digitised education by supplying technology to Brazilian and South African schools (Perwez *et al.*, 2016). India initiated the Global Executive Development Program, which prepares South Africa's labour force.

India is regarded as the larger brother of BRICS. Given that both share a coastline, India plans to collaborate with South Africa to increase security at a cost that can be shared (Kumar & Singh, 2023).

The industrial sector in India is shifting toward automation and process-driven production, driving up demand for sophisticated gear and equipment (Gupta & Jauhar, 2023).

India has many advantages over China, such as a young labour force, a large pool of engineers, lower wages, and a significant local market for manufactured goods (Civildaily, 2023).

Given that China is the world's leading manufacturing destination and is experiencing peak labour shortages and exponential wage increases, these considerations become even more crucial (Udeagha & Ngepah, 2023).

Prior to the COVID-19 pandemic, the manufacturing sector in India accounted for 16–17% of GDP and is expected to grow at one of the fastest rates (Economic Times, 2023).

The foundation of India's manufacturing sector was built on the machine and tool industries. Modern technology has spurred creativity; digital transformation is crucial for gaining an advantage in a fiercely competitive market (Lu & Shaharudin, 2024). The Indian government and businesses agree that the manufacturing industry must advance to its latest stage. Due to its rare-earth metal reserves accounting for 90 % of global reserves, China holds a competitive edge over rivals (Zhao, Sum, Qi *et al.*, 2006).

Factors promoting industry growth include easy access to labour and low costs. Globally, China remains the largest exporter (UN Comtrade Database, 2023). In other countries, SMEs show sustained growth and are consistently the largest employers in both the developed and developing world (Epede & Wang, 2022). This is contrary to the reality in South Africa; currently, small and medium enterprises are experiencing business stagnation, with declining bottom lines and less contribution to employment growth (Sitharam & Hoque, 2016).

2.3.2.7. Access to information

The dynamic and evolving landscape of the manufacturing sector necessitates a clear understanding of the enablers and capabilities that support organisational agility (OA), resilience, and sustainable growth.

Policies, regulatory and legislative frameworks constitute key structural conditions that either enable or constrain growth trajectories in manufacturing enterprises. According to Manzoor, Wei and Sahito, (2021), small business owners, particularly in rural settings, frequently lack essential business management knowledge and access to finance. These factors critically influence organisational growth. This shortcoming impacts not only operational efficiency but also the ability to remain agile and responsive in fluctuating economic and environmental contexts.

Furthermore, many SMEs are unaware of the technical or environmental specifications and regulatory requirements necessary for market compliance, thereby silently hindering growth. This is particularly salient in rural and semi-urban settings, where regulatory literacy remains low, and enterprises are geographically isolated from critical information networks. Georgieva (2020) also emphasises that SME success is pivotal to enhancing national competitiveness and reducing both unemployment and regional economic disparities.

The study, therefore, positions regulatory readiness and policy alignment as core enablers of organisational agility in manufacturing SMEs. A thorough investigation of the policy landscape exposes systemic gaps and enables the formulation of policy-responsive growth strategies tailored to the manufacturing sector. Agility in the manufacturing sector does not emerge spontaneously; day-to-day operational practices and strategic process configurations shape it. In manufacturing SMEs, practices such as lean production, quality control, supply chain optimisation, and rapid prototyping influence how quickly and effectively organisations can adapt to internal and external changes. This research explores these practices through empirical fieldwork, focusing on how their implementation or absence affects the trajectory of agility. The underlying hypothesis is that structured, context-sensitive processes act as catalysts for building responsive, adaptive systems within SMEs.

Moreover, the role of knowledge transfer, digital transformation, and industry-specific benchmarking practices should be critically analysed to understand their relationship with agility acceleration. The importance of such practices was echoed during the 2023 BRICS Summit, where agility and competitiveness in manufacturing were central themes.

Discussions from the BRICS Manufacturing Forum emphasised the need for resilient practices that support regional manufacturing hubs. Discussions during the forum were centred around specific focus areas.

Panel 1: Building Resilient Industrial Value Chains and Regional Manufacturing Hubs – Lessons from BRICS. A key takeaway from this panel is that localising supply chains and standardising processes improve responsiveness and reduce dependency risks, as Gcume and Mohapeloa (2025) stated.

- **Panel 2: Green Industrialisation and the Circular Economy.** This panel fosters that integrating sustainable processes is not only environmentally sound but also a lever for operational agility. A study by Morceiro (2018) promotes this principle.
- **Panel 3: Funding Mechanisms Necessary to Support Industrial Value Chains, Enabling Greener Manufacturing.** The panel advocated for the elements as key enablers of resilient manufacturing hubs. This indicates that access to innovation funding drives technological agility and supports cleaner production transitions.

These panels underscore the global imperative to reconfigure practices toward agility-enhancing processes, particularly within emerging economies. Sense-response capability: the ability to detect, interpret, and respond to change is foundational to organisational agility. In turbulent environments, the agility of SMEs is closely linked to their capacity for rapid sensemaking and timely action. This study examined how manufacturing SMEs monitor market signals, customer behaviour, technological shifts, and regulatory changes. The investigation included the role of feedback loops, digital dashboards, early warning systems, and leadership responsiveness. It is critical to note that sense-and-response mechanisms also reflect SMEs' cultural readiness to adopt agile mindsets. This research assessed how organisational culture, communication flow, and leadership decision-making contribute to or hinder this responsiveness.

The BRICS Manufacturing Forum emphasised the importance of knowledge-sharing platforms and cross-sectoral cooperation, which directly link to sense-response agility:

- Development of a collaborative platform for manufacturing technology exchange and market intelligence (Ogujiuba, Eggink and Olamide, 2023) aims to reduce latency in decision-making through access to real-time information.
- BRICS PartNIR (Partnership on the New Industrial Revolution) Advisory Group supports technology diffusion, empowering SMEs with the tools to respond proactively (Balasubramanyam and Wei, 2015).

These developments suggest that institutional frameworks, such as BRICS cooperation platforms, can substantially strengthen SMEs' sense-response capabilities.

Building on the preceding objectives, the study aims to integrate theoretical insights and empirical evidence into a robust best-practices framework to enhance OA in manufacturing SMEs. The framework is grounded in complex adaptive systems theory, contingency theory, and dynamic capabilities theory, creating a multidisciplinary approach that captures the nuances of agility in resource-constrained environments. The OA framework is envisioned not just as an academic exercise but as a practical roadmap for SME development agencies, policymakers, and industry leaders.

The final organisational agility framework proposed in this study aims to bridge the gap between theoretical discourse and real-world application, advancing the manufacturing sector in developing economies both academically and practically. By aligning each research objective in the study with empirical insights, theoretical foundations, and global best practices, this section provides a comprehensive and academically rigorous blueprint for understanding and strengthening organisational agility in manufacturing SMEs. The integration of BRICS summit discussions adds a global dimension to the local challenges, reinforcing the relevance and timeliness of the study.

2.3.2.8. Access to Infrastructure

SMEs cannot afford the required infrastructure, particularly subsidised business premises with the appropriate equipment. Subsidised co-working spaces can house only a few and are inaccessible due to the SME's current location (SEDA Annual Report, 2019/2020).

China has made significant infrastructure investments, as seen by the size of its port, road, and rail networks (KPMG, 2024).

These investments have helped enhance manufacturing processes (Dinlersoz & Fu, 2022). India focuses on improving its transportation and logistics infrastructure, although challenges remain in energy supply and transportation (World Bank, 2023). Certain regions of Russia may have antiquated infrastructure, posing logistical challenges (Dmitry, 2021).

Although there are still some infrastructure issues in Brazil, improvements are underway (Economic Times, 2023). Infrastructure in South Africa varies across regions, affecting logistics (Zhang *et al.*, 2023).

Each BRICS country has differing levels of infrastructure that can affect manufacturing activities (Reed, 2015). China's substantial investments in logistics and transportation are evident in its recent growth rates for infrastructure investment, which increased by 8.8 % year-on-year in Quarter 1 of 2024 (KPMG, 2024). India is attempting to upgrade its infrastructure but faces ongoing issues with energy supply and transportation systems (Prajapati, Guo, Cai *et al.*, 2025). While Russia may lack modern logistic systems, it does possess a well-developed infrastructure for heavy industry (Udeagha & Ngepah, 2023).

Despite existing challenges, South Africa and Brazil plan to enhance their infrastructure development efforts (Leal, 2024).

2.3.2.9. Access to Markets

According to a survey conducted by Deloitte (2013) on local market attractiveness, respondents felt that the South African manufacturing sector is currently in survival mode owing to various factors, including the small size of the domestic market, policy uncertainty, high input costs, and a limited skills base, along with the threat of cheap imports (Deloitte, 2013). It is essential for the future of the manufacturing sector that the local market be competitive, growing, and dynamic (World Bank, 2020). Respondents indicated that the size of the local market undermines their ability to compete against global peers, especially in neighbouring African markets (Saah *et al.*, 2023).

Recent studies emphasise that the South African manufacturing sector's contribution to growth and employment has declined for decades, highlighting a need for strategic interventions (Driver, 2024).

The competitiveness of local manufacturers has historically relied on traditional factors such as cheap electricity and low-cost labour; however, rising administered prices and wages without corresponding productivity increases have eroded this competitive edge (TIPS, 2022). Moreover, the COVID-19 pandemic has exacerbated these challenges, forcing many companies into survival mode and accelerating trends toward automation and efficiency improvements (Sharma, Adhikary and Borah, 2020).

The South African manufacturing sector must adapt to these pressures by investing in advanced technologies and enhancing worker safety measures (Saah, Mbohwa & Madonsela, 2023).

2.3.2.10. Access to skills and technology

Bugwandin and Bayati (2022) elaborate on the deficiency in attracting proficient human resources within production and operations management. Consequently, most SMEs suffer from a dearth of essential skills. Furthermore, Ndlovu (2019) asserts that SMEs often need a diverse range of competencies necessary to operate their production and operational systems efficiently. Mashariva *et al.*, (2022) highlight various internal challenges confronting the SME sector, which are pivotal to their prosperity.

These encompass managerial inadequacies, persistent capital shortages, marketing and personnel issues, a deficiency in management expertise, financial oversight, cash flow management, costing, and trade proficiency.

Lekhanya (2016) underscores the significance of small business managers cultivating management skills to sustain their enterprises. This sentiment is echoed by Mashariva *et al.*, (2022), who underscore the criticality of managerial competencies for the survival of SMMEs. Isenberg (2011) emphasises the importance of small businesses in nurturing proficiency across all managerial functional domains. Ndlovu (2019) further notes the lack of financial management acumen and market comprehension among South African small businesses. Mashariva *et al.*, (2022) contend that numerous SMMEs are overseen by managers who need more management information, skills, and experience. Challenges hindering the growth of SMEs include managerial inexperience, unfamiliarity with the industry among business managers, and a scarcity of business skills (Kindstrom, Carlborg & Nord, 2024).

Entrepreneurial success hinges upon possessing appropriate skills. World Bank Group (2020) stressed that the South African Government recognises skills and competencies as pivotal drivers for SME growth. Inter Observers (2024) aligns with this view, citing low levels of education, insufficient training, and a lack of business skills as contributing factors to the capacity shortfall and poor business efficiencies among SMEs.

Effective organisational functioning increasingly depends on leaders who can guide teams through complexity and change. As defined by Kjellström *et al.*, (2020), leadership skills encapsulate the process of influencing and inspiring others toward a shared objective.

Without adept leadership skills, entrepreneurs and their enterprises are likely to stagnate. Influential small business leaders adeptly gather pertinent information and promptly make informed decisions. This proactive stance helps SMEs seize unforeseen opportunities that benefit their growth. SMEs' proactive engagement and market acumen are integral to sustaining their ventures.

Concurrently, leaders must empower employees with resources and autonomy to address challenges and capitalise on opportunities as they arise. Ametefe *et al.*, (2025) identify a deficiency in leadership skills as a notable challenge SMEs face.

A positive attitude is a defining attribute distinguishing success from failure, as Romero (2024) posits. Passionate entrepreneurs strive for excellence in their endeavours, for their products, services, customers, and staff. Cultivating the right attitude is paramount for small business owners striving for success.

2.3.3. Organisational Practices and Processes

Organisational agility practices and processes identify vital practices necessary for an agile organisation to navigate change effectively. These practices include mastery of human resources, cooperative practices, and customer value creation (Charbonnier-Voirin, 2011).

2.3.3.1. Environmental and Sustainability Practices

The manufacturing sector has faced several challenges recently due to geopolitical uncertainty, supply chain disruptions, changing consumer preferences, and increasing regulatory scrutiny (Institute of Global Dialogue, 2024; Sun, Cao, Liu *et al.*, 2024).

During the COVID-19 pandemic, the demand for furniture was significantly reduced (Liu, Lu, Shen *et al.*, 2023). However, several positive factors, such as rising global demand, technological advancements, and increased investments in automation and digitalisation, continue to influence the market, and the outlook for manufacturing remains positive (Basit *et al.*, 2025).

Although the COVID-19 pandemic created significant obstacles for manufacturers, those who invested in the digitalisation and automation of their processes are best positioned for long-term success (Xue, Zhao & Tan, 2022).

For the manufacturing sector to survive the current crisis and become more resilient, there is a need for an effective balance between cost pressures and a strong focus on quality (Nnaji, Benjamin, Eyo-Udo *et al.*, 2024).

The ongoing geopolitical tensions have also prompted organisations to increase their investments in supply chain risk management (World Manufacturing Foundation, 2022). For instance, a Deloitte survey found that over 70 % of chief procurement officers reported an increase in supply chain risk over the past year (Deloitte, 2023). Furthermore, companies are rethinking their supply chain strategies by adopting tactics such as onshoring and nearshoring manufacturing to mitigate risks in global supply chains (Young, 2024).

Integrating advanced technologies such as blockchain and artificial intelligence (AI) is essential to improving supply chain transparency and resilience (World Manufacturing Foundation, 2022).

Small and medium enterprises (SMEs) often face operational and strategic challenges that require them to seek support beyond their internal capabilities. According to Lekhanya (2016), SMEs depend on external support to successfully carry out their business initiatives. Competitive threats and vulnerability to adverse environmental changes hinder SMEs' sustainable growth and performance. Concurrently, SMEs can leverage the external environment to their advantage by responding quickly to the demands of fast-changing markets.

Limited access to information is a significant problem that SMEs face (Kraja and Osmani, 2015). Other challenges include an unfavourable business policy environment, high input costs, limited access to markets and financial services, inadequate access to skills and technology, and workplace health and safety issues (Lekhanya, 2016; OECD, 2022). The economic climate, political and legislative environment, and high start-up costs negatively affect the growth and performance prospects of SMEs (Cunningham, Williams & De Beer, 2014).

Among the factors that could have affected the manufacturing sector in 2023 is the adoption of advanced technology, such as artificial intelligence, robotics, and the Internet of Things (IoT), which can potentially improve overall efficiency and productivity while reducing costs (Salkin *et al.*, 2018).

Furthermore, analysts believe that sustainability and environmental awareness will become critical trends, as more investors and consumers prefer companies that prioritise these values and develop eco-friendly products (Haldane *et al.*, 2023). Within the BRICS bloc, geopolitical factors such as trade tensions and government policy changes could also impact the manufacturing sector, with the Russia-Ukraine war having a significant effect (Sun *et al.*, 2024).

The global economic and political environment presents both challenges and opportunities for the manufacturing sector.

However, companies can succeed and enhance their long-term market position with the right managerial strategy and high flexibility (Young, 2024). China has made efforts to improve environmental practices but still faces challenges in managing pollution and resource consumption (Zhang *et al.*, 2023).

Sustainability practices can vary across countries, with some SMEs adopting green manufacturing processes. China is addressing environmental concerns while promoting sustainable manufacturing practices (Li & Chen, 2023). India is also adopting sustainable practices in its small businesses (Campos-Blazquez, Martic-Garcia and Cardenas-Munoz, 2024). Russia faces challenges in implementing sustainable manufacturing practices (World Bank, 2020).

Brazil is working on sustainability initiatives in agriculture and other sectors (Economic Times, 2023). South Africa is adopting sustainable practices across industries, including agro-processing (TIPS, 2022). Overall, sustainability practices vary between BRICS countries.

2.3.3.2. Integration practices

Although considerable knowledge exists about the importance of sustainability and the growth of small and medium companies, this understanding remains imperfect, and many questions remain about the entrepreneurial ecosystem/framework in the regional manufacturing sector. Regions in rural settings had a comparative disadvantage in manufacturing and mining (ECCSECC, 2017; Tsujimoto, Kajikawa, Tomita *et al.*, 2018). Start-ups and SMEs depend more on larger companies in their business ecosystems and, due to internal growth constraints, are more susceptible to market failures, policy inefficiencies, and inconsistencies across different areas (OECD, 2018b).

Currently, South African SMEs operate in a fragmented manner, with one supporting institution or stakeholder not knowing what the other is doing, resulting in duplication of efforts and difficulty in measuring expected growth. Therefore, the study focused on the underlying factors driving the pace of growth and performance of SMEs in the manufacturing sector. According to Choi and Lim (2017), previous studies have noted that SMEs previously suffered from fiscal and regulatory constraints due to their limited access to finance and the lack of an effective institutional structure.

2.3.4. Sense Response Frameworks

Sense-response frameworks involve establishing a cohesive structure based on consistent processes and actions to enable swift responses to changing conditions (Zitkiene & Deksnys, 2018; Achoki, 2023). Effectiveness measures for organisational agility often include cost, speed, quality, and scope (Maximova, 2021). These measures help gauge the organisation's ability to respond effectively to environmental changes and uncertainties.

The Sense Response Framework emphasises the crucial interrelation between sensing and responding, necessitating organisational alignment. Effective detection enables the identification of opportunities and threats, which are essential for informed responses.

Alignment between sensing and responding capabilities facilitates the optimisation of organisational resources for capturing business opportunities (Bornay-Barrachina *et al.* 2023).

The level of agility required by organisations varies with the dynamic nature of their environment; organisations operating in turbulent environments need agility more urgently (Baškarada & Koronios, 2018). Environmental dynamism is influenced by both internal conditions and external business environment turbulence (Baškarada & Koronios, 2018). Despite this, previous discussions on Information Systems (IS) and organisational agility have often overlooked the alignment between sensing and responding capabilities enabled by Enterprise Systems (ES) and environmental dynamism within the framework of factors explaining organisational agility. Several studies have developed models focusing on organisational agility as the ability to sense environmental changes and respond effectively, emphasising processes such as sensing changes, responding in a timely and cost-efficient manner, and learning from experience to enhance organisational competencies (Trinh, Molla, & Peszynski, 2012).

2.3.4.1. Sensing capabilities

The sense dimension of the framework emphasises the organisation's ability to perceive and comprehend external drivers, such as technological advancements and market dynamics, thereby necessitating upskilling and reskilling initiatives (Bornay-Barrachina *et al.*, 2023). This process consists of awareness and competence, as discussed below.

2.3.4.2. Awareness Capabilities

In organisational sense-response frameworks, "awareness" refers to an organisation's capacity to perceive and comprehend external changes or threats (Achoki, 2023). This includes an understanding of market changes, technological advancements, and other environmental factors that could affect the organisation's knowledge of market changes, technological advancements, and other environmental factors that could impact the organisation's understanding of market changes, technological advancements, and other environmental factors that could impact the organisation's operations and strategic objectives. Zitkiene and Deksnys (2018) emphasise the importance of sensing capabilities in detecting these changes early, allowing proactive responses.

This is because organisations with a high level of awareness are better equipped to anticipate potential opportunities and threats, allowing them to make informed decisions and adapt their strategies accordingly.

In line with the above, Baran and Woznyj (2020) have highlighted the significance of awareness in navigating volatile, uncertain, complex, and ambiguous (VUCA) environments. In line with the above, Sinha and Sinha (2020) argue that organisations must cultivate heightened awareness to adapt to the VUCA era in today's fast-paced business landscape. They emphasise the need for businesses to be aware of VUCA dimensions such as volatility, uncertainty, complexity, and ambiguity and to strategise effectively.

There are different opinions, such as Schwengber (2023), who underscores the role of internal networks and policies in fostering awareness within organisations. Through knowledge sharing, organisations can improve their collective awareness of external changes and potential opportunities. This aligns with the notion that organisational awareness depends not only on individual competencies but also on collaborative efforts and information exchange within the organisation (Sinha & Sinha, 2020).

Sinha and Sinha (2020) highlight further the importance of organisational awareness in understanding the VUCA environment and its implications for HR strategies. This awareness entails recognising the impact of the 4th Industrial Revolution (4IR) on job profiles and skill landscapes (Sinha & Sinha, 2020).

2.3.4.3. Competence

Zitkiene and Deksnys (2018) assert that competence in the sense-response framework is related to the skills, knowledge, and capabilities of individuals or teams within an organisation that enable them to interpret and respond to external stimuli effectively. These authors continued to emphasise how competence encompasses technical expertise and adaptive abilities required to navigate dynamic environments. Baran and Woznyj (2020) have argued that competence in sensing involves having the necessary skills, knowledge, and resources to effectively gather, interpret, and analyse information from the environment. This includes technological capabilities, human expertise, and organisational processes that enable efficient data collection and analysis.

Competent sensing enables organisations to accurately assess the significance of emerging trends and events, enabling proactive responses. Scholars like Zitkiene and Deksnys (2018) argue that competence is essential for organisations to translate awareness into actionable responses. This involves analysing external changes, as well as the necessary skills to do so and the agility to adapt strategies and operations accordingly.

Sinha, Mishra, Manogna *et al.*, (2022) underscore the need for continuous upskilling and reskilling, particularly in the 4th Industrial Revolution context. As highlighted by the World Economic Forum (2020), technological advancements and digital transformation require a shift in the required competencies, with an increasing emphasis on skills such as critical thinking, digital literacy, and adaptability. On the other hand, Jaiswal *et al.* (2021) emphasise the importance of soft skills alongside technical competencies, particularly in the face of automation and AI. Skills such as communication, empathy, and problem-solving are deemed indispensable for navigating the complexities of the modern workforce. However, Achoki (2023) underlines the importance of individual competence, which includes education, training, and openness to learning, in adapting to technological changes, which aligns with organisational competence in sensing external changes.

2.3.4.4. Response capability

In response to detected changes, organisations must take strategic actions encapsulated within the framework's reconfiguration, learning, coordination, and cooperation dimensions (Achoki, 2023).

2.3.4.4.1. Reconfiguration

In the sense-response framework, "reconfiguration" refers to organisations making adaptive changes in response to external stimuli (Thomas & Douglas, 2024). This may involve restructuring processes, redefinition of, reallocating resources, or redefining strategic objectives to align with changing environmental conditions. Another view was presented by Mishra, Abdalhamid, Mishra *et al.* (2021), who argued that reconfiguration refers to an organisation's ability to adapt its structures, processes, and resources in response to changing environmental conditions.

This may involve reallocating resources, redesigning workflows, or restructuring organisational units to better align with new opportunities or challenges. Therefore, organisations that excel in reconfiguration are agile and flexible, capable of swiftly adjusting their operations to capitalise on emerging opportunities or mitigate risks (Mishra *et al.*, 2021). Scholars such as Nafei (2016) emphasise the need for organisational agility, which entails the ability to quickly reconfigure operations in response to emerging threats or opportunities.

This aligns with the notion that in VUCA environments, flexibility and adaptability are paramount for organisational survival, as propounded by Sinha and Sinha (2020). Furthermore, Aggarwal *et al.* (2022a) highlight the role of continuous assessment and refinement in reconfiguration efforts. Organisations must not only initiate changes but also monitor their effectiveness and adjust strategies accordingly. This iterative reconfiguration process enables organisations to remain responsive to evolving circumstances.

Reconfiguration involves adjusting talent and skills within the organisation to meet changing demands. Nafei (2016) emphasises the need to reconfigure talent and skills to adapt to rapid changes, highlighting the importance of aligning workforce capabilities with emerging needs. Furthermore, Schwengber (2023) advocates that using technology to facilitate internal and external networks for learning and development enables organisational reconfiguration.

2.3.4.4.2. Learning

Chakma and Chaijinda (2020) believe that learning within the sense-response framework encompasses both individual and organisational processes of acquiring new knowledge, skills, and insights. This is supported by Kiers *et al.*, (2019), who argue that learning involves formal training initiatives and experiential learning, knowledge sharing, and continuous improvement practices. The conceptual model of organisational agility of Zitkiene and Deksnys (2018) shows that learning is essential for organisational agility, as it enables continuous improvement and adaptation. This involves both individual and organisational learning processes that capture, disseminate, and apply knowledge gained from past experiences (Zitkiene & Deksnys, 2018).

Organisational growth and long-term competitiveness increasingly rely on the ability to acquire, interpret, and apply new knowledge in dynamic environments. Atanassova *et al.* (2025) emphasised the importance of learning and argued that learning allows organisations to identify patterns, refine strategies, and enhance their capabilities over time. Through learning, organisations become more resilient and better equipped to navigate uncertain and dynamic environments. The literature emphasises the importance of a learning culture in facilitating adaptive responses to external changes. Schwengber (2023) highlights the role of internal networks and learning opportunities in promoting a culture of continuous learning within organisations.

By encouraging employees to participate in ongoing skill development and knowledge acquisition, organisations can enhance their ability to respond effectively to changing environments. Furthermore, the World Economic Forum's reports (2020) highlight the need for lifelong learning in the face of technological disruptions. As advances in AI and automation redefine job roles and skill requirements, individuals and organisations must embrace a mindset of perpetual learning to remain competitive.

In rapidly changing organisational environments, the ability to learn continuously has become a critical determinant of how effectively firms navigate uncertainty. As Schad (2020) highlights, learning is central to organisational response, which emphasises creating a culture of continuous learning within organisations.

This involves offering various learning opportunities, such as training programs and workshops, to support up-skilling and reskilling initiatives (Aggarwal, *et al.*, 2022). Aggarwal *et al.* (2022) further stress the importance of continuously assessing skill needs and solutions to facilitate ongoing learning and improvement.

2.3.4.4.3. Coordination and Cooperation

Coordination and cooperation are essential in the response phase, involving collaborative efforts within and across organisational boundaries (Nafei, 2016). This includes aligning goals, sharing resources, and joint problem-solving to address external challenges. Achoki (2023) argues that an effective response to environmental change often requires coordination and cooperation across different parts of the organisation.

This includes collaboration between departments, teams, and individuals to align efforts towards common goals and objectives. Schad (2020) holds a different perspective, saying that coordination ensures that resources are deployed efficiently, redundancies are minimised, and conflicts are resolved constructively.

Cooperation fosters a culture of teamwork and shared responsibility, enabling organisations to respond more effectively to complex and multifaceted challenges (Aggarwal, 2022). Zitkiene and Deksnys (2018) emphasise the importance of coordination in executing responsive actions effectively. Effective organisational coordination ensures coherent, well-executed responses in VUCA environments, where rapid, unpredictable changes occur. Furthermore, Abu-Rumman *et al.* (2021) highlight the role of strategic partnerships and external collaborations in improving organisational responsiveness.

Using external expertise and resources, organisations can enhance their capabilities and access new opportunities for growth and innovation. Collaboration and cooperation are important as organisations must collaborate internally and externally to address skill gaps and drive up-skilling and reskilling efforts. Zitkiene and Deksnys (2018) highlight the importance of coordination in leveraging organisational resources to respond to external changes. Furthermore, Abu-Rumman *et al.*, (2021) emphasise the importance of fostering employee empowerment through knowledge-sharing initiatives and partnerships with external training providers, promoting cooperation in achieving up-skilling and re-skilling objectives.

Although the sense-and-response framework provides a structured approach to addressing upskilling and reskilling needs, several critical considerations warrant discussion, as accurately sensing and interpreting external drivers can be challenging due to the inherent uncertainty and complexity of the environment (Clegg *et al.*, 2019). Organisations must invest in advanced analytics and foresight capabilities to improve sensor accuracy and effectiveness.

Second, the success of response initiatives is heavily based on organisational agility and adaptability (Brynjolfsson & McAfee, 2014). However, rigid structures and bureaucratic processes can hinder timely and effective responses to changing skill demands (Cukier, McCallum, Egbunonu *et al.*, 2021).

2.4. Overview of the BRICS economy

BRICS, a coined word referring to Brazil, Russia, India, China, and South Africa as a bloc, had a Gross Domestic Product (GDP) of over 26.03 trillion US dollars in 2022, as reported by O'Neil (2023). This highlights the improving strength of the economies of the BRICS countries.

This strength saw a change in the Group of Seven (G7)-BRICS dynamic in 2020, where BRICS overtook G7 and had a greater contribution to the world GDP at 31.4 % compared to the G7- Canada, France, Germany, Italy, Japan, the United Kingdom and the United States of America with 30 %.

The contribution of the BRICS is broken down as follows: China (17.6 % of global GDP in 2019), India (7 %), Russia (3.1 %), Brazil (2.4 %), and South Africa (0.6 %) (Raghavan, 2023; O'Neil, 2023). Among the BRICS countries, China is the largest exporter, accounting for 74 % in 2020 (Statistica, 2023). Russia has the second-largest share of exports, while South Africa is the smallest, as India overtook Brazil in 2009 (Statistica, 2023).

Small, Medium, and Micro enterprises increasingly play vital roles in developing and developed economies (Diabate *et al.*, 2019; Ayandibu and Houghton, 2017; Pascual *et al.*, 2019; Bayati & Taghavi, 2007).

A booming SME sector, led by manufacturing, has made countries like France, Japan, Germany, the United States, and the United Kingdom among the world's wealthiest nations, along with China, one of the fastest-growing economies (Signe and Johnson, 2018).

In 2016, BRICS had a population of 3.1 billion (43 %) and a nominal GDP of \$16.04 trillion (32 %). Indian and Chinese SMEs accounted for half of GDP and employment (Noshad *et al.*, 2019). BRICS countries have large populations, ranging from 1408.5 million in China to 62.4 million in South Africa, as of December 2024 (IBGE, 2025). This population is predominantly skilled or semi-skilled, and South Africa's growth rate was 7.44% as of 2020.

For BRICS, manufacturing is one of the main economic sectors (BRICS Economic Indaba, 2023). Despite its criticality, the contribution of this sector to GDP and formal-sector employment in South Africa decreased to 12 % by 2019 (South African Reserve Bank, 2020). These challenges in the manufacturing sector were exacerbated by the negative effects of the COVID-19 pandemic (Anatan, 2021; Ardolino, Bacchetti, and Ivanov, 2022) and by the industry's inability to prepare for a crisis, leading to job losses, liquidations, and other negative consequences (Jacobs, 2025). In addition, the analysis indicated technical inefficiencies in South African manufacturing sectors. As such, the presence of imports and exports produces a competitive environment that requires domestic industries to reduce expenses to achieve operational efficiency (Mazorodze, 2020).

These challenges require a response to improve this sector, which is critical to economic growth. This is even more urgent for manufacturing small and medium enterprises (SMEs), which paradoxically are expected to contribute towards economic growth and employment while at the same time they are having substantial failure rates, (Arsawan *et al.*, 2022). As a response, organisational agility (OA) in manufacturing operations is required as it facilitates the prompt and quality-conscious response of organisations to market needs and minimises disruptions of the supply chains (Barhmi, 2022; Gawade, 2023).

OA is important for achieving and maintaining a competitive advantage. Manufacturing firms require resources and the capability to endure external turbulence.

However, there is a dearth of an industry or sector-specific organisational agility framework. Conceptualisation and sector specificity in existing organisational agility (OA) frameworks (Msomi *et al.*, 2019) lack clarity when applied across industries (Alvedalen & Boschma, 2017; Msomi *et al.*, 2019).

OA frameworks are well known and viewed as standard operating procedures that are neither monitored nor evaluated. However, their content and structure vary significantly (Zhang & Sharifi, 2007). Manufacturing SMEs lack a common understanding of organisational agility (Zhang and Sharifi, 2007; Walter, 2021), and they are not provided with any framework to facilitate cross-learning. OA needs to be strengthened due to external factors (Walter 2021).

Poor performance could be attributed to poor risk management or inadequate firm-level agility (Herrington and Kew, 2018). Hence, competitive advantage requires sector-specific strategies to survive the external environment (Attafar, Ghandehari, and Momeni, 2012; Kalidas, Magwentsu, and Rajagopaul, 2020; Arsawan, Hariyanti, Atmaja, *et al.*, 2022).

Agility systems enhance markets, access to finance, technology needs, and governance processes, but require business stability for effective lean manufacturing. Thus, the absence of industry- or sector-specific OA frameworks enables this study to explore furniture manufacturing firms, focusing on their decision-making processes and agile approaches.

Wendler (2013) analysed and summarised 28 frameworks, dividing them into four categories. Agile Manufacturing, Agile Software Development, Agile Organisations and Agile Workforce. However, selecting the agile manufacturing domain helps create a holistic framework for agility.

The two lowest contributors among the BRICS nations, South Africa and Brazil, face idiosyncratic issues, including declining production and imports, that affect the furniture manufacturing sector. Brazil cannot mitigate or overcome international competition from China (Da Rocha Junior & Gazoli de Oliveira, 2019), while South Africa cannot overcome socioeconomic issues that hamper production and competition (SEDA, 2020).

BRICS countries consider the manufacturing sector one of the most important sources of growth; it can transform the economy, create new jobs, and raise labour quality and living standards (BRICS Economic Cooperation, 2021). Growth in the production and export of value-added goods would provide BRICS economies with an opportunity to gain greater benefits from international cooperation, increase their role in global value chains, and raise their competitiveness (World Bank, 2020).

Economic growth driven by industrial and mining development strengthens economic ties among BRICS countries. It is based on the development of advanced technologies, innovations, as well as downstream value addition through the engagement of the public and private sectors, as appropriate, in the implementation of national development programs, as well as international industrial cooperation and partnerships in the BRICS countries (Zhao *et*

al., 2025; Abdeldjalil *et al.*, 2024). The interaction among BRICS countries aimed at technological and industrial development should be reflected in the above (Bate, 2021; BRICS Business Council, 2023).

India has taken several steps to improve trade, including proposals for a new and inclusive BRICS portal (Kumar & Singh, 2023). India promotes intra-BRICS trade, urging member nations to import goods from each other rather than from Europe (Patel, 2022). Through the BRICS Bank, India has made a remarkable contribution to refurbishing industrial bases and digitising education by providing technological support to schools in South Africa and Brazil (Dutta, 2023).

India started the Global Executive Development Program, which trains the labour force in South Africa (Moyo, 2023). India is seen as the big brother of BRICS (Chen, Zhang and Li, 2022). India intends to work with South Africa to deepen security along their shared coastline at shared costs (Prabhakar, 2024).

It has opened its doors to host trade fairs so that member countries can learn and share innovation (Kumar & Arora, 2015). India plays a big brother role among the BRICS countries by advocating that each country be strong on its own, so that the responsibility for strengthening the BRICS does not fall on one or two countries alone (Sharma, Oberoi, Gupta *et al.*, 2022).

The focus was on industry-specific (micro-level) on the furniture manufacturing sub-sector. This is because the furniture manufacturing sector, compared to the other 9 sectors, recorded the lowest (1%) profit margin in 2021 (Statistics South Africa, 2021). The South African Furniture Initiative (2022) indicates that the furniture manufacturing sector has been shrinking for more than two decades compared to other sectors. The BRICS alliance offers countries an opportunity to pool their resources, expertise, and markets to drive growth and competitiveness. According to WESGRO (2023), furniture manufacturing is one of the most labour-intensive sectors, and the development of SMEs in this sector has a considerable impact on job creation. The same report reveals a need for research and development in the furniture manufacturing sector to address its challenges.

An enabling environment for SMEs to thrive is enhanced by supportive policies, regulatory frameworks, and legislative frameworks (Dianu *et al.*, 2021). For instance, Brazil has *Sistema S*, *Simplex Nacional*, and the SEBRAE policies. These policies exist to ensure government policy implementation and to upgrade the skills of the labour force in the SME sector. They seek to ensure a simplified tax and regulatory regime, provide support services for SMEs, increase the number of firms, manage tax, and provide preferential points to SMEs (Jones & Lee, 2018).

Russia has Skolkovo, which aims to support innovative SMEs, facilitates incubation and partnerships with institutions of higher learning, and provides funding for SMEs.

India prioritises entrepreneurial ecosystems and policies that direct resources towards strengthening EE and policies (Dianu *et al.*, 2021). China's open-door policy encourages foreign companies to invest in China. Tax and incubation policies have helped China focus investment and achieve results quickly (Naradda-Gamage *et al.*, 2020).

The policy and regulatory environment in South Africa favours SMEs across sectors; the manufacturing sector is provided with incubation facilities and training centres, policies to ensure that priority for funding prioritises entities (e.g., TVET college graduates and University graduates) due to needs assessment and poverty means tests posed by the government (Sibiya & Kele, 2019). The regulatory focus on SMEs stems from a lack of compliance with regulations and with enabling policies in production operations.

The strength of each BRICS member country in the manufacturing sector varies, and so do the priority focus areas. Brazil's industries are mining and agriculture, with manufacturing ranked third largest in Latin America (Sawe, 2017). The Russian economy is dominated by agriculture, industry, and service (Zhuravskaya *et al.*, 2024). India's manufacturing sector is the second-largest contributor to India's GDP after the services sector, followed by agriculture (Mandurnekar, 2019).

At the helm of the Chinese economy, manufacturing, services, and agriculture are the largest sectors with electronics, rail cars, ships, textiles, cement, chemicals, toys, iron, steel, and aluminium aircraft as dominant products (Ross, 2022).

South Africa has mining, transport, energy, manufacturing, tourism, and agriculture with agro-processing; automotive, chemicals, ICT and electronics, metals, textiles, clothing and footwear as dominant outputs (SEDA Report, 2022).

SMEs can improve competitiveness and respond quickly to rapidly changing market demands by enhancing manufacturing agility. In this study, the mechanisms that enhance opportunities for shared knowledge regarding strategies applied and transferable to other BRICS countries to strengthen organisational agility in manufacturing SMEs are to be distilled.

BRICS countries consider the manufacturing sector as one of the most important sources of growth; it may change the economy's structure, create new jobs, and raise labour quality and living standards, Magacho, Marconi & Rocha (2019). Growth in the production and export of value-added goods would provide BRICS economies with an opportunity to gain greater benefits from international cooperation, increase their role in global value chains, and raise their competitiveness (Iqbal, 2021). Economic growth driven by industrial and mining development will strengthen economic ties among BRICS countries.

It will be based on the development of advanced technologies, innovations, and downstream value addition through the participation of the public and private sectors as appropriate in the implementation of national development programs, as well as international industrial cooperation and partnerships in the BRICS countries, BRICS Economic Strategy (2015)

Understanding how firms build and sustain their competitiveness over time requires attention to the strategic capabilities that enable them to adapt, innovate, and reposition themselves in changing environments. According to Teece and Pisano (1994), firms that demonstrate sustained competitive advantage exhibit 'timely responsiveness and rapid product innovation, coupled with the management ability to coordinate and redeploy internally and externally effectively. It is a truism to suggest that the manufacturing environment is turbulent and uncertain (Bettiol, Capestro, Di Maria *et al.*, 2023) and that firms must develop new responses to deal with it. As the following section suggests, agility depends on the ability to identify and respond to these external influences.

However, for South African firms to be sustainable and acquire a competitive advantage, they must apply sector-specific strategies to survive unforeseen occurrences influenced by the external environment (Kalidas, Magwentsu & Rajagopaul, *et al.*, 2020; Arsawan, Hariyanti, Atmaja, Suhartanto, & Koval, 2022). This is particularly an issue for SMEs since, by nature, they are less likely to rely on resource or other factor endowments but must achieve competitiveness through finding and defending niche positions in the market (Bessant *et al.*, 2000).

Slow SME growth and poor performance could be attributed to poor risk management or firm-level agility (Herrington and Kew, 2018), yet safeguarding systems are required to manage microeconomic environmental factors (Williams *et al.*, 2019; Lima *et al.*, 2020). Given these assertions, the study will analyse mechanisms to strengthen the organisational agility of South African manufacturing firms relative to those of other BRICS member countries. If South African companies want to pursue agility, they must revise their response mechanism to external environmental factors (Govuzela, 2018; Govuzela & Mafini, 2019).

For firms to take advantage of global opportunities, they need flexible organisational structures, efficient and agile business processes, an adaptable workforce, proactiveness, agile partners and networks, and flexible technology (Arsawan *et al.*, 2022). BRICS views organisational agility (OA) as a key pillar of sustainable, thriving firms (Camarinha-Matos *et al.*, 2022).

The speed of response to unexpected changes or disruptions in the business environment is a distinguishing factor of successful organisations (BRICS Information Centre, 2017). Hence, the impact of OA on BRICS member countries is the proliferation of successful OA strategies, the building of capabilities, and the development of response mechanisms. Although manufacturing is considered one of the priority areas for BRICS member countries in agribusiness, digital economy, financial services infrastructure and green economy (BRICS Economic Indaba, 2023), it is also an influential sector for economic growth through job opportunities, increased quality of labour, improved skills and standards of living (BRICS Economic Strategy, 2015).

2.4.1. Key economic sectors and subsectors

Across the BRICS economy, the most productive sectors in Brazil are farming, manufacturing, and services. Manufacturing constitutes 21 % of Brazil's GDP and employs 32 % of its workforce. Brazil has the third-largest manufacturing sector in South America. Manufactured products in Brazil include cement, shoes, textiles, chemicals, motor vehicles, machinery, equipment, and aircraft (Dweck, Marcato, Torracca *et al.*, 2022).

Among the most competitive countries in the world, Russia ranks 43rd out of 140 countries (Padhi, 2022). Russia is ranked 28th among 190 economies in terms of ease of doing business (World Bank, 2022). New entrepreneurship support policies positively contribute to Russia's ranking, improving it from 31st in 2018 to 28th in 2019. The largest sub-sectors within manufacturing are metallurgy (9.6 %), coke and refined petroleum products (9.5 %), food, beverages, and tobacco (8.4 %), chemicals (4%), machinery and equipment (3.8 %), transportation (3 %), and electrical equipment (3.4 %).

Mining and quarrying account for 35%, while natural gas and crude oil exploration account for 29% of total output. Electricity, gas, and water supply account for 11% of the total (Romanova & Kuzmin, 2020).

India has positioned itself in the manufacturing sector by providing world-class manufacturing excellence and well-established vital industries, such as automotive components, textiles, and, more recently, petrochemicals. An example is Bharat Forge's plant, the world's largest forging factory, which has put India on the global manufacturing map. India has conventionally focused on domestic production and consumption in the manufacturing sector.

China is the world's number one producer of cement, steel, and chemical fertiliser. Six of the ten largest steel producers in the world are based in China, indicating the strength of China's manufacturing sector. China produces 683 million tons of steel annually, making it the world's largest producer. It has the largest cotton textile output, with textile manufacturing accounting for 10% of the country's gross industrial output.

It is the third-largest producer of automobiles in the world, behind the US and Japan, with the annual automobile export estimated at \$70 billion (KPMG, 2024).

About 94.3 % of China's \$2.09 trillion in export income is derived from the manufacturing sector, which includes locomotives, textiles, fertilisers, electronics, automobiles, and ships. China is by far the largest gold producer in the world, producing about 463.7 tons in 2016 in comparison to the second biggest producer, Australia, which managed to produce 274 tons in 2016 (Sawe, 2017). While South Africa was the world's top gold-producing country for 101 years, its gold production declined by 50 % in the past ten years (Gopaul, 2019). China's gold production has steadily grown over the past decade, increasing by more than 10-fold. Most of the gold produced in China is consumed locally, as China is the world's fourth-largest gold consumer. The local gold consumption in China accounts for 9.2 % of global gold consumption (Gopaul, 2019). Coal mining is another important sector. South Africa's manufacturing sector predominantly comprises metals, textiles, information and communication technology, the automotive industry, chemicals, electronics, clothing, and footwear (MerSETA, 2017).

Despite being a predominantly agricultural economy, South Africa has diversified into several manufacturing and service sectors. It is home to some of the world's largest automotive manufacturers because of its ease of business, the rule of law, and reasonable labour practices. It has a strong original equipment manufacturer that produces quality parts and equipment. The auto industry's increased production of electric vehicles plays a huge role. Its manufacturing sector has the advanced technology and infrastructure to help the world's cars switch from fossil fuels to clean energy.

Mining, machinery, communications, automobiles, textiles, food processing, chemicals, and fertilisers are the highest-growth industries. The South African retail and financial services industries are the most sophisticated on the continent and have an effective regional presence. Most of the country's reserves are derived from gold, titanium, platinum, diamonds, manganese, and other minerals, contributing significantly to the GDP. The coal mining industry provides 95% of the coal reserves to meet energy needs (TRALAC, 2018).

Sarwar, Khan, Sarwar *et al.*, (2021) discovered that factors such as human capital, technology, and the country's economic condition impact SME growth. Particularly in developing countries, poor infrastructure and weak regulatory systems hinder firm development. Moreover, SMEs in developing countries lack management skills, access to finance, and face high tax rates. SEDA (2019) concurs that SMEs cannot afford the required infrastructure, particularly suitable business premises with appropriate equipment.

The subsidised co-working spaces only house a few and are in inaccessible locations. Therefore, this study proposed organisational agility as a solution to the limitations of existing general frameworks. Significant theories of SME obstacles include financial constraints, competition, corruption, political instability, and the high cost of production. However, these theories are slightly concerned with the influence of growth patterns on BRICS SMEs. Wang (2016) considers the inaccessibility of consultant support and financing as a major hindrance to growth, and performance as a significant constraint to progress.

As leading suppliers of manufactured goods and services worldwide, China and India are used as examples, while Brazil and China are the world's leading raw material suppliers.

The referenced study by Wang (2016) does not provide solutions to the high cost of lending and the lack of consultant support, both of which also hinder finances. However, the BRICS provided recommendations to address gaps in finance and in access to intellectual property. Manzoor *et al.* (2021) recognise that SMEs, especially those in rural areas, lack basic business management skills and information on accessing finance. These resources are essential for business growth. Additionally, many of these SMEs are unable to understand their market or recognise opportunities.

However, no information is provided on SME support coordination. Noshan *et al.* (2019), Giang *et al.* (2024), and Lekhanya (2016) assert that policymakers or researchers must focus on how to make SMEs work efficiently and achieve sustainable growth. They should ensure that existing SMEs operate efficiently by overcoming the sector's challenges. Challenges include a lack of skills, limited access to finance, and cash flow issues.

Most studies focus on sustainable SME growth or performance in specific areas, thereby influencing change in those areas.

Njenge (2021) defines a business model as a system of activities determining the interdependent, interrelated, and interconnected activities a firm employs while doing business with customers, suppliers, and partners. An entrepreneurial ecosystem, therefore, seeks to provide such a structure, form, and shape the future of the enterprise, focusing on all dimensions that inform sustainable growth and heightened performance.

The OECD (2018) research report on SME business ecosystems for sustainable growth shows that Start-ups and SMEs mainly depend on more prominent companies in their business ecosystems and are more susceptible to market failures, policy inefficiencies, and inconsistencies arising from internal growth constraints across different areas.

Madzivhandile and Dlamini (2015) assert that SMEs in the manufacturing sector operate in a fragmented manner, with one supporting institution or stakeholder unaware of what the other is doing, resulting in duplication of efforts and making it challenging to measure expected growth.

The study or report is scant; it provides little information on models for integrating support and coordinating activities from a single hub. SMEs' innovation capacity is positively related to technological innovation performance and SMEs' skills and technology acquisition. Therefore, technology acquisition, government policies, and skills are critical contextual factors that can increase SMEs' innovation performance. Small and Medium Enterprises are crucial in promoting and sustaining innovation-based regional economic growth. Individual firms, particularly SMEs, cannot independently innovate; a firm's innovation capacity is necessarily enhanced by an extended knowledge base, cost reduction, and risk sharing enabled by extensive links, networks, and technology and knowledge acquisition.

2.5. Manufacturing sector performance & Entrepreneurial ecosystems in BRICS countries

2.5.1. Human Capital and Resources

Brazil is a developing country rich in natural resources, with a strong focus on manufacturing and the supply chain.

The income inequality gap has been steadily closing because of recent financial strategies, with anticipated long-term prosperity. Brazil has a well-functioning, innovative start-up ecosystem. The Brazilian start-up ecosystem comprises many public, semi-public, and private organisations collaborating. It has a strong, effective network of business incubators and accelerators. Hence, some promising open innovation programs connect start-ups, small companies, and large companies requiring specific technology solutions. The central local development policy at the federal level has focused on business clusters. Therefore, several studies have shown that cluster participation positively affects the performance of local SMEs (e.g., job creation and wages).

In Russia, manufacturing measures the output of businesses that form part of the industrial sector of the economy. Industrial production is the most critical sector, which accounts for 55 % of total production, Gurkov & Filinov, (2022). Since April 2019, new orders have grown amid stronger domestic demand, offsetting a soft decline in external demand since the beginning of 2022. Conversely, India has emerged as one of the most attractive investment destinations for business in recent years. It has a large middle class that is growing and evolving with improved spending patterns, offering a sizeable domestic market for foreign products and services.

The stable economic growth in India has significantly contributed to reducing poverty. Over the past decade, India has made substantial progress in reducing multidimensional poverty, with a decline from 29.17 % in 2013-14 to 11.28 % in 2022-23 (Nanjundaiya, 2024). This achievement is partly due to robust economic growth and strategic government initiatives, such as the Pradhan Mantri Jan Dhan Yojana and expanded social protection programs including food subsidies during the COVID-19 pandemic (Bhattacharya and Roy, 2021;

Arbatli Saxegaard, Coppo, Kalil *et al.*, 2023). India is transitioning to a more automated, process-driven manufacturing system, which has increased demand for high-end equipment and machinery (Arbatli *et al.*, 2023). The country's asset portfolio includes a young labour force and many engineers. These factors are crucial for sustaining industrial growth and job creation (Usuka, 2019).

Additionally, significant domestic consumption of manufactured goods supports this shift by providing a strong internal market for Indian industries (Balasubramanyam & Wei, 2015). In terms of prospects, India's reliance on domestic consumption provides resilience against external economic shocks but also presents challenges such as managing inflation and trade deficits (Singh & Gupta, 2023; European Commission, 2024). Despite these challenges, India continues to emerge as a major global economic player with substantial growth potential.

These factors become especially vital as China, the world's leading manufacturing destination, faces peak labour shortages and exponential wage growth. The Indian manufacturing industry generated 16 to 17 % of India's GDP before the COVID-19 pandemic and is projected to be one of the fastest-growing sectors (Raghavan, 2023). The machine and tool industries were the nuts and bolts of India's manufacturing industry. Technology has driven innovation through digital transformation, a key factor in gaining an edge in the highly competitive market. Both the Indian government and firms recognise the need to progress to the next and latest phase of manufacturing.

China is a high-potential manufacturing market due to its rare-earth metal reserves, which constitute 90 % of the world's reserves, giving it a competitive advantage. China is a developing country with significant potential, but it is steadily ageing due to its one-child policy. The low labour cost and easy availability of labour assist sectors in increasing. China is the biggest exporter worldwide.

South Africa is a sub-Saharan African country ranked as an upper-middle-income country by the World Bank, with the top ten % of the population accounting for 58 % of the country's income (World Bank, 2020). It produces quality machinery and components.

The manufacturing sector has advanced technology and infrastructure to help the world's cars switch from fossil fuels to clean energy. The COVID-19 pandemic prompted world investors to diversify their sources, and South Africa's manufacturing sector presented a novel possibility.

The industry is well-established, has advanced technologies to supply high-quality products, and is strategically placed to give businesses access to the remainder of the continent. South Africa is ranked 43rd in business strategy. Therefore, organisational agility, resource maximisation through lean manufacturing, and entrepreneurial bricolage are not considered resources that can prolong a firm's lifespan. A firm's competitiveness lies in the unique features that give it an edge over its competitors.

2.5.2. Support, policy, and Regulatory Framework

Brazil regularly evaluates its central policies and major SME and entrepreneurship programs to build evidence for future policies and understand their impact. This has strengthened the country's SME sector. The Central Bank of Brazil has increased competition in the credit market by easing the entry and growth of smaller financial institutions, including credit cooperatives. Small and Medium Enterprises in Brazil are given preferential treatment, underpinned by the Federal Constitution.

The SME policy in Brazil hinges on the 1988 Federal Constitution, which grants preferential treatment in different policy areas (e.g., tax and labour law) to micro and small enterprises, defined based on annual gross revenues, with Brazil's at BRL 4.8 million (Veiga & McCanery, 2019). Brazil focuses on SME policy formulation, implementation coordination, and entrepreneurship policies (Veiga & McCanery, 2019). As a result, most SME policies are aimed at a small group, while mid-sized enterprises are omitted mainly from the national policy debate. *Sistema S*, the small business support policy, consists of organisations that do not officially belong to the government but work under its control and play a key role in operating many targeted programs for SMEs, some of which could be scaled up.

Government loan subsidies are the primary direct policy instrument used by the federal government to foster SME development.

Between 2016 and 2018, the share of SME business loans by Brazil's most prominent public development bank rose from 30.6 % to 46.8 % of the total; however, loan guarantees are much less common (OECD, 2018). As Brazil operates some successful innovation programs, most innovation policies target large companies.

Supporting the SME sector is one of Russia's economic policy priorities. Entrepreneurial activity does not depend on government support. Instead, it responds to macroeconomic and institutional changes. According to business surveys conducted by Barinova and Zemtsov (2023), 91 % of firms have never relied on government support instruments.

Brazil hypothesises that direct national government support mechanisms may create negative incentives and obstacles for SMEs, thereby undermining adequate policies developed at the regional and municipal levels.

The goals set by the SME Development Strategy, the Presidential Executive Order, and the current macroeconomic situation and institutional conditions can be achieved only formally. Since 2017, direct support measures (subsidies, loans, government procurement) have been in place. Russia further proposes an alternative approach, creating regions of SME local development institutions, a professional investor pool, a specialised private and non-profit infrastructure, and support for entrepreneurial networks (in cooperation with consultants and local authorities). This refers to entrepreneurial ecosystems considering region-specificities.

A Successful Entrepreneurial Ecosystem (EE) has been recognised for its unique features, agile mechanisms, lean manufacturing practices, and more. Although SME governmental support targets different groups of entrepreneurs (beginners, microenterprises, small and medium-sized enterprises), in practice, it still pays little regard for their sectoral and regional differences (Szerb, Lafuente, Horváth & Páger, 2019).

Institutional differences between regions, rather than the nationwide successful implementation of the National Entrepreneurial Initiative and progress in the Doing Business

ranking, strongly influence entrepreneurship development. These differences also influence the implementation of legislative initiatives not geared toward regional specificities. This shows a lack of SME-specific understanding of the different development conditions across other territories, including legislation unification and the provision of support regardless of business type and location (Audretsch & Belitski, 2017). This results in poor correlation between the support measures and the actual business needs, as well as the absence of clearly defined priorities and significant policy inconsistencies.

The Indian government has adopted the 'Made in India' core policy initiative to encourage and accelerate the growth of its manufacturing sector. The Indian Government's National Manufacturing Policy aims to increase the manufacturing share of GDP to 25 % by 2025 (European Commission, 2024). The 'Made in India' policy is anticipated to boost the local manufacturing industry's demand and consumption of equipment and machinery. The government launched the Production-linked incentive (PLI) scheme in 2022 to develop 13 sectors to global manufacturing standards. This shows the appetite to strengthen the manufacturing sector.

To date, China has produced and publicised many industry-specific policies and frameworks to support the transformation and development of the manufacturing sector, against the backdrop of promoting traditional industries' progress towards the middle and high-end, placing emphasis on the development of high-end manufacturing areas, and enhancing technological innovation capabilities (Jiang & Gu, 2023; Li (2018). The government recently launched 'Made in China 2025', a national strategy to strengthen the country's manufacturing sector. Within the last twenty years, China's strategy of "leveraging the marketplace for technology" has worked comparatively well. Chinese manufacturing firms have significantly enhanced their technical capabilities and become world market leaders in over 200 product categories.

The growth of China's manufacturing sector contributed to a shift in business methodologies, including international sourcing and valuation-based competition (Jiang & Gu, 2023).

The 'Made in China 2025' national strategy aims to advance competitiveness in the manufacturing sector. Despite China having a relatively strong national government, coordination among provincial and local governments is lacking. As a result, waste of valuable natural and financial resources and the destruction of many promising industries (e.g., solar cells and automotive) have been experienced. This emanated from significant low-level duplication of effort, and the Made in China (2025) strategy. This lack of an effective system to protect intellectual property also discourages firms from investing in new technology. According to ECCSEC (2021), the highest decline in Eastern Cape Province SMEs occurred in the manufacturing sector.

The Invest SA initiative and the Department of Trade, Industry and Competition (DTIC)'s Masterplans of South Africa are some of the salvaging strategies. Invest SA facilitates business entry into the market and helps reduce the time it takes to establish itself. The strategy aligns with the national government's Economic Reconstruction and Recovery Plan, which seeks to improve the sector's global competitiveness, increase participation in regional and global markets, and grow and diversify the manufacturing sector (South African Government, 2020).

The adverse consequences of COVID-19 are exerting pressure on the government to support productive sectors, such as manufacturing. Localisation and comprehensive SME ecosystem development for improved market access are integral to the economic recovery plan and economic success (Aga & Maemir, 2021; Biyela & Utete, 2024). The provincial and rural catalytic projects and initiatives underpinning each province's unique strengths and potential are regarded as the background for re-industrialisation. This shows the need to strengthen firms to thrive in post-economic conditions and be more resilient through support mechanisms.

Moreover, South Africa has funding opportunities, such as development finance institutions (DFIs) and banks, to support large industrial projects. Industrial financing support, such as government support schemes, development finance, tax incentives, and the country's 13 special economic zones (SEZs), can help reduce project risks and increase investment returns.

The government's re-industrialisation plans to modernise manufacturing, build green industries, and develop emerging technologies are currently underway, including the establishment of an Artificial Intelligence institute for advanced manufacturing (Mijiyawa, 2017). This would positively contribute to South Africa and make it a globally competitive player in the digital economy.

The government is also hastening township development and the development of rural manufacturing enterprises, encouraging SMEs to produce light, fast consumer goods and urging them to participate in processing high-demand minerals such as chrome, which has helped small manufacturing industry players thrive, particularly in the domestic or household business sector.

Initiation of SME and entrepreneurship policy cuts across different policy areas, calling for strong coordination among different actors and institutions to me effective policies. Brazil strongly coordinates SMEs and entrepreneurship policies at both institutional and operational levels. At the institutional level, committees coordinate national SME policies. Coordination can also be observed in programs designed and jointly implemented by different ministries and organisations at different operational levels.

2.5.3. Market conditions as influencing factors of performance

Low SME productivity can be due to decreased innovation and export propensity (OECD, 2020c). The manufacturing sector remains flat due to the country's reputation for high costs caused by wages and taxes. Fajarika, Trapsilawati, and Sopha (2022) note that SME success is essential to increasing economic competitiveness, reducing unemployment, and addressing regional disparities.

Many new market entrants are also unaware or ignorant of the technical or environmental specifications and regulations they must adhere to for their products or services to be accepted in the market. This silently hinders growth. While considerable knowledge exists about the importance of growth, performance, and competitiveness of SMEs, this knowledge remains imperfect, and many questions about the entrepreneurial ecosystem and framework remain unanswered.

There is a low percentage of exporters and technological startups, and a larger share of that sector is not regulated. The specific topographies of development and the environments in which SMEs operate vary across Russia's regions, yet this is not given due attention in legislation (Barinova & Zemtsov, 2023). Brazil is not fully integrated into global trade, which is a precondition for SME participation in global supply chains. Business regulations are often complex and difficult to follow, and credit market conditions are tight, so the intellectual property protection system is severely backlogged. Hence, ad-hoc organisations for intellectual property management are set up. High inflation, low credit ratings, and interest rates have negated the Brazilian GDP growth rate (Cyrino, Parente, Dunlap *et al.*, 2017).

Russian manufacturing production decreased by 4.5 % in June 2022 compared to the previous year (Gurkov, 2022). Though readings indicate expansion in factory activity, they also show the weakest year-over-year growth; raw material shortages and relatively unresponsive demand conditions have contributed to this. The decreased employment rate in 2022 was due to competitive salary demands, and input price inflation slightly decreased since February 2020, while output prices fell for the second straight month at the steepest pace since January 2009 (Romanova & Kuzmin, 2020).

Underdeveloped infrastructure and supply chains, a price-conscious market, and reliance on labour-intensive processes owing to the availability of low-cost labour and the high cost of technology put pressure on India to create nearly 1 million job opportunities per month over the next 10 years.

India's limited manufacturing competitiveness is exacerbated by low productivity, poor workforce productivity, lack of computerisation, numerous non-value-added tasks, dated manufacturing processes, limited use of customisation in manufacturing, talent and skill shortage, rigid labour legislation, and policies that force companies to hire casual or temporary workers, resulting in the inability to measure sustainable job creation.

Furthermore, education and training schools are not well-equipped to train workers in the field.

Secondly, firms fail to focus on the middle management or foreman (supervisory) level that can provide on-the-job training to direct labour. Scholarly literature indicates that India should focus on infrastructure bottlenecks and structural barriers, including government taxation and a lack of innovation, as hindrances to SME growth. The Indian market is troubled by high competition and low manufacturing production (Hattiangbire & Harkal, 2022).

China's manufacturing industry is characterized by (i) central innovation ability that is not strong enough and an equally weak foundation; (ii) a manufacturing industry that is currently at the low end of the value chain; (iii) low production and operation efficiency; (iv) unreasonable industrial structures; and (v) poor product quality (Li *et al.*, 2020).

China's manufacturing has stagnated in recent years due to the low technological complexity of most products manufactured by firms. Several manufacturing SMEs making insignificant margins on these products could grow their businesses primarily by increasing production volumes. These SMEs face complex challenges in surviving due to slow export markets, resulting shrinkage in overseas orders, and the rapid rise in production costs (e.g., labour, raw materials, energy, land). Corruption, localised unrest, legal reform, human rights and religious freedom, political unrest, environmental issues, and China's legal reform are the biggest challenges (Chen *et al.*, 2022; Li, Liu & Zhi, 2022).

The South African manufacturing sector is characterised by a low-skilled labour force, unemployment, poor infrastructure, and high crime and corruption rates.

Thus, the growth rate has declined significantly and is now negative. Major reforms, government policies, and a solid financial system saw the country record 5.7 % growth in 2024.

Key economic factors that pose a challenge to the economy are high unemployment rates of 32.1 %, labour disputes, high current account deficits of 0 % of GDP, retail inflation, volatile gold and oil prices, and downgrades by rating agencies (PwC South Africa, 2024; MerSETA, 2017).

According to Driver (2019), even with market liberalisation, the South African manufacturing sector cannot compete with manufacturing firms in countries such as China, Vietnam, and Bangladesh. SMEs have declined nationwide, negatively affecting production and demand at provincial and regional levels. The Department of Trade and Industry reports that SMEs contribute 52 to 57 % to GDP and 60 % to employment (The DTI, 2017). Ngibe *et al.* (2019) state that Manufacturing SMEs face several challenges that have profoundly affected their growth and development, and as a result, many have been forced to cease business operations (Sitharam & Hoque, 2016). Even though SMEs employ 50 to 60 % of the workforce and contribute about 34 % of South African GDP, the lack of a dedicated focus on sustainable growth in the manufacturing SME sector can be attributed to the entrepreneurial characteristics of SMEs and entrepreneurs who, predominantly, lack in the awareness, expertise, skills, financial support, and qualified personnel required to build the necessary ecosystem for sustainable growth within an organisation.

2.6. Entrepreneurship

Entrepreneurial activity has increasingly been recognised as a key driver of innovation, competitiveness, and economic renewal in both emerging and established markets. Nwankwo and Chendo (2023) define entrepreneurship as a process/activity involving the discovery of opportunities, the exploitation of opportunities to introduce new ones, and the evaluation of options to meet market demands. Elia, Margherita and Passiante (2020) define entrepreneurship as the dynamic process of creating incremental wealth.

This wealth is generated by individuals or groups who, by taking critical risks with time, equity, and career commitment, provide value through products or services. These authors go on to explain that these products or services may or may not be unique or new to the market, but the entrepreneur must deliver value by employing the necessary skills and resources, the authors assert. Having reviewed a wide range of literature on the subject, these definitions posit that entrepreneurship is a profit and growth motivated endeavour in which a business embarks on either using new or existing products within the market but bringing their niche in the product to maximise profit, expand on it or derive economic benefit linked to value creation.

In the context of the study, this definition and supporting resources are necessary to ensure that the entrepreneur provides a unique or enhanced product that distinguishes it from the rest of the market, which is the source of its differentiation strategy and helps entrench its position amongst competitors. Mishra and Sharma (2025) state that entrepreneurs create new markets and businesses, which lead to a rise in employment as more jobs are created. This has a multiplier effect on the economy. Some of these entrepreneurs are manufacturing SMEs that process raw materials into final consumer goods. The study delves deep into the nature of the manufacturing sector and its importance to the economy through its multiplier effect on job creation.

2.6.1. Sustainable Growth and Performance

The term "sustainable" is commonly understood as the ability to maintain or endure, implying continuous growth over an indefinite period. Wakkee, Van Der Veen, and Eurlings (2015) discuss the significance of SMEs not only in establishing new ventures and ensuring the survival of existing ones in the economy but also in sustaining their growth over time. More recent studies further emphasise the challenges SMEs face in achieving sustainability, particularly amid external market pressures (Azam, 2019). Epede and Wang (2022) highlight the challenge confronting SMEs to not only achieve sustainability but also to maintain it, emphasising that failure becomes inevitable otherwise. Enaifoghe and Ramsuraj (2023) suggest that sustainable growth of SMEs is a significant indicator of their success and of society's prosperity. Recent literature continues to reinforce the notion that long-term sustainability is not only beneficial to SMEs but also critical for overall economic health (Bugwandin *et al.*, 2025).

Sustainable growth has been conceptualised in various ways across different studies. From a financial standpoint, sustainable growth is defined as growth within an organisation without increasing its debt (Neubert, 2019). This perspective emphasises maintaining financial stability while pursuing expansion.

Business growth connotes a process through which an enterprise evolves from the nucleus of its conceptualisation to a fully-fledged, sustainable enterprise. Another viewpoint characterises sustainable growth as the firm's ability to attain its objectives and enhance shareholder value by integrating economic, environmental, and social activities into its strategies (Nguyen & Lee, 2021). This definition highlights the importance of a balanced approach that considers multiple dimensions of performance. Additionally, sustainable growth is seen as growth in economic, social, and environmental performance, reflecting a comprehensive understanding of sustainability (Patel & Kumar, 2022).

However, Al Malki (2023) argues that not all SMEs can achieve all three factors or even possess the necessary resources to integrate these elements of sustainable growth into their mission and objectives.

According to recent studies, sustainable growth entails achieving growth without encountering financial, structural, or strategic setbacks (Ali, Ismail, Khurram *et al.*, 2014). Growth and performance are undoubtedly two fundamental factors, but growing too quickly beyond the firm's affordability creates another financial problem, which pressures the firm to look for new financing, either by raising capital, borrowing from personal sources, seeking funds from family and friends, or creating new debt (Williams & Liu, 2021). Seens (2013) affirms that the firm's sustainable growth is driven by its normal earning power. From the perspective of long-term survival and sustainable, maintainable growth, the profit factor is an important component (Thomas & Lee, 2024).

Several authors weigh in on the importance of sustainable growth in the SME sector. Hakam and Hakam (2024) emphasise that sustainable growth is essential for SMEs to finance their long-term plans. Kato, Chiloane-Tsoka, Mugambe *et al.* (2024) echo this, citing the crucial role of sustainable SME growth in the long-term development of national economies. These perspectives reflect the diverse approaches to understanding sustainable growth. Asa and Prasad (2014) note the widespread recognition of the high failure rate among SMEs, which continues to prompt interest in studying factors contributing to sustainable growth, particularly in developing countries. Various theories and empirical models have been developed to explore various variables related to sustainable growth.

Theodoraki *et al.* (2022) highlight the importance of entrepreneurial systems, arguing that sustainable enterprises, when effectively integrated into the ecosystem, are well positioned for long-term survival.

2.6.2. International context of the SMEs sector

According to Tewari, Skilling, Kumar and Woo (2013), in developing and developed countries, SMEs have received focused attention from policymakers in national governments and international institutions across. SMEs account for many enterprises in most countries and employ considerable numbers of people. SMEs are also viewed as an engine of new growth and innovation (Adomako, Amankwah-Amoah, Donbesuur *et al.*, 2022). The entry and exit of firms that drive economic dynamism primarily occur in the small- and medium-sized firm ecosystem and fuel growth. In-firm productivity improvement in the SME sector is a major driver of overall economic productivity growth.

Despite their significant contribution to economic growth and employment, small and medium enterprises (SMEs) continue to encounter persistent obstacles that hinder their performance and long-term sustainability. Tewari *et al.* (2013) identify several challenges and barriers faced by SMEs, including shortages of business knowledge, limited access to finance, regulatory hurdles, and insufficient technological adoption. One key challenge is a lack of business knowledge, which impedes effective decision-making and strategic planning (Mehta, Qazi, Haque *et al.*, 2025). SMEs often struggle to access vital information and resources, which can lead to mismanagement and failure to capitalise on market opportunities.

Additionally, financial access is a significant barrier for SMEs. Many funding institutions require guarantees that small businesses cannot provide, limiting their ability to secure necessary capital (Aggarwal, Mondal & Chakraborty, 2022). Counterarguments suggest that some SMEs may not adequately explore alternative funding sources, such as crowdfunding or microfinance, which could mitigate these financial constraints (Manzoor *et al.*, 2021).

Tewari *et al.* (2013) also note the issue of hidden trade and government taxes arising from a lack of regulation and an inefficient administrative bureaucracy.

This can create an uneven playing field, as larger companies may navigate these complexities more efficiently than SMEs (Prasannath, Adhitari, Gronum *et al.*, 2024). However, some argue that streamlined regulatory frameworks could enhance the overall business environment for all companies, potentially benefiting SMEs in the long run (Campos-Blazquez *et al.*, 2024).

The capacity to grow, which includes an unwillingness to diversify, is another critical issue identified. Many SMEs lack the ambition or resources to expand their operations or diversify their product offerings, which can stifle growth (Nguyen and Phan, 2020). Conversely, it can be argued that focusing on niche markets enables some SMEs to develop specialised products and achieve success without significant expansion (Morceiro, 2018).

Moreover, the lack of interest in adopting modern technologies limits the potential for innovation and competitiveness. The reluctance to invest in new technologies can hinder productivity and efficiency (Zhang *et al.*, 2023).

On the other hand, some SMEs may prioritise traditional methods due to cost constraints, believing that existing practices are sufficient for their market segment (Kumar & Singh, 2020).

A lack of electronic connectivity among institutions can also affect support services, leading to inefficiencies. Poor networking between entrepreneurs with similar business interests further exacerbates this issue, making it difficult for SMEs to share knowledge and influence policy (Camarinha-Matos *et al.*, 2019). However, counterarguments emphasise that digital platforms and social media can provide new avenues for connection and collaboration among SMEs (Mukherjee & Choudhury, 2022).

In summary, the challenges faced by SMEs, as outlined by Tewari *et al.* (2013), reveal a uniformity in the issues encountered globally, regardless of economic context. Addressing these barriers collectively is essential for fostering a more supportive environment for SMEs, which play a crucial role in economic development and innovation.

Scholars have highlighted the main inhibitors of sustainable growth in SMEs, which are closely related to skills, conceptualisation, competition, experience, financial management, entrepreneurial culture, and limited capital financing (Thomas & Lee, 2024; Cassia & Minola, 2011). Cassia and Minola (2011) add that an organisation's strategy, structure, environment, resources, knowledge, and capital acquisition through networks and social capital enhance entrepreneurial orientation, resulting in a successful entrepreneurial ecosystem that influences the growth and better performance of SMEs.

2.7. SME landscape in South Africa

Generally, South Africa has a diverse economy, and the key sectors that contribute to it are Finance (20 %), Government services (18 %), Wholesale (13.2 %), Manufacturing (13 %), Mining (8 %), Transport (10 %), Personal services (6 %), Construction (4.8 %), Agriculture (3 %) and electricity. SMEs contribute 52 % to 57 % of the GDP and 60 % of employment (The DTI, 2017). According to Abor and Quartey (2010), approximately 91 % of formal businesses in South Africa are SMEs. They account for almost 98.5% of the formal firms in the economy (Small Business Institute, 2016).

According to ECCSECC (2020), South Africa has 2.4 million diverse SMEs. Govuzela *et al.* (2019) state that in South Africa, most businesses are classified as SMEs, which contribute approximately 40% to all economic activity, making their growth and competitiveness crucial to the country's success. The SME sector employs 47% of the South African workforce, 13% of which is in manufacturing, and contributes more than 20% to the country's GDP (Liedtke, 2019).

The Role of Small Businesses in Developing Countries

SMEs are increasingly recognised as integral components of developing and developed economies (Diabate *et al.*, 2019). Previous research has underscored SMEs' significant role in national economies (Ayandibu & Houghton, 2017). According to Pascual *et al.* (2019), SMEs substantially contribute to a country's sustainable growth. In a study by Bayati & Taghavi (2007), it is emphasised that the SME sector is pivotal, as a robust SME sector can significantly bolster the economy by contributing to Gross Domestic Product (GDP), reducing unemployment, alleviating poverty, and fostering entrepreneurial endeavours.

Consequently, governments worldwide are urged to prioritise the development of the SME sector to stimulate economic expansion. Given its widespread geographical reach, SME activity has a more pervasive impact at grassroots levels than larger organisations (Das *et al.*, 2020). Achieving sustainable growth in this sector promises to foster stable and enduring national development (Das *et al.*, 2019). Wyne and Hafeen (2019) affirm that SME performance is of fundamental importance to both developed and developing nations. Govuzela and Mafini (2019) echo the sentiment that SMEs play a strategic role in shaping a country's economic performance.

2.7.1. Composition of SMEs across BRICS Countries

Across BRICS, SMEs are defined with specific thresholds for employment and annual turnover, reflecting the diverse economic landscapes of the member countries. In Brazil, the Brazilian Institute of Geography and Statistics (IBGE) defines SMEs as businesses with between 10 and 249 employees. The threshold for annual turnover is approximately \$963,623,000 (IBGE, 2023).

In Russia, SMEs are defined as businesses with fewer than 250 employees, with a maximum annual turnover of about \$203 million (Rosstat, 2023). In India, SMEs employ between 11 and 250 individuals, and their annual turnover threshold is approximately \$12,022,900 (Ministry of MSME, Government of India, 2023). For the manufacturing sector in China, SMEs can have up to 2,000 employees, with a minimum threshold of 300 employees (National Bureau of Statistics of China, 2023). In South Africa, SMEs in the manufacturing sector are classified with varying thresholds based on employee numbers and turnover.

SMEs in this category employ between 11 and 250 people, with an annual turnover cap of less than \$8,837,861 (Department of Trade, Industry and Competition, 2023).

These definitions illustrate the significant role SMEs play across the BRICS economies, which vary in size and economic contributions. Understanding these thresholds is crucial for formulating policies to support SMEs' growth and sustainability within the BRICS framework. The background is provided to give a picture of the study's focus area and ensure that the strategies are applied and transferable to other countries.

2.8. Overview of the manufacturing sector of the BRICS countries

The manufacturing sector is generally considered essential to economic growth. The key benefit derived from the manufacturing sector is labour absorption (Signe and Johnson, 2018). A thriving manufacturing sector has seen France, Japan, Germany, the United States, and the United Kingdom grow into the world's wealthiest nations, along with China, one of the fastest-growing economies (Signe & Johnson, 2018). Collectively, BRICS countries seek to enhance trade and investment among themselves, focusing on boosting the competitiveness of their respective manufacturing industries (BRICS Economic Cooperation 2023; BBCAR, 2021; Zhao, Sokolov, Cassiolato *et al.*, 2025). Secondly, BRICS intends to deepen collaboration in R&D to enhance its combined industrial competitiveness (Kumar & Singh, 2023; Mukherjee & Choudhury, 2022). This points to the great intentions for collaboration among these countries and the documented plans under review in the study.

According to Santos *et al.* (2023) and Ivanova (2022), for BRICS countries, a network society can facilitate the development of partnerships and knowledge management systems that network between members of the value chain, that is, manufacturers, suppliers, and other stakeholders with common interests (i.e., commercial and scientific). In general, BRICS cooperation is essential for promoting collaboration among its member countries in the manufacturing industry (Zhao & Chen, 2023). The Alliance allows the BRICS countries to pool their resources, expertise, and markets to drive growth and competitiveness in this vital sector (BBCAR, 2023; Patel & Zhang, 2023).

Building a Network Society, BRICS can facilitate the development of partnerships and knowledge management systems that connect manufacturers, suppliers, and other stakeholders with shared interests, such as commercial and scientific endeavours (OECD, 2020c; Ryabkov, 2025).

The manufacturing sector is the second-largest contributor to India's GDP after the services sector (Sinha, Mishra, Manogna & Prabhudesai, 2022). Various government initiatives, such as Make in India, MUDRA, Sagarmala, Startup India, and Freight Corridors, alongside significant contributions from states, are expected to raise the share of the manufacturing

sector in the foreseeable future (Rao & Sharma., 2023). However, for India to increase its manufacturing share of GDP to around 25 %, it will need to significantly boost research and development (Rahman & Howlader, 2022).

Additionally, the quantum of value addition must be enhanced at all levels, and the government needs to offer attractive remuneration to motivate individuals to join the manufacturing sector (Aggarwal *et al.*, 2022; Ouanhlee, 2022). The main industries dominating the Indian economy are iron & steel, textiles, sugar, cement, paper, , information technology, metrochemical, automobiles and banking and insurance. Manufacturing, services, and agriculture are the largest sectors of the Chinese economy, employing much of the population and accounting for the largest share of GDP. China is one of the largest countries in the world and a significant manufacturer and producer of industrial goods. Services, manufacturing, and agriculture are the leading sectors in the Chinese economy (Ross, 2022).

China's manufacturing and industrial sector accounted for nearly 38 % of China's GDP in 2020. However, China's industrial production has declined in recent years, falling to 3.8% in November 2021, down from 7% a year earlier.

China's manufacturing sector has been declining as a %age of GDP, although it still boasts a thriving automobile manufacturing industry and remains the world's largest car manufacturer (Singhal & Singhal, 2019). In 2010, manufacturing and industry accounted for 45.5% of GDP; however, this decline is likely due to China's transition toward a domestically driven consumer spending economy (Guo & Xu, 2022).

The range of products within China's manufacturing sector includes iron, steel, aluminium, textiles, cement, chemicals, toys, electronics, rail cars, ships, and aircraft.

A similar decline has been observed in Brazil, where the manufacturing sector has faced challenges (Marconi *et al.*, 2016). In South Africa, key economic sectors include mining, transport, energy, manufacturing, tourism, and agriculture. The manufacturing industry in South Africa is primarily dominated by agro-processing, automotive, chemicals, ICT and electronics, metals, textiles, clothing, and footwear (Kaplan, 2015).

China is one of the world's largest countries and a leading manufacturer of industrial goods. As of 2020, China's manufacturing and industrial sector accounted for almost 38% of the nation's GDP. However, this sector has experienced a decline in recent years, with industrial production growing at only 3.8% in November 2021, down from 7% a year earlier (Chen *et al.*, 2022; Ross, 2022).

China is known for its dominant and rapidly growing manufacturing sector. It is a global leader across industries such as electronics, automotive, textiles, and heavy machinery (Zhao, 2021). High production volumes, a large workforce and significant investments in research and development have contributed to China's manufacturing success (Zhao, 2021). Exports a wide range of manufactured goods to international markets. China has the largest industrial output among the BRICS countries, with a highly diversified manufacturing sector (Li, 2017).

The services sector is the leading contributor to India's GDP. It is followed by the manufacturing sector.

Various government initiatives, such as Make in India, MUDRA, Sagarmala, Startup India, and Freight Corridors, along with a plethora of contributions from states, will soon increase the share of the manufacturing sector (Sinha, Mishra, Manogna & Prabhudesai, 2021). Despite this notable success, if India intends to increase its manufacturing share of GDP, the industry must balance that intention with investment in research and development. This goes with its budget allocation. The value-add must be increased across the entire spectrum, and the government should consider offering competitive salary packages to motivate people to join the manufacturing sector.

The major industries in the Indian economy include iron and steel, textiles, sugar, cement, paper, petrochemicals, automobiles, information technology (IT), banking and insurance (Singh & Gupta, 2023). In contrast, the largest sectors of the Chinese economy are services, manufacturing, and agriculture, which employ most of the population and contribute significantly to GDP (Singhal & Singhal, 2019).

India leads in the production of electronics, textiles, machinery, and automotive products. India has a diverse manufacturing sector, with strengths in pharmaceuticals, software development, automotive, and textiles.

The government has launched initiatives such as "Make in India" to promote manufacturing, increase foreign direct investment (FDI), and create jobs. India's manufacturing sector has shown consistent growth and potential for further expansion, with significant industrial output in pharmaceuticals, textiles, and software development (Perwez, Vijayalakshmi and Perwaiz *et al.*, 2016; Kumar & Singh, 2023). India has a diverse manufacturing sector, with strengths in pharmaceuticals, software development, automotive, and textiles.

Russia's manufacturing sector predominantly concentrates on heavy industries, particularly aerospace, defence, and energy (Uskova, Lukin, MeL'Nikov *et al.*, 2017; Plotnikov & Vertakova, 2014). However, the sector has faced several challenges, including outdated infrastructure, bureaucratic hurdles, and the impact of international sanctions, all of which have significantly impeded growth (Dmitry, 2021). In response, ongoing efforts have been made to modernise and diversify the manufacturing base, aiming to enhance global competitiveness (Plotnikov & Vertakova, 2014).

Despite these challenges, Russia's industrial output remains substantial, primarily due to its strong emphasis on heavy industry (Doroshenko *et al.*, 2021).

The Brazilian manufacturing sector encompasses a range of industries, including automotive, aerospace, and agribusiness (Martins, Branco, Melo *et al.*, 2023). The industry has faced numerous challenges, including an unstable economy, political uncertainties, and infrastructural inadequacies (Morceiro, 2018). To counter these issues, the Brazilian government has implemented various incentives to stimulate manufacturing and attract foreign investment (Morceiro, 2018; Hiratuka & Sarti, 2017).

This diversification has allowed Brazil to maintain a robust industrial output, with notable strengths in automotive manufacturing and agribusiness (da Silva Medina and Pokorny, 2023; Morceiro, 2018).

South Africa's manufacturing landscape includes automobile manufacturing, chemicals, and metals processing (PwC South Africa, 2024). The sector has been challenged by labour strikes, energy supply constraints, and increasing competition from other emerging markets (Ali & Wasim, 2022). Various initiatives have been introduced to bolster local manufacturing capabilities (Ndlovu & Khumalo, 2022).

South Africa's industrial output is characterised by its focus on automobile manufacturing, chemicals, and metal processing, although the dynamics within these subsectors can fluctuate over time (Khoza *et al.*, 2022).

The comparative analysis of manufacturing sectors across the BRICS countries reveals distinct dynamics shaped by economic, political, and infrastructural factors. Additionally, the COVID-19 pandemic has profoundly impacted global manufacturing trends, further complicating the landscape for these emerging economies (Expert Market Research, 2025). As each country navigates its unique challenges and opportunities, the potential for growth and diversification remains a focal point for future developments.

This comparison highlights the dynamics within the manufacturing sector. The relative performance of these subsectors can vary over time, especially considering the substantial impact of the COVID-19 pandemic on global manufacturing (Bhatia, Gupta & Rajput, 2023).

2.9. The Importance of Manufacturing in BRICS Countries

BRICS countries consider the manufacturing sector one of the most important sources of growth; it can transform the economy's structure, create new jobs, and improve labour quality and living standards (UNIDO, 2020; BRICS Economic Cooperation, 2019). Growth in the production and export of value-added goods would allow BRICS economies to gain more significant benefits from international cooperation, increase their role in global ecosystems, and enhance their competitiveness (Abdeldjalil *et al.*, 2024; World Bank, 2021; BRICS New Development Bank, 2022; Nach & Ncwadi, 2024; Zhang *et al.*, 2022).

Economic growth driven by industrial and mining development will strengthen economic ties among BRICS countries (Isheloke, 2024). This growth will be based on the development of advanced technologies, innovations, and downstream value addition. Through participation of the public and private sectors as appropriate in implementing national development programs, as well as international industrial cooperation and partnerships in the BRICS countries (OECD, 2022; Patel *et al.*, 2023).

2.10. Manufacturing Landscape in South Africa

2.10.1. Historical Context

Understanding the historical trajectory of manufacturing in South Africa is imperative for understanding its current condition. Positioned as an upper-middle-income country in sub-Saharan Africa by the World Bank, South Africa exhibits significant income inequality, with the top 10 % of the population accounting for a substantial share of the nation's income (McKeever, 2024; World Bank, 2018). Notably, South Africa boasts the production of high-quality machinery and components, with manufacturing contributing significantly to its economy, accounting for 13% of GDP, followed by construction at 4 % and trade at 3 %, (Statistics South Africa, 2018).

From the apartheid to the post-apartheid period, the manufacturing sector has been shaped by various economic and political factors, influencing its resilience (Mohamed and Fine, 2025). However, the sector grapples with infrastructural limitations, skills shortages, and global economic fluctuations, hampering its agility in responding to market demands (Avenyo *et al.*, 2021).

Hence, delving into the innovation ecosystem can elucidate how collaborative efforts, knowledge exchange, and creativity bolster manufacturing agility (Naicker, Le Roux, Bruwer *et al.*, 2017).

According to Msomi *et al.* (2019), the South African government has earmarked manufacturing SMEs as pivotal to augmenting formal and informal job opportunities to combat the country's high unemployment rate, which stands at 26.7 % (Statistics South Africa, 2018).

However, Borat and Rooney (2017) underscore that the traditional factors contributing to the competitiveness of the South African manufacturing sector, including low labour costs, reliable power supply, and government support through grants and tariffs, have dwindled. Rising wages outpacing productivity growth and limitations imposed by World Trade Organisation (WTO) obligations have curtailed the government's ability to implement protectionist policies.

Msomi *et al.* (2019) advocate that Manufacturing SMEs to maintain competitiveness and sustainability by judiciously managing scarce resources through practical information and control systems facilitated by Management accounting systems. At the provincial level, the SME sector is delineated as follows: 39% in Trade, 19% in Construction, 16% in Community services, 7% in Agriculture, 7% in Finance, 6% in Manufacturing, and 5% in Transport (ECSECC, 2021). Despite recognition, the manufacturing sector's contribution to economic growth and employment has waned over time (Statistics SA, 2021).

Leveraging advanced technology and infrastructure in South Africa's manufacturing sector can support automobile manufacturers' transition from fossil fuels to clean energy. Prompted by the need to diversify amidst the COVID-19 pandemic, the South African manufacturing sector presents a compelling opportunity for global investors. With its expertise in advanced technologies and ability to deliver superior products, the sector is well positioned to foster Africa's economic advancement.

2.10.2. Challenges Faced by Manufacturing SMEs

Concerns about the performance and sustainability of South African SMEs have grown over the past decade, particularly as evidence increasingly points to weak growth patterns within the sector. In a study, Leboea (2017) confirmed that SMEs are experiencing stagnation in generated turnover and employment growth in South Africa. Using the employment measure, especially in the South African context, is vital, as it reflects social stability (Business Environment Specialists, 2015).

South Africa's persistent socio-economic challenges continue to place significant pressure on policymakers to identify strategies that can stimulate inclusive and sustainable economic growth. According to MerSETA (2017), unemployment and inequality in South Africa are high compared to the rest of the world, and to overcome these challenges, jobs must be created. A key source of jobs is the manufacturing sector.

The automotive industry, chemicals, information and communication technology, electronics, metals, textiles, clothing, and footwear dominate the manufacturing sector.

Manufacturing employment has seen significant shifts over the past several decades in advanced economies; the share of manufacturing in aggregate employment has been steadily declining for over 4 decades in advanced economies, with most countries experiencing outright declines in the number of manufacturing jobs, except Malaysia, China, and Thailand (World Economic Forum, 2018).

Concerns about the long-term viability of manufacturing SMEs have intensified as many continue to struggle under evolving economic, technological, and operational pressures. Ngibe, Lekhanya, and Garbharran (2019) state that manufacturing SMEs face various challenges that have significantly affected their growth and performance, resulting in shutdowns in recent years. The lack of dedication and focus on sustainable growth in the manufacturing SME sector can be attributed to the entrepreneurial characteristics of SMEs and the lack the awareness, expertise, skills, financial support, and qualified personnel necessary to build an environment conducive to sustainable growth within an organisation.

The rapid evolution of global markets has placed unprecedented pressure on manufacturing SMEs to adapt their operations to remain competitive and sustainable.

Msomi *et al.* (2019) assert that manufacturing SMEs have continuously faced transformation challenges globally in a fast-paced, technologically advancing world and therefore need to be more focused on cost efficiency to be sustainable. According to Choi and Lim (2017), the manufacturing sector is the backbone of the economy and is paramount in regional economic and social development. Lekhanya (2016) presents some of the internal challenges the SME sector faces that are critical to success. These include incompetence at the management level, continuous capital shortages, marketing and personnel problems, management skills, financial control, cash flows, costing, and trade skills. Access to finance is a critical prerequisite or precondition for SME growth and sustained performance.

Despite the crucial role SMEs play in economic development, many continue to face persistent obstacles that limit their ability to grow and remain competitive. OECD (2018a) cites structural challenges and market failures, including information asymmetries, high transaction costs in servicing SMEs, and a lack of financial skills and knowledge among SME business owners.

Echoing this view are Msomi, Ngibe, and Nyide (2019), who state that long-term growth and competitiveness of manufacturing SMEs have been compromised by perpetual and often acute constraints on their access to formal sector finance, lack of entrepreneurial knowledge, poor business skills, competition, innovation, education, technology, innovation, and risk factors. Garcia-Fernandez *et al.* (2022) cite quality, productivity, customer satisfaction, and delivery as problems plaguing SMEs today.

In his statement, he proposes that SMEs must manage waste to meet quality requirements and delivery timeliness, which can be achieved through the lean philosophy.

Bhatt, Rehman and Rumman, (2020) mention organisational culture as the most important determinant of firm success. Chang *et al.* (2017) emphasise that innovation capability is now considered a competitive advantage, and if a company is not innovative, the market can easily outweigh that firm in no time. Alshanty and Emeagwali (2019) state that the owner of an SME must create new knowledge through education to remain relevant and competitive. Studies worldwide have identified several factors that affect the success or failure of SMEs.

Most research on SME growth, performance, and sustainability factors is conducted in the context of developed countries, and results differ due to the diversity of cultural and economic contexts (Goyal *et al.*, 2015). The South African SME failure rate is among the highest in other developing countries (Fatoki, 2014; Leboea, 2017).

According to Maladzhi (2012) and Lekhanya (2015), this is due to several factors, including leadership and business awareness. Jayasekara, Fernando, and Banjani (2020) point out the lack of access to finance, default in planning, insufficient market research, inadequate managerial skills and or limited educational background, and inexperience encompassing a lack of technical training as causes of SME failure.

Ngibe and Lekhanya (2019) posit that the leading causes of SME failure include poor management skills, lack of business knowledge, lack of leadership skills, and poor entrepreneurial culture, coupled with high barriers to market entry. Sibiyana, van der Westhuizen, and Sibiyana (2023) add that access to finance through back credit is one of the main constraints affecting SMEs, as they run out of financing options.

Additionally, Sibiya *et al.* (2023) noted that firm characteristics are crucial to banks' credit allocation process, as they provide borrowers with valuable information about the overall business and its growth prospects. Yoo *et al.* (2019) assert that sustainable firm growth is not the result of a single factor but rather a combination of company strategy, structure, and processes that fit together.

Legislative and regulatory frameworks have enabled Russia, China, and India to be the forerunners in the manufacturing sector, highlighting the importance of developing a framework that facilitates cross-learning on organisational agility (Zhang and Wang, 2023). The impact on the manufacturing SME sector can be significant if there is a proliferation of successful organisational agility strategies alongside the development of capabilities and response mechanisms (Patel, Sharma & Kumar, 2023).

Given their essential contributions to the financial system, success is vital for South African SMEs.

This study will introduce a unique element, drawing on recent literature, in its attempt to conceptualise a possible framework for the relationship between factors of sustainable growth and their role in improving the business performance of SMEs. The current study expanded on this recommendation by considering BRICS countries to develop a best-practice framework for OA in South Africa.

Increased mergers and acquisitions are also evident in the furniture industry as companies seek to sustain and enhance their market positions. For example, Littlejohn and Co., a private investment firm based in Connecticut, acquired a manufacturer of outdoor furniture and accessories (Johnson, 2023; Gombar, Sira, Heckova *et al.*, 2022).

The operational and strategic constraints confronting manufacturing SMEs have continued to undermine their ability to compete effectively and achieve sustainable growth. Mbatha and Ngibe, (2017) assert that manufacturing SMEs face financial difficulties, poor marketing strategies, and skills development. Despite these SMEs being acknowledged as significant contributors to GDP and employment, they find themselves, in South Africa and other countries, continually obstructed and burdened by financial difficulties in their growth and innovation processes (Malepe 2014).

One lesson learned worldwide is the importance of organisational agility. Currently, there are agility frameworks, but these frameworks are not sector-specific or replicable.

Their nature is trial-and-error due to the lack of specificity for a particular industry. Second, across BRICS countries, there is no industry-specific organisational agility framework that can be replicated or facilitate cross-learning amongst them.

The two lowest contributors from the BRICS (South Africa and Brazil) faced idiosyncratic issues, including declining production and import volumes affecting furniture manufacturing. Brazil cannot mitigate or overcome international competition from China (Da Rocha Junior and Gazoli de Oliveira, 2019), while South Africa cannot overcome socioeconomic issues that hamper production and competition (Serumaga-Zake, & van der Poll, 2021). South Africa and Brazil display production features, and imports decline in the furniture manufacturing sector. Brazil struggles to mitigate international competition from China, while South Africa cannot overcome socioeconomic issues that hinder production and competition.

Across BRICS countries, the manufacturing sector is considered one of the most important sources of growth; it has the potential to transform the economy, create new jobs, and improve labour quality and living standards (Magacho *et al.*, 2019). Growth in the production and export of value-added goods would allow manufacturing SMEs to tap into new markets and reduce the influx of cheap imports, which further suffocate the local market (OECD, 2008). Legislative and regulatory frameworks have enabled Russia, China, and India to be the forerunners in these sectors, highlighting the importance of developing a framework that facilitates cross-learning on organisational agility (Gcume & Mohapeloa, 2025).

Impact in the manufacturing SME sector can be achieved by proliferating successful organisational agility (OA) strategies, building capabilities, and establishing response mechanisms (Alokshe, Adedokun & Iyiola, 2025). The framework for the South African SME manufacturing sector is based on BRICS best practices, which are underpinned by the fact that BRICS countries, particularly China and India, have some of the world's best entrepreneurial ecosystems. Therefore, lessons from these developing countries can be effectively replicated in South Africa (Bate, 2021).

Govuzela and Mafini (2019) assert that in the South African business setting, only 1 in 10 newly opened businesses continues to operate for more than 10 years. They attribute this high failure rate to a lack of access to finance, to skills and experience in monetary and social control, and to economic factors such as poor sales and weak growth prospects (Bushe, 2019). Given their essential contributions to the financial system, success is vital for South African small and medium enterprises. (Msomi & Olarewaju, 2021).

This study will introduce a unique element, based on recent literature, by conceptualising a possible framework for sustainable growth factors and their role in improving the business performance of SMEs (Bugwandin, Anwana & Aroba, 2025). Given the existing literature, findings, and analyses of studies on SME performance, it is evident that, due to the distinctions among SMEs, there are no specific factors that consistently promote success or failure in every case (Bushe, 2019; Yahaya & Nadarajah, 2023). Many studies have been unable to provide a clear understanding of the precise causes of failure, as factors considered failure-related may also contribute to success (Allal-Cherif *et al.*, 2024).

Despite numerous initiatives to strengthen the small business sector, concerns persist about the effectiveness and relevance of government support mechanisms for SMEs. A study by SEDA (2020) revealed that the biggest weakness of government support and training is its adherence to a 'one-size-fits-all' approach. Poor coordination results in many SMEs being subjected to repetitive training when seeking support, which may not address the specific needs of their business. The same study indicates that many SME support programs are duplicates of one another, and in many instances, the support received from various SME supporting agencies is not aligned.

This results in business frustration and SMEs being stuck at a specific phase of their business growth due to insufficient support. There seems to be a lack of direction or coordinated effort among agencies to assist SMEs in a straightforward, comprehensive journey. From a methodological point of view, suggestions were made to address challenges stemming from a lack of effective entrepreneurial ecosystems, including providing direct support where needed and monitoring post-support to ensure impact and improvement in the SME.

2.10.3. The Diverse Strengths of the Manufacturing Sector in the BRICS Countries

It should be acknowledged that the strength of each BRICS member country in the manufacturing sector varies, and so does the priority focus. This, therefore, affects the extent to which the best-practices model for organisational agility proposed in the study is applied. Secondly, the disinvestment by major industries operating in South Africa exerts more pressure on the country to create a sustainable manufacturing environment. Examples of these disinvestments are Good Year (tyre manufacturing company), Volkswagen (Automotive manufacturer) in Uitenhage, Eastern Cape Province, South Africa. Additionally, risk and investment appetite vary across countries and are further informed by current skill levels, market interest, necessity, and sector performance benchmarking post-COVID-19 pandemic. For example, Brazilian SME policies resemble those of South Africa, showing growing interest and strides toward cutting bureaucratic red tape. China has advanced in technology and exports faster than its BRICS counterparts; India has made notable investments in skills development through tertiary education institutions offering business management skills; and Russia still faces geopolitical tensions, bureaucratic hurdles, and exclusions from business trade partnership opportunities.

Brazil's industries are mining and agriculture, with manufacturing ranked third largest in the Americas, Sawe (2017). The Russian economy is dominated by agriculture, industry, and service (Zhuravskaya, Guriev & Markevich, 2024). India's manufacturing sector is the second-largest contributor to the country's GDP, followed by agriculture and the services sector (Mandurnekar, 2024; Perez *et al.*, 2016). At the helm of the Chinese economy, manufacturing, services, and agriculture are the most significant sectors (Ross, 2022), with electronics, rail cars, ships, textiles, cement, chemicals, toys, iron, steel, and aluminium aircraft as dominant products. South Africa has mining, transport, energy, manufacturing, tourism, and agriculture, with agro-processing, automotive, chemicals, ICT and electronics, metals, textiles, clothing, and footwear as dominant outputs (SEDA Annual Report 2022/2023).

2.11. Furniture manufacturing sector

The furniture manufacturing sector is not limited to using wood. Other materials used include metal, leather, glass, and plastic to increase its durability and elegance. The industry has grown over the years and is no longer confined to manufacturing chairs and tables. The study focused on the BRICS countries due to their similarities and developing nature. Second, there is so much learning that other countries in the BRICS bloc can gain from each other. For instance, China is the largest producer and exporter of furniture globally, having achieved 20 years of consecutive growth. It is focused on export-driven industrial production and substantial foreign investments (Mingliang, 2024).

As a result, the Chinese furniture market has become a massive industry with more than 5 million employees, exporting more than 35% of its total furniture production and satisfying 99% of domestic demand (Lin *et al.*, 2019). Many other well-known manufacturers from Italy, Japan, and the United States also entered China's furniture market due to the availability of a vast domestic market, lower labour costs, and declining import tariff rates (Bansar, n.d). Increased merger and acquisition activity can be seen in the furniture industry to sustain and maintain its market position.

2.11.1. Performance of the Furniture Market

The manufacturing sector has been inundated with challenges. This is due to geopolitical dilemmas, supply chain logistical disruptions, varying consumer preferences, and increasing regulatory compliance (Abdeldjalil *et al.*, 2024; Ratnasingam, 2022). During the COVID-19 period, the demand for furniture was significantly reduced. Despite these challenges, several positive factors, such as growing global demand, technological advancements, and increased investment in automation and digitalisation in the industry, are influencing the market. As a result, the future for the manufacturing sector remains positive (Lin, Zhang & Cao, 2019).

Although the COVID-19 pandemic has caused significant hardships for manufacturers, Kannan *et al.*, (2023) argue that those who invested in digitalisation and automation of their processes will be best positioned for long-term success (Li, 2021).

Surging shipping costs, persistent supply chain bottlenecks, and deteriorating trade relations between global superpowers severely impact the furniture industry's global supply chains (Tanujaya *et al.*, 2022).

Manufacturers who can effectively balance cost pressures while maintaining a strong focus on quality will likely survive the current crisis and become more resilient. Among the factors that could affect the manufacturing market in 2023 is the adoption of advanced technology, such as AI, robotics, and the Internet of Things (IoT), which has the potential to improve overall efficiency and productivity while reducing costs (Goyal & Grover, 2012). Additionally, analysts believe that sustainability and environmental awareness will become increasingly important trends, as more investors and consumers prefer companies that prioritise these values and develop eco-friendly products (Raihan, 2024). Finally, geopolitical factors, such as trade tensions and changes in government policies, could also impact global trade, which encompasses the manufacturing market, with the Russia-Ukraine war having the most significant effect (Orhan, 2023).

The study focuses on South Africa because it has the lowest GDP contribution (World Economic Forum, 2020) and the highest unemployment rate (34 %), exacerbated by the highest job losses in the manufacturing sector among BRICS member states.

Sherediy and Karwowski (2014) assert that manufacturing sectors can generate substantial employment multipliers across value chains due to their natural high employment multiplier. Signe and Johnson (2018) affirm that labour absorption is derived from the manufacturing sector. By absorbing, diffusing, and developing new technology, manufacturing contributes to advancing technology and innovation (Teece, Peteraf & Leih, 2016).

In addition, it supports and facilitates the development of national skills and capabilities, as well as the establishment of a knowledge-based economy (Muduli, 2016). For example, the automotive sector supports several related sectors, including parts suppliers, transport, insurance, maintenance and the tourism industry associated with recreational activities such as leisure trips and car rallies. However, some manufacturing sectors have low employment multipliers across value chains.

These sectors are less technologically advanced and have fewer skilled labour needs. They also tend to be more labour-intensive, leading to lower wages and fewer opportunities for advancement.

In summary, the current environment presented challenges and opportunities for the manufacturing market in 2023. However, companies can succeed and strengthen their long-term market position with the right managerial strategies and high flexibility (Zopounidis & Lemonakis, 2024; Zhang & Sharifi, 2000). Surging shipping costs, persistent supply chain bottlenecks, and deteriorating trade relations between global superpowers severely impact the furniture industry's global supply chains. This trend creates a need to invest in transforming supply chains through digitalisation, sustainable practices, and reshoring to increase flexibility and reduce costs (Kannan, Gholipour & Bai, 2023).

2.12. Summary of this Chapter

In summary, assessing the level of agility in furniture manufacturing SMEs in BRICS countries requires a multidimensional approach that considers market conditions, regulatory environments, technology adoption, workforce skills, and other factors that impact agility in manufacturing.

Dockel and Ligthelm (2015) indicate that there is a growing realisation that sustainable growth of small businesses has been associated with many factors, including policy measures directed at the small business sector and macroeconomic, industry and firm-specific factors. On the other end of the scale, many business entrants in developing societies are not entrepreneurs by choice and are only rent seekers awaiting employment opportunities in a growing economy, thus increasing the number of wage-employment employees. According to Zahan (2017), these businesses will remain survivalists or eventually close.

The analysis in this study confirms that the human factor, particularly the entrepreneurial endowment and motivation of the business, largely dictates its survival and growth potential.

The focus should be on small businesses demonstrating entrepreneurship and support strategies, and it should be tailored to the regional economy, its needs, and its dynamics.

Entrepreneurship, in its purest form, is at the level of SMEs, where individualism, self-reliance, and risk-taking are particularly prominent.

Chapter 3 of the study will review literature on the manufacturing SME sector, growth, competitiveness, and agility. Amongst the factors that drive OA for SMEs is support. For this study, support will be encapsulated under the Entrepreneurial ecosystem approach. The chapter begins with theoretical underpinnings of the study and a diagrammatic representation of the conceptual framework. Literature has explored the links among the characteristics of thriving ecosystems or ideal ecosystems, the challenges facing SMEs, and the position of the manufacturing sector in BRICS.

CHAPTER 3

LITERATURE REVIEW

3.1. Introduction

This section presents discussions and reviews of the theoretical foundations of three major theories that help explain the sources of firms' competitive advantage, and that can drive firms towards greater agility. The role of theory in fulfilling the study's goals is to map internal (enablers and capabilities, practices and processes, sense-response frameworks of agility) and external factors (policies, legislation, and regulatory frameworks) influencing a firm's agility towards developing a framework for the manufacturing industry in South Africa.

3.2. Theoretical Framework

The theoretical foundation of this study provides an overview of the concept of organisational agility in the manufacturing sector, as it contributes to the long-term success of manufacturing firms. Secondly, support systems underpinning the envisaged growth and performance are further distilled; the internal business environment impacting SMEs' sustainable growth, performance and competitiveness, as well as the external business environment impacting SMEs' sustainable growth, are analysed. Choi and Lim (2017) also argue that creating a favourable business environment is crucial for SMEs undertaking technological change.

This section, therefore, examines existing theories and explains the multidimensional factors that influence agility, ultimately driving sustainable growth and performance of SMEs in the manufacturing sector. Simultaneously, the empirical literature will scrutinise pertinent studies investigating the determinants of an agile organisation. One factor influencing an SME's agility is the entrepreneurial ecosystem in which it operates.

3.2.1. Dynamic Capability Theory

Dynamic capability theory emerged in the 1990s within strategic management, primarily articulated by David Teece and his colleagues (Teece, Pisano & Shuen, 1997). This theory asserts that organisations must continually develop and adapt their capabilities to respond effectively to rapidly changing environments. The resource-based view (RBV) emphasises that not only the resources themselves but also the ability to build, integrate, and reconfigure them is crucial for sustaining a competitive advantage (Teece *et al.*, 1997). Teece (1997) defines dynamic capabilities as the organisational processes that enable firms to adapt, integrate, and reconfigure their internal and external competencies in a constantly changing environment. Three key components, sensing, seizing, and transforming, are central to this framework.

Sensing involves identifying and evaluating market opportunities or threats through market analysis and environmental scanning. This proactive approach enables organisations to stay informed about trends and changes in their operating environments (Teece, 2007). Seizing focuses on mobilising resources to capitalise on these identified opportunities. This process often requires investment in new products, services, or processes.

This component emphasises the importance of timely action in capitalising on emerging market dynamics (Teece, 2007). Transforming is an organisation's ability to reconfigure and renew its resources and processes over time to remain competitive. This ongoing transformation allows firms to adapt to present challenges and future disruptions (Teece, 2007). Dynamic capability theory provides a framework for understanding how organisations thrive in volatile environments by developing the ability to sense, seize, and transform.

Recent studies have greatly enhanced our understanding of dynamic capabilities, highlighting their vital importance across contexts, particularly in digital transformation and organisational agility. Researchers have increasingly linked dynamic capabilities to digital transformation, emphasising that companies must adapt their capabilities to keep pace with rapid technological change. For instance, Bharadwaj *et al.* (2013) emphasise that companies must cultivate these capabilities to thrive in an evolving digital landscape.

Dynamic capabilities are essential for achieving organisational agility and responsiveness, especially for manufacturing SMEs facing unpredictable market conditions. Research by Vu (2020) indicates that these dynamic capabilities enable SMEs to navigate volatility effectively and adjust swiftly to market demands and changes.

The connection between dynamic capabilities and innovation processes has gained significant attention. Studies indicate that these capabilities enable businesses to meet customer needs better and leverage technological advancements. Teece (2018) highlights that organisations with strong dynamic capabilities are better at innovating and demonstrate greater resilience in the face of challenges. This gives them a better chance for long-term success in a competitive environment. In summary, the discussion on dynamic capabilities highlights their significant role in digital transformation, organisational agility, and innovation, making them essential to contemporary business strategy.

3.2.1.1. Relevance of Dynamic Capability Theory to Manufacturing SMEs and OA

Dynamic capability theory is crucial for small and medium-sized enterprises (SMEs) in the manufacturing sector. These organisations must continuously adapt to rapidly changing environments influenced by technological advancements, shifting customer preferences, and increased competition. Initially proposed by Teece (2007), the theory highlights that a firm's ability to develop, integrate and reconfigure its internal and external competencies is crucial for sustaining a competitive advantage. For manufacturing SMEs, which typically have fewer resources than larger firms, developing dynamic capabilities is essential for their survival and growth.

One of the key components of dynamic capability theory is the ability to recognise opportunities and threats in the market (Teece, 2007; Helfat *et al.*, 2009). For SMEs in the manufacturing sector, this involves actively conducting environmental scans to identify emerging trends and shifts in consumer demand. By staying attuned to market dynamics, these firms can make informed decisions regarding product development and innovation, enhancing their responsiveness.

For instance, a study by Kiiru, (2015) emphasises that SMEs engaging in market sensing are better positioned to seize opportunities and manage risks associated with changing market conditions.

Seizing opportunities is a crucial element of dynamic capabilities. Manufacturing SMEs must be agile in reallocating resources to exploit identified opportunities. This requires investment in new technology and processes, as well as fostering a culture that promotes experimentation and innovation (Zahra & George, 2002). For instance, SMEs that prioritise innovation in their operations can develop new products that better meet customers' evolving needs. Recent research by Jie, Gooi and Lou (2025) shows that SMEs with strong dynamic capabilities are more likely to succeed in launching innovative products, which is essential for maintaining competitiveness.

Transforming capabilities, which involve reconfiguring an organisation's resources and processes, are crucial for SMEs. As market conditions change, these companies must adapt their operations, workforce, and supply chain strategies to remain competitive. According to Dyer and Singh (1998), this transformation often requires leveraging partnerships and networks; collaborating with other businesses can offer access to additional resources and knowledge that improve a firm's adaptability. A study by Pundziene and Geryba (2023) underscores the importance of strategic alliances in facilitating resource reconfiguration and enhancing the agility of manufacturing SMEs.

The increasing significance of digital technologies is a crucial aspect of dynamic capabilities. Manufacturing SMEs that adopt digital transformation can significantly improve their dynamic capabilities by enhancing operational efficiency and responsiveness to customer demands. The integration of digital tools has become essential for SMEs seeking to enhance real-time decision-making and remain competitive in rapidly changing markets. A study by Raut, Narkhede, and Deshmukh, (2021); Valdez-Juarez, Ramos Escobar, Hernandez-Ponce *et al.*, (2024) indicates that digital tools enable SMEs to access real-time data, enhancing decision-making and allowing companies to respond more quickly to market changes. Integrating digital technologies is crucial for businesses to thrive in a competitive environment.

By honing their dynamic capabilities, firms can enhance their adaptability and resilience by focusing on sensing opportunities, seizing them effectively, and transforming their resources and processes (Teece, 2007; Vu, 2020). Developing dynamic capabilities will be vital for long-term success as organisations encounter ongoing change (Bharadwaj *et al.*, 2013; Teece, 2018). Organisational agility is crucial for manufacturing SMEs facing fierce competition and rapid technological advancements.

The dynamic capability theory offers a framework for understanding how these firms can cultivate agility through various mechanisms:

- a) Adaptation to market changes: (Vu, 2020) assert that SMEs can successfully identify market trends and adapt their strategies by leveraging dynamic capabilities. This adaptability is essential for survival in rapidly changing industries.
- b) Resource Reconfiguration: Dynamic capabilities allow SMEs to efficiently reorganise their resources, enabling them to quickly pivot in response to new opportunities or challenges (Teece, 2018).
- c) Innovation and New Product Development: SMEs with dynamic capabilities are better positioned to innovate, leading to new product development that meets changing customer demands (Bharadwaj *et al.*, 2013).
- d) Collaboration and Networking: Dynamic capabilities enable the formation of strategic alliances and partnerships, improving SMEs' capacity to share resources and knowledge, which is vital in an agile framework (Vu, 2020).

3.2.2. The Resource-Based View Theory

The firm's resource-based view (RBT) emerged in the late 1980s and early 1990s, primarily articulated by scholars such as Barney, Wernerfelt, Lockett *et al.* (2008).

RBT assumes that a firm's resources and capabilities are the main sources of competitive advantage and superior performance (Baia, Ferreira & Rodrigues, 2019). Unlike traditional economic theories that focus on market positioning or competitive forces, RBT posits that possessing a firm's unique resources can lead to sustained competitive advantage if they meet specific criteria: value, rarity, inimitability, and non-substitutability (VRIN), Barney (1991). The RBT is pivotal in shaping the strategies and operations of manufacturing SMEs.

For manufacturing SMEs, which often operate with limited resources compared to larger corporations, effectively leveraging unique resources is essential for sustaining competitiveness in a rapidly changing market.

One of the core tenets of the RBT is the emphasis on the uniqueness of resources. For manufacturing SMEs, possessing distinctive resources, whether they are tangible (like specialised machinery) or intangible (such as brand reputation and intellectual property), can significantly impact their ability to compete (Barney, 1991). Research indicates that SMEs with substantial brand equity or proprietary technologies are better positioned to differentiate themselves from competitors, thus enhancing their market position (Bharadwaj *et al.*, 2013). This differentiation is crucial for SMEs aiming to carve out a niche in crowded markets.

Resources within the RBT framework can be classified into tangible and intangible categories. Tangible resources refer to physical assets such as machinery and buildings, while intangible resources include brand equity, intellectual property, and organisational culture (Barney, 1991). In the current competitive landscape, intangible resources have become increasingly important because they play a crucial role in creating unique competitive advantages.

Capabilities are defined as an organisation's ability to efficiently utilise its resources through organisation-specific systems of various assets and processes. The ability to leverage resources effectively is crucial for achieving a sustainable competitive advantage.

Research has continued to evolve the RBT, particularly in understanding how firms can leverage their resources in dynamic and rapidly changing environments. The concept of dynamic capabilities is a significant advancement in strategic management. This idea builds on the RBT by highlighting the importance of firms adapting their resources and capabilities in response to environmental changes (Teece, 2007). This concept has become increasingly relevant as companies encounter disruptive innovations and changing market demands.

In recent years, studies have refined the RBT framework. Ong and Ismail (2008) emphasise the importance of digital resources as drivers of competitive advantage, showing how firms that effectively utilise digital technologies can outperform their competitors.

Similarly, Barrutia & Echebarria (2015) illustrate how integrating sustainability into the RBT can enhance resilience and long-term performance.

3.2.2.1. Relevance of RBT to manufacturing SMEs and OA

The theory assumes that resources are critical to superior performance because they explain and predict a firm's competitive advantage (Kozlenkova, Samaha, Palmatier, 2014). It posits that sustained competitive advantage is generated only when resources are VRIN (Barney, 2001). Hence, resources form the basis of value creation, ultimately leading to competitive advantage (Madhani, 2010; Fessehaie & Rustomjee, 2018). Effective resource mobilisation is essential for achieving agility (Kraaijenbrink, Spender & Groen, 2010). By leveraging their specific strengths, these firms can navigate challenges more effectively.

RBT explains how firms gain and sustain their competitive advantage over the long term, as this raises awareness of their capabilities, competencies, and resources (Grant, 1991). However, this requires continuously adjusting firms' dynamics with the external environment and internal competencies, capabilities, and resources. While VRIN resources remain important, their presence is insufficient to sustain a competitive advantage in a dynamic environment. Additionally, the RBT approach to developing a competitive advantage is incomplete because it relies solely on VRIN resources (Teece, 2020; Helfat & Peteraf, 2003).

Moreover, the RBT highlights the importance of capabilities, which refer to a firm's ability to effectively deploy and utilise its resources and can lead to improved operational performance (Teece, 2007). Lima *et al.*, (2020) found that SMEs prioritise capability development in product innovation and process optimisation to experience better financial outcomes and market performance. This capability-building approach enables them to respond to market demands quickly and effectively. In addition to individual resources and capabilities, the RBT emphasises the significance of resource combinations and synergies. Manufacturing SMEs can create competitive advantages by integrating their resources and capabilities to generate unique value propositions.

For instance, combining technological know-how with skilled labour can enhance production efficiency and product quality (Kraaijenbrink, Spender, & Groen, 2010). Findings by Ofori-Baafi (2024) suggest that SMEs that actively foster resource combinations are more agile and responsive to market changes, further emphasising the importance of the RBT in the manufacturing context. Collaboration and networking are also essential for RBTs in manufacturing SMEs. Forming alliances with suppliers, customers, and competitors can enhance access to and utilisation of resources (Dyer & Singh, 1998). By leveraging external resources through collaborative relationships, SMEs can enhance their innovation capacity and operational flexibility. Recent research by Zhang *et al.* (2022) highlights how strategic partnerships enable manufacturing SMEs to access new technologies and markets, reinforcing the relevance of RBT in driving growth and competitiveness.

Intangible assets, such as brand reputation and customer relationships, give SMEs a competitive advantage. These assets enable companies to adapt and innovate in response to changing market conditions (Barney, 1991). For instance, a strong resource pool can help SMEs differentiate themselves in crowded markets. Collaborating with other firms and stakeholders significantly enhances SMEs' resource capabilities. This partnership encourages knowledge sharing and skill development, enabling businesses to adapt to market changes swiftly (Dyer & Singh, 1998).

A networked approach promotes faster innovation and greater responsiveness, key traits for success in competitive environments. The RBT assumes that resources are critical to superior performance because they explain and predict a firm's competitive advantage (Kozlenkova, Samaha & Palmatier, 2014). Finally, the rise of digital technologies underscores the necessity of a robust resource base in the modern manufacturing landscape. As SMEs embrace digital transformation, integrating digital resources, such as data analytics and automation, becomes paramount (Raut *et al.*, 2021).

Firms that successfully leverage digital resources enhance operational efficiencies and improve their capacity for innovation and customer engagement, aligning closely with the principles of the resource-based view (RBT) theory (Barney, 1991; Peteraf, 2018).

The RBT provides a critical framework for understanding how manufacturing Small and Medium-sized Enterprises (SMEs) can leverage their unique resources and capabilities to maintain competitive advantage (Touboulie & Walker, 2015; Bals & Rosca, 2022). Manufacturing SMEs can navigate market complexities and achieve sustainable growth by focusing on developing distinctive resources, enhancing operational capabilities, promoting collaboration, and embracing technology (Gligor, Bozkurt, Russo *et al.*, 2018).

The RBT emphasises that firms' internal resources are essential drivers of sustained competitive advantage. These resources must be valuable, rare, inimitable, and non-substitutable to provide such advantages (Barney, 1991). For SMEs, leveraging these principles involves strategic management of internal competencies to achieve successful Information Systems/Information Technology adoption, which is a crucial factor in modern competitiveness (Ahmad *et al.*, 2022; Dubey *et al.*, 2018). Additionally, *dynamic capabilities* significantly enhance SME performance by enabling them to adapt quickly to environmental changes. This adaptability is essential for maintaining a competitive advantage over time (Teece *et al.*, 1997; Teece & Peterof, 2016). By integrating dynamic capabilities with the RBT framework, focusing on both resource development and flexibility, SMEs can better navigate global market challenges while fostering innovation and customer engagement strategies aligned with contemporary business needs.

3.2.3. Agility Theory

Agility theory, originating in management and organisational studies, focuses on an organisation's ability to adapt to environmental changes while maintaining rapid competitiveness. The concept gained prominence in the early 1990s, particularly in response to the increasing pace of technological advancements and globalisation, which required organisations to become more flexible and responsive to market dynamics (Goldman, Nagel, & Preiss, 1995; World Manufacturing Foundation, 2022).

Agility is often defined as a firm's capability to respond quickly to customer needs, market changes, and unforeseen challenges through innovative processes and flexible resource management. Agility theory posits that an organisation must be able to renew itself, adapt swiftly, and thrive in a rapidly changing, unstable environment (Harraf *et al.*, 2015).

Thus, applying a single theory will be insufficient, as it would limit a firm's competitive advantage to resources alone, without considering its level of agility.

Agility comprises several vital components. First, it emphasises responsiveness, which refers to an organisation's ability to detect environmental changes and respond appropriately (Christopher, 2000). This can involve adjustments to operational, product, or strategic direction based on evolving market demands. Secondly, agility encompasses adaptability, which is the ability of an organisation to modify its existing processes and structures to align with new economic and operational conditions (Musa & Enggarsyah, 2025). This adaptability often requires a culture that embraces change and encourages continuous learning. Lastly, agility includes collaboration, both internally and externally. Organisations that foster collaborative relationships with suppliers, customers, and other stakeholders can share knowledge and resources, enhancing their capacity to respond swiftly to changes (Dyer & Singh, 1998).

3.2.3.1. Recent Developments in Agility Theory

Recent research has further refined agility theory, specifically in the context of digital transformation and the implications of technology on organisational practices. For instance, integrating digital technologies has emerged as a crucial driver of agility (Volz *et al.*, 2025). Organisations that leverage data analytics, AI, and other digital tools can enhance their responsiveness and decision-making capabilities (Raut *et al.*, 2021). This has led to discussions of "digital agility," the ability to innovate and adapt using digital resources (Miceli *et al.*, 2021). Moreover, recent literature has highlighted the importance of an agile mindset. Scholars argue that fostering an agile culture where employees are empowered to make decisions and experiment can significantly enhance an organisation's overall agility (Badashkhan *et al.*, 2020). This cultural shift is essential to sustaining agility in continuous change.

3.2.3.2. Relevance of Agility Theory to Manufacturing SMEs and OA

Agility theory is particularly relevant to manufacturing SMEs, as these firms often operate in highly volatile, competitive environments. The ability to swiftly adapt to changes in market demand, technological advancements, and customer preferences is crucial for their survival and growth.

By applying agility principles, manufacturing SMEs can enhance operational flexibility, responsiveness, and overall competitiveness (Voxbriefs, 2024). One key aspect of agility theory that resonates with manufacturing SMEs is the emphasis on responsiveness. In an era of constantly evolving customer expectations, the ability to respond quickly to changes can be a significant differentiator (Christopher, 2000). According to Christopher and Peck (2004), manufacturing SMEs that adopt agile supply chain practices can reduce lead times and improve their ability to deliver products in response to sudden changes in demand.

This increased responsiveness enables them to better seize market opportunities and build stronger customer relationships. Adaptability is a crucial element of agility theory, particularly important for manufacturing SMEs.

Agility theory highlights that collaboration can greatly benefit SMEs in the manufacturing sector by enabling them to establish partnerships and nurture collaborative relationships with suppliers and other stakeholders (Anifowose, Mezghani, Badawood *et al.*, 2022). Agility theory emphasises the importance of organisational agility in the face of rapid and unpredictable changes in the business environment (Harraf *et al.*, 2015). Agility theory posits that an organisation must be able to renew itself, adapt, change quickly, and thrive in a rapidly changing, turbulent environment (Harraf, Wanasika, Tate & Talbott, 2015). The core idea is that for an organisation to succeed in a turbulent, dynamic landscape, it must adapt, change, and renew itself quickly.

Agility Theory encompasses strategies and practices that help organisations become more flexible, responsive, and innovative.

This could involve fostering a culture of experimentation, encouraging open communication, streamlining decision-making processes, and continuously learning and evolving to meet new challenges. However, the few studies on organisational agility have focused on the characteristics of agile organisations rather than on the organisational capabilities at the core of the firm's survival (Appelbaum *et al.*, 2017a; Appelbaum *et al.*, 2017b).

This theory is relevant in the current fast-paced business environment, where external factors, including technological advancements, market shifts, can significantly impact an organisation's success. The theory assumes that organisational agility is applicable across various industries and sectors, especially in environments characterised by change and uncertainty. However, the effectiveness and applicability of this theory vary depending on the specific context and how it is implemented within an organisation.

3.2.3.3. Relevance to the Organisational Agility Framework for Manufacturing SMEs

For manufacturing SMEs, organisational agility is vital in navigating the complexities of modern markets, characterised by rapid technological advancements and changing customer preferences. Agility theory provides a framework for understanding how these firms can enhance their responsiveness and adaptability through specific practices. First, manufacturing SMEs can leverage agility by focusing on responsive supply chains. By developing close relationships with suppliers and utilising flexible manufacturing techniques, these firms can quickly adjust their production processes in response to demand fluctuations (Christopher & Peck, 2004). This responsiveness is crucial for meeting customer expectations and maintaining competitiveness.

Secondly, SMEs can enhance adaptability by investing in employee capacity development. By promoting a culture of continuous learning, firms can ensure that their workforce is equipped to embrace change and innovate (Adegbuyi *et al.*, 2018). This commitment to adaptability can lead to better problem-solving and increased resilience when companies face challenges.

Finally, collaboration is critical for manufacturing SMEs looking to enhance their agility. Engaging in partnerships and networks allows these firms to share knowledge and resources, accelerating innovation and responsiveness to market changes (Dyer & Singh, 1998). Collaborative efforts can also enhance access to new technologies and best practices, further bolstering organisational agility.

The study explores sector-specific agility instruments in manufacturing SMEs and examines the application of the resource-based view and agility theories to policies, regulatory and legislative frameworks, and the influence of organisational agility through capability resources and agility measures. Secondly, applying these theories seeks to close the gaps each has; the RBT focuses only on resources as sources of competitive advantage, whereas beyond competitiveness lies the ability of a firm to continue despite external environment turbulence, which Agility Theory brings.

3.3. Integration of theories

In the study, enablers and capabilities are the resources a firm has, and sense-response frameworks speak directly to a manufacturing firm's ability to respond to external environmental turbulence, that is, agility. This study further explores the interaction, connectivity, and interdependence among OA framework domains (Stam, 2015; Audretsch et al., 2025; Khalil & Belitski, 2018) and calls for new research to further distil the agility theory and the agility domain into applicable frameworks (Zitkiene & Deksnys, 2018).

Integrating agility theory and the resource-based view theory (RBT) provides a comprehensive framework for enhancing organisational agility among South African furniture manufacturing SMEs. This framework is vital for these businesses to navigate the complexities of a dynamic market, especially when considering best practices from BRICS countries.

Several studies conducted on organisational agility used dynamic capability theory (Bas Karada & Koronios, 2018; Ajgaonkar *et al.*, 2021; Idrissi *et al.*, 2022; Teece, Peteraf and Leih, 2016; Zhang *et al.*, 2023).

Teece (2007) examines how firms can sense and respond to market changes, ultimately driving long-term success. For example, recent research has shown how dynamic capabilities help firms adapt in times of uncertainty (Helfat *et al.*, 2009). Other studies have explored how these capabilities allow companies to gain a competitive edge by fostering innovation and aligning their strategies more effectively (Rashidirad & Salimian, 2020; Teece & Pisano, 1994). Another study also highlights how dynamic capabilities help firms quickly reorganise resources, boosting overall performance (Rashidirad & Salimian, 2020).

Furthermore, other studies have shown that these capabilities can drive both operational and strategic changes, ultimately contributing to a firm's long-term competitive advantage (Shiferaw & Kero, 2024). Given the focus of previous studies on DC, this study will employ the Agility theory to address the RBT's shortcomings.

Through the exploration of sector-specific agility instruments in manufacturing SMEs, the study and the application of the two theories help examine policies, regulatory and legislative frameworks, and the influence of OA through capability resources and agility measures. Secondly, the competitiveness of applying these theories lies in closing the gaps each has. The RBT focuses only on resources as sources of competitive advantage, whereas beyond competitiveness lies the ability of a firm to continue despite external environmental turbulence, which the agility theory addresses. The role of theory in fulfilling the goals of the study is to map internal (enablers and capabilities, practices and processes, sense-response frameworks of agility, and external factors (policies, legislation, and regulatory frameworks) influencing a firm's agility towards developing a framework for the manufacturing industry in South Africa.

The resource-based view theory (RBT) posits that organisations obtain enduring advantages only through organisation-specific capabilities and assets (VRIN), but falls short in explaining how successful organisations achieve timely responsiveness and flexible adaptation in situations of rapid change. Building on the RBT, the Agility Theory seeks to explain agility by focusing on capabilities that allow an organisation to adapt its resources and capabilities.

While the foundational capabilities that allow a firm to perform and adapt to change may ensure technical fitness, like efficiency and effectiveness, dynamic capabilities are needed to ensure evolutionary and entrepreneurial fitness (Teece, 2007). The study considers the agility theory (AT) and resource-based view theory (RBT). In line with the agility theory, issues of flexibility, responsiveness, innovation, communication, continuous learning, processes, and evaluation of strategies are essential characteristics which organisations need to navigate uncertainties (Sherehiy, Karwowski, & Layer, 2007). These are elements aligned with the agility theory. For South African furniture manufacturers, cultivating flexibility means adjusting production processes and product designs quickly in response to changing consumer preferences. Recent studies indicate that SMEs that embrace flexible production systems are better able to adapt to market fluctuations and demand variations (Wambugu, Karanja & Rambo, 2020).

The theoretical framework for this study integrates agility theory and RBT to address the unique challenges faced by manufacturing SMEs. Agility theory emphasises the importance of building agility as a source of competitive advantage and resilience of a firm. Concurrently, RBT underscores the importance of leveraging internal resources, specifically valuable, rare, inimitable, and non-substitutable (VRIN) resources, to achieve competitive advantage (Barney, 1991). This integration enables firms to manage their resources effectively and adapt to changes in their external environment.

While RBT focuses on a firm's internal capabilities, it explains how they facilitate timely responsiveness and adaptability in rapidly changing circumstances (Helfat *et al.*, 2009). Here, agility theory complements RBT by emphasising dynamic capabilities that allow organisations to adjust their resources and capabilities to align with external demands (Teece, 2007). This theoretical synergy is crucial for South African SMEs, as it equips them not only to withstand market fluctuations but also to proactively shape their environments through innovation and collaboration (Zitkiene & Deksnys, 2018).

In addition, organisations must adapt effectively to changing environmental conditions, and organisations with mature dynamic capabilities proactively shape their environment through innovation and collaboration (Teece, 2007).

The capacity to respond rapidly to market changes allows SMEs to take advantage of new opportunities (Salisu & Abu Bakar, 2019). For example, research conducted in Brazil indicates that SMEs utilising real-time market analysis tools can quickly adjust their strategies and offerings (Veiga *et al.*, 2024).

This responsiveness enhances customer satisfaction and strengthens SMEs' competitive position. The ability to react quickly to market changes enables SMEs to seize new opportunities. Research conducted in Brazil indicates that SMEs using real-time market analysis tools can swiftly adjust their strategies and offerings.

This flexibility enhances customer satisfaction and competitive advantage. As Agility Theory and RBT emphasise, innovation is vital for maintaining relevance in a competitive landscape. South African SMEs can draw on best practices from India, where companies have fostered a strong culture of innovation through collaboration and knowledge sharing (Raut *et al.*, 2021). Encouraging a culture of experimentation within the organisation allows employees to explore new ideas and solutions, leading to the development of unique, customised products.

Continuous learning is essential for sustaining agility. Organisations must cultivate an environment that promotes knowledge acquisition and skills development. Research has shown that firms prioritising continuous learning outperform their competitors by adapting more effectively to industry changes (Teece, 2007). In this context, manufacturing SMEs in South Africa can benefit from training programs that enhance employees' skills in both traditional craftsmanship and modern manufacturing technologies.

Despite its overuse of the dynamic capability theory, it provides a valuable framework for manufacturing SMEs to navigate the complexities of modern markets. The RBT complements this agility framework by highlighting the importance of VRIN (valuable, rare, inimitable, non-substitutable) resources. Integrating agility theory and the RBT offers a robust framework for enhancing organisational agility within South African furniture manufacturing SMEs. Prioritising flexibility, responsiveness, innovation, continuous learning, and the effective use of unique resources, SMEs can improve their adaptability and competitiveness in a rapidly changing environment.

Theoretical alignment of research objectives

The theoretical framework developed in this study delineates the interplay between various components of organisational agility and the underlying theories. According to Salkin, Oner, Ustundag *et al.*, (2018), a conceptual framework synthesises existing literature and theoretical insights into a cohesive model that guides research. In this case, the framework incorporates the agility enablers and capabilities, organisational agility practices and processes, and the sense-response frameworks outlined by Zitkiene & Deksnys (2018).

3.4. Development of a Proposed Conceptual Framework

According to Salkin *et al.* (2018), a conceptual framework is a consistent and comprehensive theoretical framework emerging from an inductive integration of previous literature, theories, and other pertinent information. A conceptual model deals with abstract/concepts assembled because of their relevance to a common theme. Chukwuedo, Chukwuedo, Paul *et al.*, (2021) highlight two models used in research contexts: schematic and statistical models. Statistical models are equations that mathematically express relationships among several variables, which are tested statistically. Schematic models (or conceptual maps) graphically represent relationships among phenomena and are used in qualitative and quantitative research. Concepts and linkages between them are depicted graphically through boxes, arrows, or other symbols.

A conceptual framework of a research study is the relationship between goals, beliefs, and the concern variable (Plano-Clark, Ivankova & Young, 2023). In this study, the independent variable is organisational agility. Miles, Huberman, and Saldana (1994) and Swaen and George (2024) describe a conceptual framework as a visual or written product that explains, in narrative or graphical form, the expected relationships or linkages among the variables of a study.

Ultimately, the conceptual framework provides a systematic analysis that highlights the intricate relationships identified in this study. It draws on existing literature on OA and establishes a framework for the study.

Studies conducted indicate that developing an OA framework for manufacturing SMES requires consideration of enablers and capabilities of a firm, practices and processes, as well as sense-response frameworks in the firm. This research aims to identify and validate the final framework elements through expert reviews by synthesising these perspectives. The challenges faced by manufacturing SMEs will also be broadly dissected, along with the agility domains in the study. Researchers have split agility frameworks into three: a) agility enablers and capabilities, b) organisational agility practices and processes, and c) the sense-response framework of OA (Zitkiene & Deksnys, 2018; Appelbaum *et al.*, 2017).

Figure 1 summarises the key concepts framing the study. It informs the study's structure and operating framework. All data collection methods are centralised around this conceptual framework to ensure uniform, high-quality data collection. This has resulted in triangulation based on the application of a single framework to obtain the same result across.

Conceptual Framework

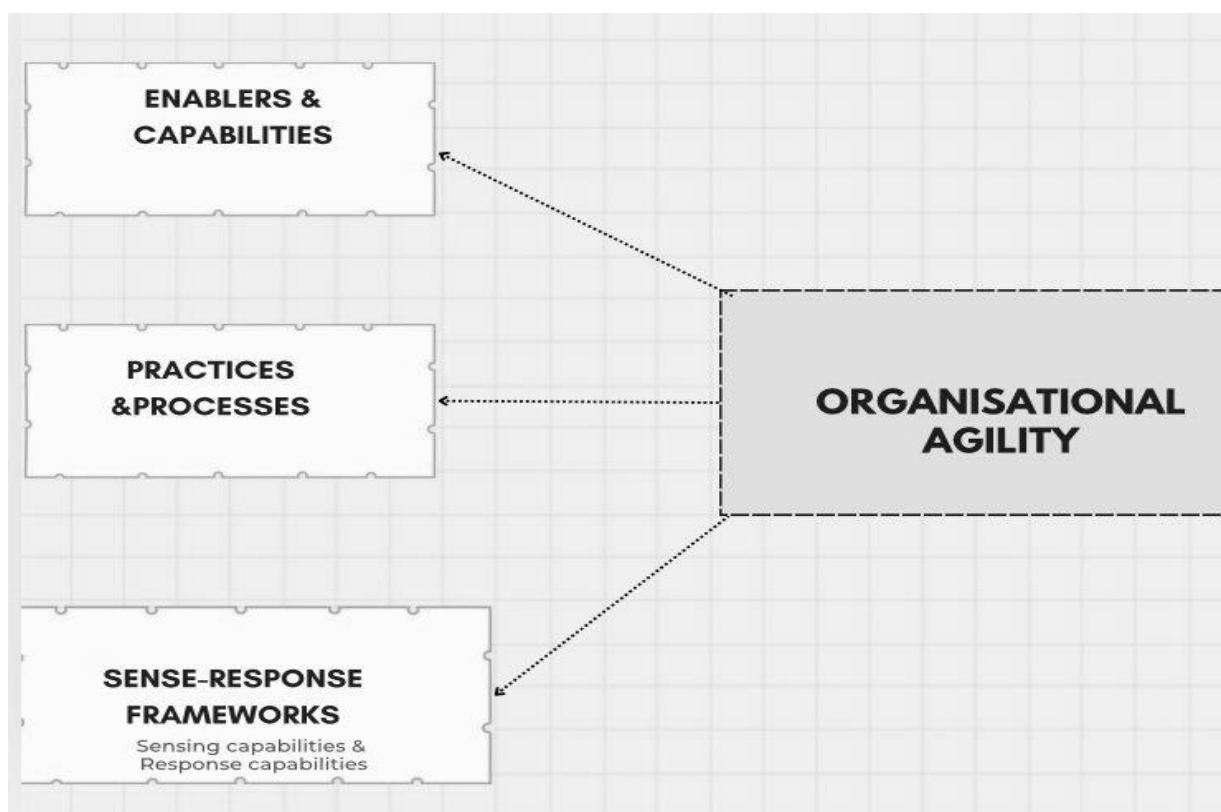


Figure 1: Conceptual framework

Based on Figure 1 above, it has been highlighted that enablers and capabilities are resources a firm has, and sense-response frameworks speak directly to the ability of a manufacturing firm to respond to external environment turbulences, that is, agility. This study further explores the interaction, connectivity, and interdependence between OA framework domains (Stam, 2015; Audretsch & Belitski, 2017; Audretsch *et al.*, 2018) and a call for further research to distil the agility theory and agility domain into applicable frameworks (Zitkiene & Deksnys, 2018).

Many studies on organisational agility draw on dynamic capability theory; hence, this study will employ Agility theory to address the shortcomings of the RBT.

The DCT was considered as it was developed to explain competitive advantage in a dynamic industry; however, due to its shortcomings, it was unsuitable. These include the theory's narrow nature, its competitiveness and dynamism in internal resources, and its extensive research (Walter, 2021; Teece, Peteraf & Leih, 2016; Shiferaw and Kero, 2024; Ajgaonkar, Neelam & Wiemann, 2021). This study applied an integration of the resource-based theory (RBT) and agility theory. One theory is insufficient as a framework for analysing the study because it would limit a firm's competitive advantage to resources alone, without considering its level of agility.

Enablers and capabilities entail processes and activities to accommodate changes in customer demands and market conditions. They are rooted in agile manufacturing and have specific abilities for power and competence (Shafiri & Zhang, 2001; Charbonnier-Voirin, 2011). Practices and processes identify practices important for an agile organisation when dealing with change, mastery practices, human resources, cooperation, and customer value creation practices (Charbonnier-Voirin, 2011). Sense response encompasses a comprehensive structure based on consistent process and action (Achoki, 2023). Additionally, Maximova (2021) considers cost, speed, quality, and scope as measures of organisational agility effectiveness.

CHAPTER 4

RESEARCH METHODOLOGY

4.1. Introduction

This Chapter narrates and justifies the study's philosophical and methodological positioning and describes the research design. It introduces and explains the rationale for the research methods used, and provides a description of the study's population, including the sample, research instruments, and data collection methods. The section also describes how the data were analysed and the reliability and validity of the study. This research explored three variables: enablers and capabilities, practices and processes, and sense-response frameworks of organisational agility in manufacturing SMEs in BRICS countries to develop an agility framework based on best practices in these countries. The Chapter dissects the various research stages, including respondent sampling, data analysis, framework validation, and the implementation plan. For a structured approach, relevant components from Saunders' research Onion were used to unpack the research process.

4.2. Research Design and Process

McMillan and Schumacher (2010) define research as a structured process of collecting data and analysing the data logically for a given purpose. This definition is, however, generalised to some extent as wide-ranging methods are used to investigate a problem or question, according to McMillan & Schumacher (2010). Research methodology is the specific procedure or technique utilised to identify, select, process, and analyse information about a research topic.

Research methods explain how a researcher collects and analyses data (Saunders, Lewis & Thornhill, 2012).

These methods have been developed to ensure the reliability and validity of knowledge acquired. The research design and method outline the methods used in the study and the selections made. A qualitative research approach was used to achieve the study's objectives, enabling a comprehensive exploration of the subject matter.

The research methodology chapter did not follow the Research Onion but focused on specific elements relevant to this study. The flow indicates the decisions made in the research process, the philosophies that informed a particular approach. It further aligns the various stages of the research study.

4.3. Research Philosophy/Research Paradigm

There are various research paradigms, including positivism, constructivism, interpretivism, realism, and pragmatism. While these are noted, the discussion will be focused on Interpretivism as the applied research paradigm. A research paradigm comprises ontology and epistemology. The section begins by exploring the different philosophical positions in research. It thereafter zooms in on the specific philosophical position relevant to the study.

4.3.1. Ontology and epistemology of the research paradigms

Positivism believes that there is a single reality. From an epistemological position, knowledge can be measured using the best tools. Interpretivism holds that there are multiple realities, and its epistemology holds that knowledge must be interpreted to discover the underlying meaning. Constructivism is a term used interchangeably with interpretivism. Constructivists claim that truth is relative and dependent on one's perspective. Pragmatism, ontologically, believes that reality is constantly debated, negotiated and interpreted. Its epistemology aligns with the belief that knowledge should be examined using the best tools. Regarding the research philosophy, the study adopted an interpretivist perspective.

4.3.2. Ontological Position

The ontology of this study is rooted in the interpretivism paradigm, which posits that knowledge is constructed through social interactions and experiences within specific contexts. In the case of manufacturing SMEs in South Africa, the focus is on understanding how these organisations navigate their environments, particularly within the BRICS context. Interpretivism recognises the importance of the subjective human creation of meaning but accepts objectivity (Merriam, 2009). The study recognises that organisational agility is not a one-size-fits-all concept but is shaped by each SME's unique challenges and opportunities. This aligns with the idea that reality is subjective and can vary significantly across individuals and groups (Musiita *et al.*, 2023).

4.3.3. Epistemological Position

The epistemological stance of this research is that knowledge should be interpreted to discover the underlying meaning. In terms of epistemology, each situation shapes activity, experience, and one's interpretation of the case, something associated with qualitative data collection methods (Stake, 2010). Given the diversity of the BRICS countries and their individual operating environments, their realities cannot be singular and, therefore, require a multifocal interpretation to uncover the underlying meaning of the data.

4.3.4. Interpretivist research paradigm

Interpretivism assumes that reality is subjective, multiple, and socially constructed. It essentially means that one can understand another person's reality through that person's experiences of it, which may differ from one's own due to different historical and social perspectives. In terms of epistemology, Stake (2010) argues that situation shapes activity, experience, and one's interpretation of the case. Something associated with qualitative data collection methods (Stake, 2010). This paradigm used multiple qualitative sources and data collection and analysis methods. However, interviews are the preferred and dominant data collection method.

Interpretive research, often associated with qualitative research, posits that reality is socially constructed, implying there is no singular, observable reality (Merriam, 2009). Instead, there are multiple realities or interpretations of an event. According to the tenets of this paradigm, researchers do not ‘find’ knowledge; they construct it. Multiple realities replace the traditional single approximation of an objective reality (Lichtman, 2006).

It is essential to position qualitative research philosophically among other forms of research. Such a positioning entails the beliefs about the nature of reality (ontology) and the nature of knowledge (epistemology) (Merriam, 2009). Traditional research paradigms are based on specific assumptions about the nature of the world. They assume that there is an objective reality that researchers ought to try to uncover as they conduct their research.

Furthermore, it is believed that the researcher's role is neutral and that the primary purpose is to discover objective reality. These are referred to as positivist paradigms. A positivist orientation assumes that reality exists ‘out there’ and is observable, stable, and measurable (Merriam, 2009). However, it became evident that capturing a reality ‘out there’ was difficult, if not impossible. This led to a postpositivist perspective, which held that researchers should strive to capture reality through multiple methods. In this way, reality might be approximated (Lichtman, 2006).

According to the tenets of this paradigm, researchers do not ‘find’ knowledge; they interpret the multiple realities, as built by the researcher, an approach that replaces the traditional single approximation of an objective reality (Lichtman, 2006).

4.4. Research Strategy

This study employed a qualitative research methodology (Leedy and Ormrod, 2019) and was grounded in an interpretive paradigm, which assumes that individuals construct their realities (Burns *et al.*, 2022). Qualitative approaches in entrepreneurship research are suitable due to their inherent qualities, namely uniqueness, variability, and volatility (Al Nuaimi Burg, Singh and Ahmad, 2024). To validate the final organisational agility framework, Delphi expert reviews were conducted using a quantitative Likert scale (1-5).

4.4.1. Multi-method qualitative research design

The study used multiple qualitative sources and methods of data collection and analysis. Participants were selected through non-probability sampling, with a purposive sample of 34 (14 from South Africa and 5 from each of the other BRICS countries). The gaps in a single data collection tool could have made it difficult to produce robust, succinct recommendations in this study. Therefore, a multi-method approach was used to ensure the reliability and validity of the recommendations and conclusions in this study.

Interviews were the preferred dominant data collection method. When participants were unavailable for interviews, an interview questionnaire was developed and shared with the selected participants. Multiple methods for collecting and analysing data were found to be more informative in qualitative research. This is because participants can provide a more comprehensive view of the issue being studied (Merriam, 2009). Interviews also allow for the collection of new information that one would not ordinarily get from documents.

Data collection focused on the study's four objectives. Participants selected represented manufacturing SMEs, funding institutions, policymakers, and related support institutions.

- SME participants from the furniture manufacturing industry responded to issues related to agility and their knowledge or understanding of the agility concept and agility barriers.
- Funding institutions are reflected in their institutional funding mechanisms and strategies for promoting agility because it is not highly questioned at the funding level.
- Policymakers participated as developers of appropriate policy frameworks to monitor and evaluate the effectiveness of the policy mechanisms towards agility in the manufacturing industry.
- Supporting institutions that incubate, accelerate, train, and bring market linkages to international markets participated. Their role is to respond to workforce agility and agile software development, and to build the capacity of SMEs to form agile organisations for enterprises.

The objectives enabled the identification of key elements of OA from a semi-structured interview questionnaire. Furniture manufacturing SMEs were provided with their own set of questions, and SME-supporting institutions had their own set. Each country had 5 respondents targeted, with two (2) being furniture manufacturing SMEs and three (3) being SME supporting institutions in the furniture manufacturing sector.

The Delphi approach helped optimise objectives by involving industry experts across BRICS countries, using a two-round framework to reach consensus (Jorm, 2025). An 80% consensus on the validated framework elements is acceptable for qualitative research (Merriam & Tisdell, 2016; Morgan, 2022).

The data analysed were obtained from interviews with furniture manufacturing SMEs and supporting institutions, academic literature, and national policies and strategies across various countries. It develops a theory-led best-practices framework to strengthen Organisational Agility (OA) in South African manufacturing SMEs. Industry insights from experts were collected through a Delphi study to validate the framework. The analysis identifies key themes that enhance agility, supported by academic literature and national policies.

These different data sources allowed the researcher to compare information. Using a single method of data collection might not have yielded the necessary results, as best practices can only be sourced from primary data collected through interviews. After thoroughly reading the interview transcripts, the researcher broke them down into objectives and aligned each response with the relevant objective to gain a sense of the bigger picture.

4.4.2. Time horizon

The study focuses on the 7 years before BRICS became BRICS+. Due to the broad geographical area the study covers, including BRICS+ countries, would impede the study's achievement of the intended results. Secondly, BRICS+ is a new structure, and therefore, countries are still trying to structure their areas of interest within the available declarations and business offerings.

The 7-year period is to ensure that South Africa is part of the block.

4.4.3. Population, Sampling and Sample Size

The study's population comprises SMEs in the furniture manufacturing sector across the BRICS countries. Furthermore, it incorporates institutions that support manufacturing firms. Such institutions include industry organisations, development finance institutions, entrepreneurs' ecosystem builders, and training institutions, thereby providing a broad view of the operational aspects of SMEs and the institutional structures that facilitate their growth and agility.

4.4.3.1. Target Population

The target population comprises all furniture manufacturing SMEs in the selected BRICS countries. This study focused on a representative sample of these SMEs, enabling the researcher to draw meaningful conclusions applicable to the broader sector. The goal is to evaluate the framework's effectiveness across diverse contexts, ensuring that findings are relevant and actionable.

Choosing the right cases was essential for guiding the research. The selection of cases significantly affects the validity of qualitative or multi-method studies. Given numerous SMEs in the furniture manufacturing sector across BRICS countries, a purposive sampling strategy was utilised to ensure that the selected cases aligned with the research objectives (Koivu & Hinze, 2022).

This study adopted a multiple-case study approach, focusing on a limited number of Furniture manufacturing SMEs in the target countries. This helped ensure a thorough analysis of unique phenomena within the sector (Yin, 2018).

Researchers acknowledge that case studies can effectively reveal causal relationships and uncover new factors influencing organisational agility (Merriam & Tisdell, 2016).

4.4.3.2. Sampling procedure

According to Vasileiou and Barnett, Thorpe *et al.* (2018), sample adequacy is determined by appropriateness. Qualitative samples are purposive, meaning they are selected for their ability to provide rich, textured information relevant to the area being studied.

Vasileiou *et al.* (2018) posit that the more usable the data collected from each participant, the less need there is for a larger population. Richie *et al.* (2003) recommend that studies using interviews as a data collection method should not conduct more than 50 interviews to maintain the study's complexity and logic. Green and Thorogood (2004) echo that in interview-based studies, there is little new information a researcher can obtain from participants after 20 to 30 participants in the same category. Similarly, Britten asserts that large populations comprise 50-60 participants in a qualitative interview study. The second of the multi-methods used was document reviews, focusing on individual country policies, strategies, statistical data and reports. Policies, Annual reports and strategies from Brazil, Russia, India, China and South Africa were drawn and analysed. Additionally, research papers on organisational agility in these countries were consulted and analysed. The third data collection method was Expert review through a Delphi process. During the Delphi process, a questionnaire was developed for participants in Google Forms.

Similarly, Britten asserts that large populations comprise 50-60 participants in a qualitative interview study. Given the assertions above, a total population of 34 participants were selected, five (5) from each BRICS member country and 14 from South Africa, based on similar SME definitions across the BRICS member countries. The selected sample in South Africa emanates from that, and the study seems to develop an OA framework for South Africa.

The supporting institutions for SMEs (SSI) and manufacturing SMEs informed the public about their services. SME supporting institutions (SSI) provided enabling services such as financing, policies, incubation facilities, training, market linkages, and access to international markets. Hence, SSI responded to enablers and capacity development for SMEs, as well as to practices and processes supporting agility and sense-response frameworks, developed to drive SMEs towards agility.

The SMEs responded to agility as applied within their firms. The study used non-probability sampling, specifically purposive sampling. Purposive sampling was selected because of its information-rich nature on the subject being researched (Patton, 2002).

Being a participant was based on specific sector operation, knowledge, and experience about the subject to help maximise the efficiency and validity of the study. Data was collected with a sample of 34 until saturation was reached. Saturation in the study was measured when participants provided no new information.

4.4.3.3. Inclusion and Exclusion Criteria

Participants were selected based on the criteria set out in the research proposal, being involved in the furniture manufacturing industry as an SME, supporting institution, policy maker, funding institution, and researcher or expert for framework validation. Participants needed to be 18 years or older to ensure they are at the legally acceptable age to work. No specific culture was excluded from the study. The participant had to have been in the manufacturing SME sector for 10 years or more. The period was selected because many SMEs collapse after 5 years, which worsens to 10 years. Therefore, a firm that has survived for over 10 years has some agility that other countries can learn from. The participants had to have hearing, eyesight, and writing abilities. The researcher would be unable to access tools like Braille, which some people with sight disabilities use. The participants had to be mentally capable and knowledgeable about the key areas of the study.

The characteristics of the individual participants also applied to the supporting institution representatives. The participants were in senior management, had been with the supporting institution for 5 years or more and had relevant experience for 10 years or more.

The study selected senior management for their decision-making authority and responsibility for policy implementation. The study targeted Chief Executive Officers, Strategic Managers, Managing Directors, and Chief Information Officers, depending on the position at the helm of the organisation. In that case, a gatekeeper letter was sent requesting that Chief Executive Officers approve interviews with a delegated senior manager, who was either a Director, Operations Manager, or Centre Manager.

The selection criteria above reflect the diversity of the participants. The importance the diversity is to ensure rich data is obtained and weigh in whether at a strategic level information permeates through to the lower levels for implementation.

Secondly, given the different titles used across organisations, ensure that senior and some middle managers, depending on the organisational hierarchy, participate. This diversity has a profound contribution to the study, as Chief Executive Officers and Directors in the various participating organisations personally participated.

Table 1: Summary of Participants, Data Collection, and Delphi Procedures

Sample Size – SMEs	Twelve furniture manufacturing SMEs from BRICS countries (South Africa, Brazil, Russia, India, and China).
Sample Size: Supporting Institutions	Fourteen institutional participants representing development finance institutions, industry associations, training and development facilitators, and entrepreneurial ecosystem support organisations.
Total Participants	Twenty-six interview participants (12 furniture manufacturing SMEs and 14 SME supporting institutions)
SME Participant Profile	Senior decision-makers (CEOs, Founders, Managing Directors, Directors, and Executive Directors) with industry experience ranging from 4 to 33 years. All participants operated within the furniture manufacturing sector.
Institutional Participant Profile	Senior leaders (CEOs, Directors, General Managers, and Senior Managers) with 2 to 35 years of experience in industry support, development finance, training, market access, and entrepreneurial ecosystem development.
Geographical Scope	Brazil – 3 Furniture manufacturing SMEs Russia- 3 Furniture manufacturing SMEs India – 2 Furniture manufacturing SMEs China -1 Furniture manufacturing SME South Africa -3 Furniture manufacturing SMEs

Sampling and Recruitment	Purposive and expert sampling were employed to recruit participants with direct involvement in SME management, manufacturing sector support, and policy-related activities. Recruitment occurred through individual country databases and websites, professional networks through BRICS research bodies, furniture manufacturing industry bodies, government departments and institutional referrals.
Ethical Considerations and Consent	Participants received formal letters of request to participate outlining the study purpose, confidentiality, and voluntary participation. Written informed consent was obtained prior to data collection, in accordance with institutional ethical clearance requirements.
Data Collection Method	Semi-structured interviews were conducted virtually or by phone to allow for depth, flexibility, and alignment with the research objectives.
Interview Duration	Interviews ranged from approximately 37 to 92 minutes.
Data Analysis	Thematic analysis supported by ATLAS.ti software. Coding focused on identifying recurring patterns, cross-country variations, and analytically generalisable themes related to organisational agility.
Delphi Panel Size	Five-nine experts for the final framework. However Round 1 had 20 respondents subject-matter experts drawn from SME leaders and institutional stakeholders. However, from these, only those that met the frame of experts were determined at the beginning of the study. The result was 9 experts.
Delphi Rounds	Two rounds of iteration were conducted to refine and validate the proposed organisational agility best-practice framework.
Response Rates	Interview participation achieved a high response rate. Delphi rounds-maintained response rates exceeding 70%.

Consensus Threshold	Consensus was defined as $\geq 80\%$ agreement among Delphi panel members on framework components, consistent with established Delphi methodological standards.
Inclusion and exclusion criteria	For SMEs, only those in the furniture manufacturing industry were selected, with the requisite experience detailed in the initial research proposal. Secondly, they had to fall within the SME category in terms of size and personnel.

4.5. Data Collection Process and Instruments

4.5.1. Process

A request to participate in the study was emailed to all identified relevant people in the sample, and a date and time for the interviews will be set upon consent. Official consent was solicited from prospective participants through a written form to be completed by each participant, with an option to withdraw or not participate in the study. This ensured that the study was fair.

- Participants were briefed on the purpose of the study so that their consent was informed and that the study was conducted with the full cooperation of the participants.
- The study relied on direct access to the BRICS Research Institute (Research Capacity Development Fellows) to source eligible participants from other BRICS countries. In South Africa, Manufacturing SME databases were used to select eligible participants.
- After identifying potential participants, a formal participation request was sent electronically. This request was explicitly emailed to manufacturing SMEs specifically operating in the furniture manufacturing subsector.
- The participation request included an information letter outlining the research's essential details. This letter gave potential participants a clear and concise overview of the study's objectives, methodology, and expected time commitment. It also emphasised the importance of their participation in contributing to valuable research. Second, assurance of anonymity was given to enable them to freely participate in the study without fear of victimisation or disadvantage.

- During the research process, the confidentiality and anonymity of potential participants were protected.
- Withdrawal option: Potential participants were also informed that they can withdraw from the study at any point. If they indicated a wish to discontinue the interview, it was going to be granted, and the study continued to search for willing participants until saturation was reached.

A consent form was then sent to the participants so they could participate willingly. Each participant was informed that participation in the study was purely voluntary and that participants would receive no financial benefit. A few screening questions were provided in the letter to ensure that the prospective participant is genuinely eligible. In the request to participate, each participant was asked whether they consented; if yes, the prospective participants were then asked to provide possible interview dates from which to select.

Upon receipt of the signed consent forms and the date and time agreed upon, the interview went ahead as scheduled. When the participant was unavailable for an MS Teams interview, they were sent the questionnaire via email to complete. The questionnaire was designed using Google Forms for easy transcription and analysis.

No personal details were required; consent was sought before the interview recording. The freedom to continue or not was given to all participants. Participants were notified of the intention to record the interview for accurate data collection and synthesis afterwards. There was no pressure on prospective participants to be involved in the study. Informed consent was obtained before beginning the study.

Questions asked were limited to those on the prepared list, along with follow-up questions. Participants were assured of their confidentiality, and their rights and willingness to participate were not compromised. Additionally, assurances were given that the study results would not reference their names for identity protection and that the results would not identify them as individuals.

Once data collection was completed, the strictest measures were taken to ensure the safety of the information: lockable cabinets, secured hard drives, and password-protected files.

4.5.2. Data Collection Instruments

This section provides an overview of the methods used for data collection and analysis. Literature proposed that an evaluation criterion should be developed within the context of a specific country, as each country has unique characteristics that influence the collection, analysis and interpretation of data (Frontier Consulting, 2025). Data collected for this study included primary and secondary data. Data were collected from furniture manufacturing SMEs in BRICS member countries, and supporting institutions across the BRICS also participated in the study. The research instruments examined developing an organisational agility framework for manufacturing SMEs in South Africa. The primary data was obtained through document reviews and interviews with officials and experts. For participants who could not conduct interviews, the questionnaire was compiled in a Google Form and distributed. This was due to the geographic spread of the participants and differing time zones. Interviews included face-to-face (via MS Teams), telephonic interviews and questionnaire completion. The questionnaires included both open-ended and closed questions.

Data was obtained from the individual countries' statistical bulletins like the World Bank's Development Indicators (WDI), Organization for Economic Co-operation and Development (OECD), International Monetary Fund (IMF), International Financial Statistics (IFS), research publications from accredited journals, Quantec Database and the statistics offices of each country, World Bank, Statistica, Statistics South Africa, BRICS Conference and Summit papers. The information accessed is diverse and covers important aspects, including SME policies across BRICS countries. These policies provided insights into the regulatory frameworks, incentives, and support mechanisms that influence the operating environment for manufacturing SMEs. Through this research, the study identified best practices and regulatory gaps that may affect organisational agility. The individual country SME ecosystems, long-term plans, and agility as a feature in those plans were delved into to establish whether OA is even in the plans to fuel the growth of the business. Furthermore, the study explored development strategies to assist manufacturing SMEs.

Understanding the strategies implemented in different BRICS countries provides valuable insights into the approaches that have fostered growth and resilience within the sector. Funding policies and conditionalities were also crucial components of the research. Access to finance is often cited as a significant challenge for SMEs, and analysing funding policies can shed light on the availability of capital and the conditions attached to it, which can influence the agility and sustainability of these enterprises. The above was cited as enablers and capabilities of OA.

The information accessed included national and provincial policies for each country in the BRICS bloc; these policies support SMEs in general and manufacturing SMEs specifically. Secondly, legislative and regulatory frameworks in each other countries participating in the study, National and Provincial SME support strategies, particularly to establish to what extent they provide for the OA paradox, policies supporting market access for manufacturing SMEs, National and provincial SME skills development strategies of these countries, Entrepreneurial ecosystems that assist SMEs access infrastructure and resources as well as other SME support data.

The research study used multiple data collection methods through non-probability sampling, with a purposive sample of 34 participants (14 from South Africa and 5 from each of the other BRICS countries). Data collection continued until saturation. The data collection focused on the study's four objectives.

Participants selected represented manufacturing SMEs, funding institutions, policymakers, and support institutions. SME participants from the furniture manufacturing industry responded to issues related to agility and their knowledge or understanding of the agility concept and agility barriers. Funding institutions are reflected in their institutional funding mechanisms and strategies for promoting agility, as this is not widely questioned at the funding level. Policymakers participated as developers of appropriate policy frameworks to monitor and evaluate the effectiveness of policy mechanisms for fostering agility in the manufacturing industry. Supporting institutions that incubate, accelerate, train, and bring market linkages to international markets participated.

Their role is to respond to workforce agility and agile software development, and to build the capacity of SMEs to form agile organisations for enterprises.

The objectives enabled the identification of key elements of OA, from which a semi-structured interview questionnaire was administered to 34 participants selected from furniture manufacturing SMEs and supporting institutions in South Africa, and to participants in other BRICS countries via an online platform (Klenke, 2016). Data collection was done through interviews via MS Teams and Questionnaires *via* Google Forms emailed to participants. This helped ensure that participants were not inconvenienced by a single method. The same methods were used in Delphi (expert reviews), where the 9 experts were sent a Google Form questionnaire to score the elements detailed in the conceptual framework. The questionnaires were different for SMEs and supporting institutions, as funders and policy makers supporting the sector.

The Delphi approach helped optimise objectives by involving industry experts across BRICS countries, using a two-round framework to reach consensus (Jorm, 2025). An 80 % consensus on the validated framework elements is acceptable for qualitative research (Merriam & Tisdell, 2016; Morgan, 2022). This meant that, out of the 9 experts selected for the Delphi framework, points of agreement among 7 participants should be included in the final framework.

Qualitative researchers often prefer using other methods, such as interviews, rather than analysing documents because they want to participate more actively in field research. Some researchers may avoid analysing documents because they are unaware of how valuable this approach can be (Merriam & Tisdell, 2016; Morgan, 2022).

4.5.2.1. In-depth Interviews

Tesch (2013) identifies numerous approaches to qualitative data collection, with interviews particularly prominent for eliciting detailed insights from respondents (Javadian *et al.*, 2020; Jamshed, 2014).

For this study, three qualitative data collection methods were utilised to develop an organisational agility framework for furniture manufacturing SMEs in BRICS countries.

These methods included interviews, documents, and recordings of interactions, allowing for a comprehensive understanding of industry practices and challenges. This method encourages in-depth discussions through open-ended questions, facilitating rich data collection while allowing for follow-up inquiries (Creswell, 2013; Silverman, 2013).

The interviews were conducted with key stakeholders in the manufacturing industry, including directors, employees, and industry experts. They were semi-structured, allowing for flexibility and the exploration of emergent themes. Additionally, document review supplemented the interview data and provided a holistic view of the manufacturing landscape. To ensure consistency in the data collection process, the results of document reviews were used to develop the interview questionnaire.

Each transcript was uploaded onto the ATLAS.ti system and allocated an identifier code (D1 RPT 1- D26 RPT 26). The uploaded transcripts include SMEs and institutions that support SMEs.

Describing the themes, mapping the codes and networks, and linking them to direct quotations from the respondents improved the presentation of the data. From the uploaded data, 287 codes were generated.

These were systematically analysed, yielding 4 code groups aligned with the research objectives. Additionally, 4 Networks emerged from the data.

In qualitative research, the analysis process often begins with open coding. This involves a thorough review of the data through repeated readings. This phase enables the researcher to identify and categorise potential patterns (Creswell & Poth, 2018; Saldaña, 2021; de Vos, 2005). During open coding, the researcher breaks down the data into discrete components, examines these elements, compares them for similarities, identifies differences, and probes the phenomena reflected in the data (Creswell & Poth, 2018; de Vos, 2005).

In this study, the researcher highlighted recurring patterns or themes and placed them in terms that align with each research objective.

The data coding process ended with selective coding. This was applied while conducting data coding of the interview data. Selective coding involves narrowing the list of themes into a manageable set for the final narrative (Creswell & Poth, 2018; Alhojailan & Ibrahim, 2012; de Vos, 2005). This stage entails "winnowing the data," where only the most relevant themes are retained. According to de Vos (2005), this involves creating thematic "families," with main themes serving as the "parents" and sub-themes as the "children" and "grandchildren," thereby simplifying the data into a coherent, focused presentation. Recent studies also emphasise the importance of data saturation and thematic crystallisation during selective coding to thoroughly explore all relevant themes (Moser & Korstjens, 2018; Saldaña, 2021).

In the study, axial coding was conducted. Axial coding was applied during the Delphi framework analysis. This phase focuses on identifying relationships between themes, merging related categories into clusters, and classifying the data into coherent groups (Creswell & Poth, 2018; de Vos, 2005). Axial coding involves searching for categories that exhibit internal convergence (where subcategories within a theme are consistent) and external divergence (where themes remain distinct from each other) (Creswell & Pot, 2018; de Vos, 2005). During this stage, the researcher organised the highlighted themes from various participant narratives based on similarity, consolidating them into a new document for further analysis.

As part of axial coding, divergent instances, those that do not fit neatly into existing categories, were also noted.

These instances challenged initial interpretations and encouraged critical reflection on the most apparent patterns. This process aligns with the dynamic nature of qualitative analysis, where reflexivity is essential for ensuring the credibility and depth of interpretations (Tracy, 2024).

4.5.2.1.1. Coding Protocol, Codebook Development, and Saturation

The original methodology stated that data collection would continue until saturation was reached. Practically, all interviews were completed before formal analysis began. Saturation was then assessed retrospectively through systematic coding and a code–document (CD) analysis.

In the research methodology, thematic analysis was mentioned, but it was not explicit how coding was carried out, who conducted it, how the codebook was developed, or how consistency was maintained. These details have now been provided.

Scope of the Coding Framework Across RO1–RO4

The revised methodology makes clear that one integrated coding framework was used across all research objectives (RO1–RO4)

4.5.2.1.2. Coding Approach

The study adopted an inductive qualitative coding approach consistent with interpretive thematic analysis. All interviews were completed and transcribed before formal coding began. Coding was conducted by the researcher. Open coding began by reading each transcript line by line to identify meaningful paragraphs.

Initial codes were reviewed, which led to the development of higher-order categories aligned with the research objectives. Interview data were coded using the same framework to ensure transcript consistency. The analysis did not follow a strict grounded theory sequence. Instead, it involved progressively organising descriptive codes into broader categories that helped explain the patterns in the data.

4.5.2.1.3. Codebook Development

The codebook was developed directly from the interview data. Initial coding generated a wide range of descriptive codes based on participants' responses and the content of the integrated

reports. As analysis progressed, overlapping codes were refined, merged, or reorganised into higher-level categories.

In total, 158 codes were generated. Some of these reflected contextual details rather than new analytical dimensions. These were retained in the full codebook for transparency, although only the codes that directly supported the main findings were highlighted in the thesis. An excerpt of the codebook used for ROI is provided in Appendix X, including definitions, inclusion criteria, and example quotations.

4.5.2.1.4. Inter-Coder Reliability and Coding Responsibility

All coding was undertaken by the researcher. No formal inter-code reliability testing was conducted.

To maintain rigour and consistency, the researcher:

- Documented code definitions and revisions
- Revisited earlier transcripts after refining the code structure;
- Compared patterns across transcripts; and
- Maintained a clear link between codes, categories, and findings.

4.5.2.1.5. Resolution of Coding Decisions

Because coding was conducted by a single researcher, there were no inter-coder disagreements to resolve. Instead, transcripts were repeatedly read to review coding decisions. Where code meanings overlapped or were ambiguous, they were merged or redefined. This iterative process helped to stabilise the coding structure before final themes were confirmed.

4.5.2.2. The Delphi Process and Applicability

The Delphi technique, initially developed by Helmer and Dalkey in the 1950s, is an iterative method for achieving consensus among experts on complex issues (Boulkedid, Abdoul, Loustau *et al.*, 2011). This study utilised the Delphi approach to gather insights on organisational agility, a critical factor for SMEs operating in a dynamic global market (Razavi Haijiagha, Alaei, Sadraee *et al.*, 2020).

The process typically involves administering multiple rounds of anonymous questionnaires, enabling experts to refine their opinions based on group feedback (Avella, 2016). The Delphi methodology is primarily qualitative, but it incorporates quantitative elements to assess consensus (Vernon, 2009). The Delphi process is characterised by iterative steps that encourage experts to provide feedback on specific issues and foster collaborative discussions to achieve consensus (Boulkedid *et al.*, 2011). Quality within the Delphi panel is essential; participants should possess relevant experience, a commitment to contributing meaningfully, and practical communication skills (Skulmoski, Hartman & Krahn, 2007).

The Delphi method was relevant for South African manufacturing SMEs seeking to enhance organisational agility by drawing on the successful practices of BRICS nations. By leveraging this structured approach, these SMEs can navigate their unique challenges and better position themselves in a competitive landscape.

This study sought to create a practical framework that utilises expert insights to enhance the organisational agility of SMEs in a rapidly changing marketplace. Its adaptability makes it suitable for identifying performance improvement practices in sectors with unique challenges, such as furniture manufacturing.

Alordiah and Ossai (2023) state that surveys effectively gauge opinions and behaviours through structured questioning.

In a similar vein, Odoh and Chinedum (2014) assert that surveys effectively gather distinct characteristics pertinent to the study subject, providing a structured approach to data collection.

In the context of South African manufacturing SMEs, adopting the Delphi method helped to identify tailored strategies that incorporate successful practices from BRICS countries, thereby enhancing organisational agility in a competitive environment. Findings across all four objectives enhanced the conceptualisation of the frameworks, which were validated through a Delphi approach using Optimisation, aiming to identify the best possible solution.

Nine industry experts across BRICS countries formed part of the panel and had 2 questions to score the elements they think can be replicated in the South African manufacturing SME context, in the form of a best-practice framework. 80 % consensus on the framework elements validated the final framework.

4.5.2.2.1. Criteria for Delphi Experts

Selecting experts for the Delphi panel is essential for obtaining trustworthy insights. According to Devaney and Henchion (2018), experts should have a deep understanding of the relevant subject matter.

Various definitions of expertise exist; Jones (2017) states that a genuine expert should have at least twenty years of relevant experience or an advanced degree coupled with significant professional involvement. In addition, Naisola-Ruiter (2022); Diamond, Grant, Feldman *et al.* (2014) argue that experts should demonstrate considerable knowledge and experience related to the study.

To create a balanced panel, researchers must establish clear criteria for selecting experts, as suggested by Avella (2016). Each expert should fulfil specific qualifications, including:

- Knowledge and experience: Expertise in the SME sector, manufacturing, and furniture manufacturing. Secondly, playing a supportive role for SMEs, specifically manufacturing SMEs, and furniture manufacturing SMEs.
- Voluntary willingness to participate: Participate actively throughout the Delphi process.
- Related experience: A minimum of ten years of relevant industry experience.
- Communication Skills: Ability to articulate insights effectively.

The selection process for Delphi experts was foundational to the study's credibility. Following Ismail and Taliep (2023), this research adopted a structured expert selection procedure that required candidates to meet several criteria.

- **Residency:** Experts should have lived in their respective BRICS countries for a minimum of ten years. The importance of residency stems from ensuring that information is obtained from people who have lived experience of the country and have seen its dynamics and broader spectrum.
- **Educational Background:** A minimum of a National Diploma, bachelor's degree, Master's Degree, or Doctoral degree in a related field. This will add value by gathering diverse perspectives and meanings of OA across countries, and by further explaining how each country practices OA. The level of expertise will help ensure they have the academic background and understanding of OA in their countries' manufacturing sectors. Broad and in-depth knowledge will strengthen arguments and support sound recommendations.
- **Professional Experience:** Experience in senior-level roles within the furniture manufacturing sector for at least ten years. This will inform the quality of their responses and recommendations, given their knowledge and experience with different strategies applied to achieving OA.
- **Current Employment:** Currently working in or having relevant experience within the industry. The relevance of the participant is crucial as more knowledge and sector involvement strengthen the argument. Experience in the manufacturing sector is what sets experts apart from other potential participants.
- **Research and Training Experience:** Involvement in research, financing, or training initiatives that support industry advancements. Diversifying the group's experience in research and training will help close the capacity development gap, as the study found. An expert with this background will provide insights into what constituted SME training in the past and whether OA has been part of that.

According to Keeney *et al.* (2018) and Barkhordani Ahmadi, Esmaeeli, Shariat Moghani *et al.* (2023), the Delphi method also requires anonymity, controlled feedback, and individual response to promote an open and collaborative environment. The responses were emailed back and consolidated, and final scores were calculated.

The framework table provided for background screening details of each expert to ensure relevance.

4.5.2.2.2. Composition of the Delphi Panel

The Delphi method brings a strategic approach to developing an organisational agility framework for manufacturing SMEs in South Africa, informed by best practices from BRICS countries. Boulkedid *et al.* (2011) highlight that Delphi participants often share common interests while embracing diverse perspectives, which is crucial for generating well-rounded insights in a complex field. A panel of 5 to 50 experts is usually selected through purposive sampling to ensure an in-depth discussion. Several authors (Needham and de Loe, 1990; Hasson *et al.*, 2025; Vernon, 2009) recommend this technique for obtaining high-quality insights from experienced, knowledgeable participants.

The panel of experts brings over 10 years of experience in the manufacturing sector, with an average of 21 years specifically in furniture manufacturing. The average experience of an expert was 10 years. The job titles of the experts span the critical areas of the manufacturing sector, including research, human resources, financing, market linkage, and support. Expert Nine is a furniture manufacturer that offers perspectives from the perspective of a support recipient. It is important to note that the experts are executives who daily execute their organisations' vision and navigate the sector's challenges. The experts' names were withheld and presented as Experts one to nine for ethical reasons.

The Delphi method involved two phases of interaction with a panel of experts. The study gathered data through a framework table sent by email to participants. This was preceded by a letter requesting each expert's participation. The framework table provided space for experts to justify their priority elements. The findings from the first phase were analysed using content analysis. Subsequently, the study formulated and distributed a more targeted framework table to the experts via email, necessitating quantifiable responses through a questionnaire. The study formulated the initial version of the framework during the first round and solicited expert feedback. The final draft was then refined and circulated to the experts to determine if they had any additional suggestions or modifications.

4.5.2.2.3. Determining the Panel Size

The size of the expert panel in the Delphi method plays a critical role in achieving effective consensus.

While larger panels may be used in some contexts, smaller panels are often sufficient for qualitative research, allowing for more focused and richer discussions (Waltz, Powell and Matthieu *et al.*, 2015). Studies have shown that smaller groups tend to foster more meaningful interactions, leading to deeper insights into complex issues (Boulkedid *et al.*, 2011). Although recommendations for panel size vary, a group of 5-10 experts is typically considered optimal for thoroughly exploring complex topics (Giannarou and Zervas, 2014; Needham & de Loë, 1990). This size strikes a balance by providing a range of perspectives while keeping discussions manageable, thereby enhancing the overall quality of the collected data (Hsu & Sandford, 2007).

Nine experts were contacted for this research, offering a broad spectrum of insights to facilitate a thorough qualitative analysis of the factors affecting organisational agility in furniture manufacturing SMEs (Creswell and Poth, 2018; Hennink, Kaiser & Marconi, 2019; Hennink, Kaiser & Marconi, 2017)).

4.5.2.2.4. Sources of Delphi framework data

Following an extensive literature review, a semi-structured interview guide was constructed based on the dominant themes from document reviews and interviews. The interview questions focused on fundamental research themes, including identifying barriers to agility, essential success factors, and measures to improve efficiency in the furniture manufacturing sector. The data from the semi-structured interviews were organised into themes reflecting OA enables and capabilities, practices and processes, and sense-response frameworks.

The Delphi method was then used to synthesise insights from the panel of experts, aligning with recent approaches that utilise semi-structured interviews in consensus-building processes (Ahlin, 2019).

4.5.2.2.5. The iterative Delphi method Process

- Each round of interviews followed the four fundamental principles outlined by Brown (2018): The researcher selected experts, remaining anonymous to promote honest discourse.

- Information was reviewed and refined through two rounds.
- Controlled feedback was provided regarding collective views.
- Statistical results were collated to measure consensus.

4.5.2.2.6. Delphi Instrument

The Delphi method is valuable for gathering insights into poorly understood phenomena and effectively forecasting and problem-solving (Skulmoski *et al.*, 2007).

While there is no strict guideline for the number of rounds in a Delphi study, most practices suggest 2 to 9 rounds, commonly settling on 3 (Naisola-Ruiter, 2022; Olsen, Wolcott, Haines *et al.*, 2021). This study will utilise a two-stage approach, as outlined by Hasson *et al.* (2000):

- Distribute the questionnaire with key elements from the document review and interviews to participants.
- Determine the most critical constructs for the framework.
- Achieve consensus on the developed framework.
- Develop the final framework using the constructs from Round Two

4.5.2.2.6.1. Delphi framework process plan

Round one: The first round involved a Delphi questionnaire derived from an extensive literature review of organisational agility and its application in the manufacturing SME sector. Questions were structured to capture expert opinions on organisational agility and its necessity in furniture manufacturing.

Its enablers and capabilities, practices, processes, and sense-response framework are elements of OA for the furniture industry.

Open-ended responses established a basis for further exploration, echoing the findings of Custer, Scarcella and Stewart (1999), who stress the significance of targeted questioning in research. Recent literature supports the idea that well-formulated open-ended questions can yield deeper insights and more meaningful data (Balasubramanyam & Wei, 2015).

From the elements imported into the Delphi, 11 codes emerged these are ecosystem and networks, collaboration and stakeholder mobilisation, regional partnerships, training and development, capacity development, leadership development, data-driven decision making, reengineering technology-driven process, access to market intelligence, industry trends, innovative funding models, and loan restructuring options

In Round two, the final stage of the Delphi process, experts reviewed the elements and ratings from the previous round. The Likert scale used in the Delphi process was (1-5, 1 being strongly disagree and 5 being strongly agree).

Round 2 was informed by codes scoring 4.0 and above (meaning strongly agree and agree). To develop the final framework, code scores of 4.5 or higher were selected. This allowed them to address any disagreements and clarify their positions. Participants received a revised questionnaire based on the insights gathered from Round One. They rated their agreement with various elements using a five-point Likert scale, simplifying consensus measurement (Shariff, 2015). Round one laid the groundwork for the consensus-building process by sharing aggregated feedback with participants, as Jacobs (1996) advocated. Recent research further underscores the effectiveness of Likert scales in gauging participant sentiment and fostering collaborative dialogue (Tanujaya *et al.*, 2022; Koo and Yang, 2025). Recent research highlights that this iterative process increases the likelihood of achieving consensus (Diamond *et al.*, 2014; Oxley *et al.*, 2024). A study by Majka, (2024) indicates that iterative feedback mechanisms refine group discussions and strengthen consensus-building efforts.

The above processes resulted in a 4-element framework comprising Training and development, regional partnerships, Data-driven decision-making, and Access to market intelligence & Industry trends.

4.6. Framework Evaluation

This section outlines the methodology used to evaluate the organisational agility framework. This research assesses the envisaged impact of the proposed agility framework on strengthening OA in furniture manufacturing SMEs.

According to industry reports, SMEs significantly contribute to local economies and employ a substantial workforce (Yahaya & Nadarajah, 2023). Generalising results from case studies is widely accepted, facilitating the accumulation of insights across various contexts (Yin, 2018; Stake, 2006).

4.6.1. Delphi Process and Framework Development

The Delphi process involved iterative rounds of expert consultation. The final draft of the framework was based on the most prominent areas identified during this process. These areas include Enablers and Capabilities; Practices and Processes; Sense-Response Frameworks; Best practices of OA across BRICS countries.

These elements were drawn from existing practices in manufacturing SMEs across BRICS countries. Only the most dominant components were incorporated into the final framework.

4.6.2. Results of the Panel of Experts Selection

The success of the Delphi technique depends on the combined experience and quality of the panel of experts. Skulmoski *et al.* (2007) describe a quality panel of experts as one with extensive knowledge about the subject, industry experience, and multiple years in that industry. The study selected 9 experts to form the panel. The focus in selecting a panel of 9 members was to ensure diversity of knowledge, given that the study cuts across the five BRICS countries. This diversity also helped provide high-quality advice and suggestions to address the organisational agility problem in manufacturing SMEs. This diversity enriched the quality of advice and suggestions and facilitated the solution of manufacturing SMEs' organisational agility challenges.

The selection criteria ensured that the panel members brought in industry experience and the necessary knowledge relevant to the study and, most importantly, provided a quality framework.

The Delphi technique was, therefore, used to obtain expert views from leaders in the manufacturing sector. Secondly, these experts bring relevant experience in the manufacturing sector, gained over many years in the same or a similar environment.

The initial plan was to seek 20 years or more of experience in the manufacturing sector. However, due to succession planning and organisational growth, when an executive reaches the ceiling of growth, they either move to a Board position or another department, making them no longer relevant to the study. Thirdly, the selected experts had to have the capacity, time, and interest to participate in the study. For those not fluent in English, a provision was made by translating the questionnaire into their country's language using DeepL. A table summarising and providing background information on the selected experts is provided in the annexes.

4.7. Data Analysis

The study adopted multiple qualitative data collection methods to ensure depth and credibility in the findings. Descombe (2007) stated that qualitative studies allow for a range of data collection methods. After document reviews, the second data collection method was semi-structured interviews. The purpose of semi-structured interviewing is not to impose one's views on a participant but to obtain their perspective on the subject being studied. (Hennink, *et al.*, 2017). This method analysed various documents, including policy documents, national and provincial strategies, academic journal publications, newspaper articles and organisational reports. According to Parton (2015), any document containing text is a potential source for qualitative analysis. The document refers to various materials, including visual sources such as photographs, video, and film (Merriam & Tisdell, 2016). Documents consisting of text, such as visual material, can be a source for qualitative analysis (Flick, 2018). Since document review is a widely used and valuable data collection method, it would be expected that a wide variety of literature on this topic exists; however, literature on OA remains scant. The research analysed the data by applying thematic analysis to the interviews and pattern matching to the document review.

Thematic analysis entails studying patterns and themes in a dataset. King (2004) argues that thematic analysis is a valuable method for examining and comparing the views of diverse research participants, identifying similarities and differences and, in turn, generating new and unanticipated insights.

This is the most relevant because the study explored agility enablers and capabilities, agility practices, and processed and sense-response frameworks across BRICS member states and developed a framework from those similar themes, as supported by Nowell, Norris, & Moules (2017).

Data analysis was conducted simultaneously, including document review and interview results, with data triangulation applied as the most appropriate for this study. The process focused on investigating the OA paradox occurring in different geographical areas under different sets of circumstances. Saturation was the determining endpoint of data collection. Data triangulation involves considering the time period, the environment in which the phenomenon occurs, and the people involved.

It further combines and draws results from varying data collection tools. AtlasTi software was used for coding, and hermeneutics were applied during the analysis of the data as interpreted. In the study, the focus was on BRICS, although it has expanded to BRICS+. To narrow and maintain comparability, the study focused on the 5 countries. Data triangulation zoomed in on enablers and capabilities, practices and processes, and the sense-response frameworks of OA across BRICS countries. Similarities in strategies and frameworks formed the core of the OA framework.

Quantitative analysis of the data is done after the Delphi framework. In the qualitative phase, the data is analysed into generative themes, and under each theme, sub-themes are discussed. The overlap of themes and their implications is also described. Findings from the literature are then summarised in the ensuing section. According to Merriam (2009), multiple methods of collecting and analysing data are encouraged. These and found to be mutually informative in qualitative research, providing a more comprehensive view of the studied issue. The defining characteristic of the study is holistic, examining the interrelationships between the paradox (organisational agility) and its contexts (the internal and external environments within which it occurs).

The focus is on BRICS countries, with a clear understanding that each operates under different circumstances, socially, economically, technologically, and culturally.

The various perspectives that will inform the OA framework for furniture manufacturing SMEs in South Africa.

The interpretive paradigm guided the analysis of the data. The interpretivist paradigm assumes that reality is subjective, multiple, and socially constructed. It essentially means that one person can understand another person's reality through that person's experiences of it, which may differ from one's own due to historical and social perspectives. In this paradigm, multiple qualitative sources and data collection and analysis methods were used; however, interviews were the dominant data collection method.

Several factors influence each country's priorities and key OA elements, and the researcher analysed the data while accounting for the different operating environments. The participants hold historical information and unique organisational features that foster agility. This is coupled with country, industry dynamism and local knowledge. These experiences can only be told by those who have lived them. A key aspect that emerges is regional specificity in terms of location needs, demands, and the market support environment. Therefore, they form an integral part of the shared knowledge that emerges in the analysis.

The theoretical framework combined two theories: agility theory and RBT. The study found the interpretive paradigm appropriate as it enabled exploration of the participants lived experiences and perceptions in the context of their operating environment, support systems, challenges, and ecosystems.

The use of the ATLAS ti limited bias in analysing and interpreting the data. Therefore, themes and sub-themes emanated from the data in the interview questionnaires and transcripts. Given the broad nature of the study and the framework's grounding in BRICS best practices, the key interest is to obtain perspectives from the countries and identify common and unique areas that can be replicated in South Africa through the OA framework.

In analysing the data, part of the process required examining data from document reviews. This informed the elements for further interrogation and development of the research questionnaire. It comprised twenty enablers and capabilities, nine practices and processes, and five aspects of the sense-response framework.

The interview questions were centred around these elements. The data analysis converts data collected into findings, creating form and structure. The analytical process entails reducing the volume of information from 302 codes to only the significant and relevant information. It ends with identifying trends and patterns and crafting a framework to communicate what the data reveals. As the operating environment becomes increasingly volatile, organisational agility has become an essential tool for sustaining competitive advantage. This chapter dissects the interplay between organisational agility enablers and capabilities, practices and processes, and sense-response frameworks within organisations. By systematically analysing these components, the study examines the factors that contribute to an organisation's ability to sense and respond to change.

The role of SMEs in the manufacturing sector of BRICS countries is essential for economic growth and development. This analysis seeks to explore the insights gathered from interviews with Brazil, Russia, India, China and South African furniture manufacturing SMEs, aligning them with the study's objectives to develop a framework that strengthens organisational agility of South African manufacturing SMEs by adopting best practices from BRICS countries.

4.8. Reliability/Credibility

To ensure reliability, Data triangulation was applied, zooming in on results from document review (enablers and capabilities, practices and processes, and sense-response frameworks of OA), interviews, and Delphi across BRICS countries and across the data collection tools used, i.e., Document review, Interviews, and expert reviews. The OA elements discovered during the document reviews informed the interview questionnaire and were discussed in detail.

Elements that emerged from that process informed the expert review interview tool. Similarities in strategies and frameworks formed the core of the OA framework. When multiple methods of data collection have been used in a study, triangulation in qualitative research is used to enhance validity, reliability and trustworthiness.

4.9. *Transferability*

This is limited to the purposive sample, where themes and cross-matching responses enabled comparisons of similarities. Accuracy, consistency, and dependability in the project were ensured through preset questions posed to all participants without an influencing preamble, policy comparisons across BRICS countries, and pattern alignment during data analysis. Confirmability is assured when the data is checked a few times throughout the data collection process and analysis. The study's trustworthiness is linked to credibility, relevance of the sample, and appropriate sample size (Guetterman, 2015).

4.10. *Validity of the research study*

This section outlines the application of the Delphi technique to create an organisational agility framework tailored for SMEs in the furniture manufacturing sector across BRICS countries. Primary data was collected from a panel of experts in the field, while secondary data was sourced from recent production reports and industry analyses relevant to furniture manufacturing.

The research study employed various methods to achieve its research objectives. After developing the organisational framework for manufacturing SMEs in South Africa, it underwent validation through expert reviews by nine industry experts. This chapter, therefore, presents findings and results from the Delphi used to build the framework. The Delphi process based the final draft framework on the most prominent areas in the objections: enablers and capabilities, practices and processes, and sense-response frameworks existing in manufacturing SMEs across BRICS countries. Two rounds of expert reviews were conducted, and only the best and most prominent elements were incorporated into the final framework. While findings are noted, a thorough analysis and discussion of findings is provided in the ensuing chapters.

4.10.1. *Triangulation*

Bogdan and Biklen (2003) define triangulation as the application and combination of different research methodologies to collect and analyse data.

It is used to validate results from different data collection methods. The purpose of triangulation in this thesis was to strengthen the credibility and validity of the results obtained from document review, interviews, and Delphi expert reviews as data collection tools. Triangulation was achieved by using the same instrument to collect data and by conducting MS Teams interviews and questionnaires. The content of the questionnaires was informed by the results of the document review. This process was important to ensure fair comparison between what the literature says about the OA phenomenon and what interview participants and experts say in the study. Document reviews identified several enablers and capabilities of OA, several practices and processes identified by various authors, and sense-response frameworks applied in different organisations.

These were verified through interviews with some new elements applied in various organisations. They were further tested through expert reviews by nine different experts cutting across BRICS countries, excluding China, which did not respond.

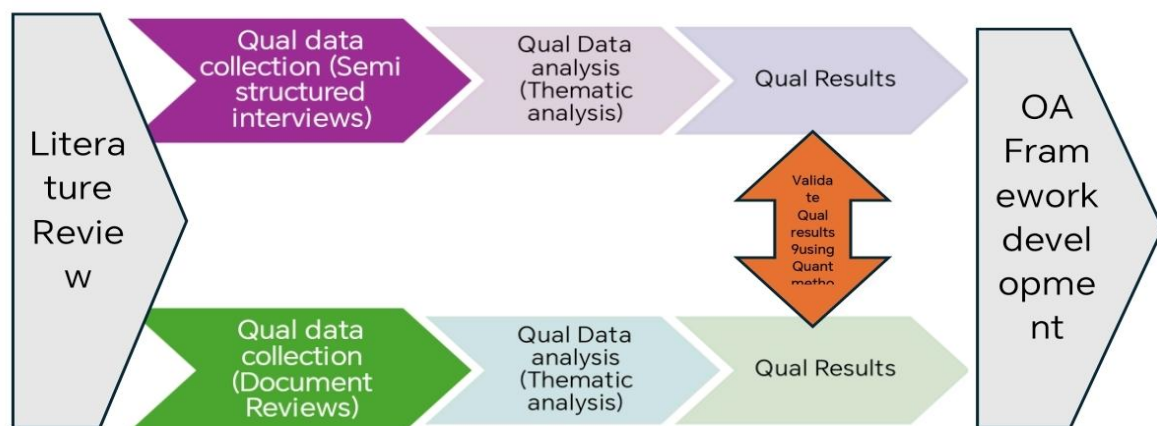


Figure 2: Process Map of Data Triangulation

Table 2: Data Triangulation (Author Interpretation)

Source		DOCUMENT REVIEWS	INTERVIEWS	DELPHI
Findings	Enablers & Capabilities	<ul style="list-style-type: none"> ▪ Technological advancement ▪ Access to finance ▪ Flexible financial support ▪ Organisational culture ▪ Training & Development ▪ Financial incentives for innovation ▪ Manufacturing flexibility ▪ Agile organisation culture ▪ Data-driven decision making ▪ Access to big data and industry trends ▪ Lean manufacturing 	<ul style="list-style-type: none"> ▪ Ecosystem enablement & networks ▪ Flexible financial support ▪ Policy support & targeted intervention ▪ Regulatory compliance and challenges ▪ Regional integration and sector linkages ▪ Regional integration ▪ Organisation culture ▪ Organisational structure 	<ul style="list-style-type: none"> ▪ Building a collaborative ecosystem for agility ▪ Regional partnerships
	Practices & Processes	<ul style="list-style-type: none"> ▪ Flexible HR Practices ▪ Environmental & Sustainability practices ▪ Integration practices ▪ Cooperative practices ▪ Mastery practices ▪ Customer value creation practices ▪ Practices when dealing with change ▪ Sourcing practices 	<ul style="list-style-type: none"> ▪ Adaptive organisational practices ▪ Integration of technology & innovation ▪ Collaborative ecosystem and networking ▪ Capacity development & skills development 	<ul style="list-style-type: none"> ▪ Empowering SMEs through skills development ▪ Integration of technology and innovation
	Sense-response frameworks	<ul style="list-style-type: none"> ▪ Training & development ▪ Regional partnerships ▪ Flat organisational structure ▪ Adaptive & flexible manufacturing ▪ Leadership development decision-making capabilities ▪ Data-driven decision making ▪ Technology adoption ▪ Best practice sharing ▪ Policy alignment 	<ul style="list-style-type: none"> ▪ Mechanisms for external sensing & feedback integration ▪ Leadership & decision-making ▪ Stakeholder engagement in sense-response mechanisms ▪ Technology-driven sensing capabilities ▪ Operational flexibility & quick response mechanisms 	<ul style="list-style-type: none"> ▪ Access to market intelligence & Industry trends ▪ Data-driven decision-making

4.11. Implementation of the Framework

The framework will be implemented through CIMO Logic. The logic provides both an outline of what needs to be done and an explanation of why and how it should be accomplished (Costa *et al.*, 2018). The implementation framework is intended to inform practice about how interventions (I) work in different contexts (C) and increase knowledge of the generative mechanisms (M) by which specific outcomes emerge (O) (Costa, Soares and de Sousa, 2019).

4.12. Ethical Considerations

Ethical considerations have been given the utmost importance throughout the research process. All participants provided informed consent, and their confidentiality and anonymity were ensured. The research study adhered to ethical guidelines and regulations to protect the participants' rights and well-being. The online questionnaire was set to allow only one response per participant to prevent multiple submissions. Before recording, all participants were permitted to record, and a confidentiality management system was outlined. The study was conducted under Ethics Clearance No: 2024-7514-8817. A letter requesting participation was sent to all gatekeepers for SME-supporting institutions and SMEs, clearly stating that participants will not be compensated for their participation in the study. This ensured that the study remained objective in all facets. The tables outlining the data collection frame cannot be linked to participants, and anonymity was maintained throughout the study. For furniture manufacturing participants, data were sourced from publicly available information, framed within the SME definition of the number of employees and the company's annual turnover. The contact details provided on those websites helped identify the correct potential participant or company owner.

In summary, this chapter has detailed the research methodology applied to investigate organisational agility in South Africa, with its specific focus on furniture manufacturing SMEs. This study sought to comprehensively understand the factors shaping agility within the manufacturing landscape by utilising a qualitative approach and an interpretive lens. The next Chapter will present the study's findings and discuss their implications for the industry.

Chapter 5 discusses the document review findings, while Chapter 6 addresses the interview findings.

CHAPTER 5

DATA PRESENTATION, ANALYSIS AND DISCUSSION

5.1. Introduction

The chapter first presents a thematic analysis from the document review, followed by interviews with BRICS furniture manufacturing SMEs and supporting institutions. It also reflects the results of the data triangulation from which themes were developed and confirmed through Delphi expert reviews.

In an increasingly volatile business environment, organisational agility (OA) has become essential for sustaining competitive advantage. This is supported by the literature discussed in Chapter 3, as well as interview responses from participants and expert views obtained through the Delphi method. This chapter presents data on the interplay among enablers, capabilities, practices, and response frameworks that facilitate OA. By systematically analysing these components, the study identified the underlying factors that enable an organisation to sense and respond to change. The chapter's flow follows the objectives detailed in Chapter 1 and below.

The goal of this study was to even organisational agility by investigating industry-oriented agility devices in the case of furniture manufacturing SMEs. The study focused on influencing furniture manufacturing SMEs to look beyond resource constraints to strategically create a competitive advantage, mitigate the adverse effects of external environmental disturbances, and achieve sustained growth. These goals were addressed through the following objectives:

- a) Determine enablers and capabilities, including how policies, regulatory and legislative frameworks in the manufacturing industry influence organisational agility, resilience and growth.
- b) Investigate how practices and processes in furniture manufacturing SMEs accelerate and influence agility.

- c) Investigate how sense-response in furniture manufacturing SMEs accelerates and influences agility.
- d) Develop a theory-led best practices framework to strengthen OA in the manufacturing sector.

A study on OA, business best practices, and the performance of SMEs in South Africa by Govuzela and Mafini (2019) found that OA is important for stimulating performance in SMEs. It further revealed that SMEs are collapsing in South Africa. The study had limitations that opened an opportunity for further study. They said that future studies could be conducted using more extensive samples of SMEs drawn from different South African provinces. The current study took this suggestion further and obtained data from the five BRICS member countries rather than from provinces. According to Schoonenboom and Johnson (2017), this would provide the researcher with an opportunity to gather knowledge through interviews, enabling the researcher to probe for additional clarity in participants' responses. However, Maziriri (2020) proposes the use of triangulation to advance knowledge generated through ethnographies and discourse analyses within organisations. Thus, an opportunity to collect data through face-to-face interviews enables the researcher to further investigate participants' responses. The study includes semi-structured interviews and document reviews, a Delphi study to validate the framework, and triangulation.

Under each data collection tool is a table of Codes, subthemes, and themes generated by uploading data to ATLAS.ti. Network maps for each objective were then generated and form part of the analysis under each research objective. Reflecting these simplifies the comparison of what came out of each data set and further strengthens triangulation.

5.2. Data Analysis from Document Reviews

The analysis integrates insights from recent academic research (2017-2024) and relevant national policies to develop agile practices in SMEs. The data analysis maps out critical factors affecting the organisational agility and competitiveness of the SME manufacturing sector. Key themes from the data align with the study's objectives, which are discussed in the study.

A considerable number of firms, particularly in the manufacturing sector, struggled to return to pre-pandemic levels of operations and profits due to low agility awareness and inadequate preparedness for external disruptions (Hunter *et al.* 2025). The pandemic's economic restrictions disproportionately affected the tourism and hospitality sector, which is intrinsically linked to furniture manufacturing. While manufacturing firms faced operational shutdowns, demand for home office furniture surged due to shifting work environments. Qi, McCauley, Baxter *et al.*, (2025). This paradox highlighted the necessity for cross-sector resilience and the urgent need to build agility into organisational frameworks to mitigate future crises. Strengthening firm-level agility reduces dependence on government recovery initiatives and enhances long-term sustainability.

Although SME support policies in South Africa emphasise training and funding, challenges such as non-compliance, weak monitoring mechanisms, and inadequate policy execution hinder effectiveness (Botha, Smulders, Combrink *et al.*, 2020; Sibiya *et al.*, 2023). The study's findings further reveal that policy, regulatory, and legislative frameworks are instrumental in shaping the agility of manufacturing firms in South Africa and beyond. However, policy formulation has historically prioritised tangible resource allocation over agility, reinforcing a reactive rather than proactive approach to crisis management. If Organisational Agility is not embedded in policy development, it will continue to be perceived as an auxiliary component rather than a fundamental pillar of organisational strategy. Despite the well-documented role of dynamic capabilities and resources in SME growth, agility has been largely overlooked as a key determinant of competitiveness, longevity, and performance. Previous research has focused on tangible resources, leaving the agility element underexplored as a resilience enabler.

Literature reviewed reveals that the absence of sector-specific OA frameworks further compounds these challenges, limiting firms' ability to adapt swiftly to economic fluctuations. While manufacturing remains a priority sector across BRICS nations, production output and GDP contributions have declined. Brazil's manufacturing sector, for instance, struggles with international competition but has demonstrated potential for lean manufacturing adoption (Bento & Tontini, 2019).

Similarly, South Africa's manufacturing decline is driven by multiple structural factors. In both cases, firms' agility, shaped by their capacity to anticipate, adapt, and respond to emerging challenges, plays a decisive role in shaping their sustainability. Existing OA frameworks lack sector specificity and are often applied as generic operational guidelines rather than integrated strategic tools. This is a gap the study seeks to close. Best practices drawn from data on BRICS nations provide valuable insights into improving OA adoption, fostering cross-learning, and redefining agility as a competitive advantage. However, technical inefficiencies and import competition continue to hinder the sector's global competitiveness, challenges exacerbated by the COVID-19 crisis (Driver, 2024). BRICS governments have implemented various measures to support SMEs, including simplified tax regimes, incubation facilities, and entrepreneurial ecosystems.

Current policies treat OA as standard operating procedure, yet its effectiveness is not monitored by industry associations, regulatory bodies, or policymakers. The study, therefore, proposes an industry-specific OA framework tailored to manufacturing SMEs, incorporating best practices from BRICS countries to strengthen agility and resilience within the sector.

Thematic analysis of the data is structured around the four objectives of the study. It highlighted critical themes related to organisational agility enablers, practices that influence agility, sense-and-response mechanisms, and the development of a best-practices framework to strengthen organisational agility (OA) in the manufacturing SME sector. This analysis further investigated how the practices and processes within furniture manufacturing SMEs influence and accelerate organisational agility.

The key themes identified relate to design practices, collaboration with suppliers, change management strategies, customer experience, and the role of external stakeholders, such as government and suppliers, in supporting the organisation's agility. Additionally, the study examines sense-response frameworks of OA in the manufacturing SME sector.

The analysis draws on insights from the data and was supported by relevant academic references to ensure alignment with current research on organisational agility. Documents reviewed revealed that small and medium enterprises (SMEs) in the manufacturing sectors of BRICS countries are vital to economic growth and development.

The study reviewed 81 SME-related research papers and policies, mostly published between 2017 and 2024, to obtain relevant, up-to-date information on the state of agility in the SME sector across BRICS countries.

The table below summarises the findings and extracts key themes from the data within the framework set out in the objectives (enablers and capabilities of OA, practices and processes, and sense-response mechanisms for manufacturing SMEs in BRICS countries). This thematic analysis highlights the importance of aligning policies, practices, and support mechanisms to foster agility, resilience, and growth in manufacturing SMEs.

Objective a) Enablers and Capabilities

Table 3: Objectives a) Enablers and Capabilities coding

Code	Subthemes	Themes
<ul style="list-style-type: none"> • Access to finance • Cost efficiency 	Flexible financial support Financial incentives for innovation	Enablers and Capabilities
<ul style="list-style-type: none"> • Business skills • Education & Knowledge • Entrepreneurial Orientation 	Training and development	
<ul style="list-style-type: none"> • Innovation • Technological advancement 	Access to Big Data Use of CAD and CAM Demand management	
<ul style="list-style-type: none"> • Manufacturing flexibility 	Lean manufacturing	
<ul style="list-style-type: none"> • Organisational culture 	Agile organisational culture	
<ul style="list-style-type: none"> • Research 	Access to data and industry trends Data-driven decision making	

The documents reviewed showed that the enablers of OA in manufacturing SMEs are multifaceted, involving policy support, access to funding, product diversification, and technological advancements.

However, several barriers hinder the full realisation of agility, including slow bureaucratic processes and limited capacity in SMEs. The analysis detailed the complex and multifaceted nature of organisational agility in manufacturing SMEs.

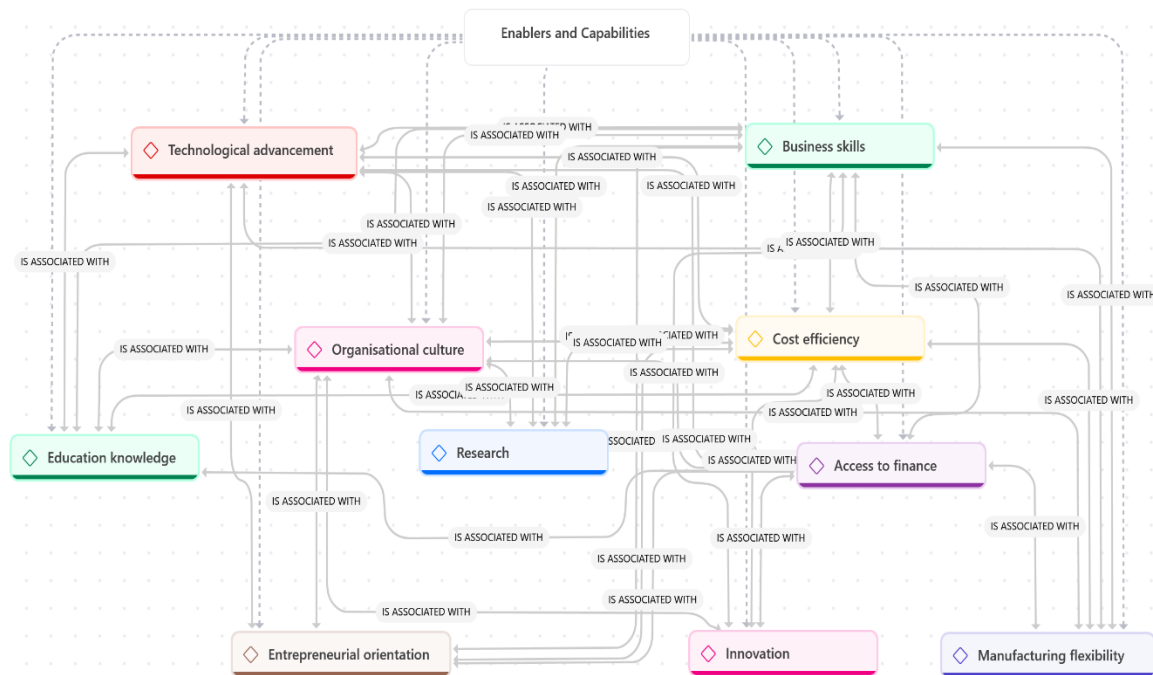


Figure 3: Network emerging from Objective a)

Key enablers such as Policy Frameworks, Skills Development, and Lean Manufacturing Practices provide foundational support for building resilience and competitiveness.

This study further investigated how the practices and processes within furniture manufacturing SMEs influence and accelerate organisational agility (OA). The key themes identified relate to design practices, collaboration with suppliers, change management strategies, customer experience, and the role of external stakeholders, such as government and suppliers, in supporting the organisation's agility. Moreover, SMEs' ability to sense and respond to external disruptions and market demands is a critical aspect of agility. The critical enablers identified include a sector-specific approach to funding, post-investment support, market linkages, and integrating educational systems with industry needs. However, significant gaps remain, particularly in developing a robust ecosystem for manufacturing SMEs.

By incorporating best practices from BRICS countries, such as blended financing and strategic market-access programs, South Africa could significantly enhance its framework for fostering organisational agility in the manufacturing sector.

Furthermore, consistent innovation is an essential feature of agile organisations and helps firms maintain their competitive edge. An organisational culture that favours OA emerged as a critical enabler of OA in manufacturing SME firms. This is coupled with collaboration, adaptability and responsiveness to market dynamics. Ongoing education and knowledge sharing equip employees with the necessary skills to navigate changes and contribute to agile initiatives. Previous studies have shown that a favourable, supportive regulatory environment can facilitate the implementation of agile practices by reducing bureaucratic hurdles and promoting innovation. Organisations must promote a culture of agility and innovation to facilitate rapid reconfiguration and learning. Lastly, while internal collaboration is essential to drive upskilling and reskilling efforts, external partnerships with educational institutions, industry bodies, and government agencies are equally critical (Kiers & Van Der Werff, 2019). However, establishing and maintaining such partnerships may pose challenges related to aligning objectives, allocating resources, and sharing knowledge.

Additionally, literature further revealed that Research, Leadership quality, Business acumen, lack of a single system to track funding previously received by SMEs, Ease of barriers to market entry, strategy, structure and processes, external support, access to information, a supportive ecosystem, a favourable taxation regime, access to markets and access to infrastructure are crucial enablers of OA for the manufacturing SME sector. By promoting a culture of continuous improvement, flexibility, and responsiveness, manufacturing SMEs can navigate challenges more effectively and position themselves for sustainable growth. Therefore, a theory-led best-practices framework focused on streamlining resource allocation, promoting strategic collaborations, and enhancing training and capacity-building to support agile, resilient manufacturing SMEs.

Additionally, documents reviewed reflect that a dynamic manufacturing sector is essential to promoting economic growth. Ghobakhloo and Azar (2018) note that manufacturing is the highest job multiplier.

Expansion in this sector plays a critical role in promoting long-term, sustainable growth, driving modernisation and production diversification through lean manufacturing. Mofokeng *et al.* (2023) argue that government regulations, skilled labour, and management practices drive business sustainability. These factors assist firms in accessing finances quickly and enable firms to manage and navigate risks and sectoral competition driven from within organisations.

Objective b) Practices and Processes Supporting Organisational Agility

This analysis centres on how practices and processes in furniture manufacturing SMEs accelerate and influence organisational agility (OA).

Table 4: Key Themes emerging from Objective b)

Codes	Subthemes	Themes
<ul style="list-style-type: none"> • Environmental & sustainability practices 	Access to information	Practices & Processes
<ul style="list-style-type: none"> • Flexible Human Resource Practices 	Adaptive organisational practices Multi-skilled workforce	
<ul style="list-style-type: none"> • Human resource practices 	Flat organisational structures	
<ul style="list-style-type: none"> • Integration practices • Cooperative practices 	Ecosystem enablement Policy development Effective funding models	
<ul style="list-style-type: none"> • Mastery practices • Customer value creation practices 	Innovation Product differentiation Enhance customer experience	
<ul style="list-style-type: none"> • Practices when dealing with change 	Skills development Adaptive manufacturing practices	
<ul style="list-style-type: none"> • Sourcing practices 	Regional partnerships Access to market intelligence Industry trends	

Based on data from relevant academic literature and national policies, the key themes identified reveal how the company’s practices enhance its adaptability to market changes.

Design practices, collaboration with suppliers, change management strategies, customer experience, and the role of external stakeholders, such as government and suppliers, in supporting the organisation's agility.

Global and BRICS comparison reports indicate that flexible human resources practices help organisations attract and retain skilled personnel, foster engagement, and support agile methodologies. A study by Zitkiene and Deksnys (2018) tabulates practices into different dimensions. These are sourcing practices, environmental and sustainability practices, integration practices, and customer value creation practices.

Adopting agile sourcing practices enables organisations to quickly adapt their supply chains to meet changing demands. Integrating processes across functions enhances collaboration and ensures a unified approach to addressing challenges. Environmental and sustainability practices strengthen corporate responsibility by making an organisation part of its operating environmental activities and programmes. They also help an organisation improve its resilience by anticipating regulatory changes and consumer preferences. Customer value creation practices focus on customer value creation ensures organisations remain responsive to client needs and market changes. In addition to changing practices, mastery, human resources, and cooperative practices are important for SMEs seeking agility.

Working together and exchanging knowledge enhances organisations' ability to innovate and respond quickly to market changes.

These collaborations give them access to new technologies and best practices, enhancing their agility and competitiveness. Furthermore, the growth of digital technologies has created new opportunities for agile SMEs. Digital transformation enables these businesses to leverage data analytics and real-time information more effectively, improving their decision-making and responsiveness to market shifts (Raut *et al.*, 2021). By adopting digital systems, manufacturing SMEs can improve their operations and enhance their overall agility, positioning themselves for success in a volatile environment.

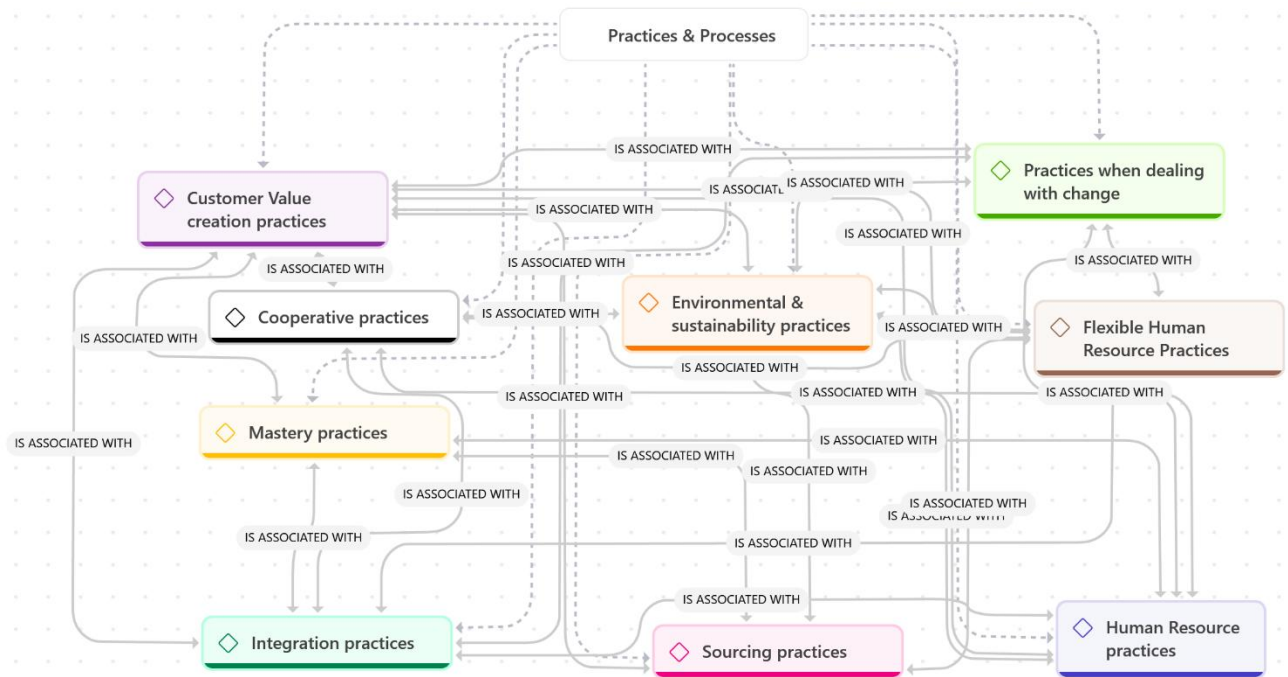


Figure 4: Network Map emerging from Objective b) Practices & Processes

Objective 3: Sense-response frameworks of OA

Objective c) Sense-Response Frameworks of Organisational Agility:

Documents reviewed link these sensing capabilities as separate resources to response capabilities. An organisation's strategy reveals its ability to sense external turbulence and respond proactively to challenges.

Document review indicates the importance of the intricate relationship between enablers, capabilities, organisational practices and processes, which should culminate in unique abilities to sense and respond to external environmental challenges. Zitkiene and Deksnys (2018) identified sensing capabilities as awareness (this can be enhanced through access to information, market trends, risk management, global threats to the industry and customer preferences at a specific period) and competence (analysing and interpreting data is crucial for organisations to respond effectively to environmental changes and internal challenges). Such responses entail different elements.

Table 5: Key Themes emerging from Objective c)

Codes	Sub-themes	Themes
<ul style="list-style-type: none"> • Sensing Capabilities: • Awareness • Competence 	Training and development Regional partnerships Industry bodies Leadership development Decision making capabilities	Sense-response frameworks
<ul style="list-style-type: none"> • Response capabilities: • Reconfiguration • Learning 	Flexible manufacturing systems Adaptive and flexible manufacturing Improving turnaround time Best practice sharing Access to big data	
<ul style="list-style-type: none"> • Coordination and Cooperation 	Policy alignment Flat organisational structures Data driven decision making Technology adoption	

Reconfiguration: This refers to the ability of a firm to reconfigure its structures, processes and resources in response to external turbulence.

Learning: Inculcating within the organisation a culture of continuous learning which enables organisations to adapt based on past experiences and current circumstances, fostering an environment of innovation and improvement.

Coordination and Cooperation: Effective coordination and cooperation across departments and teams are vital for ensuring a cohesive response to changes and challenges.

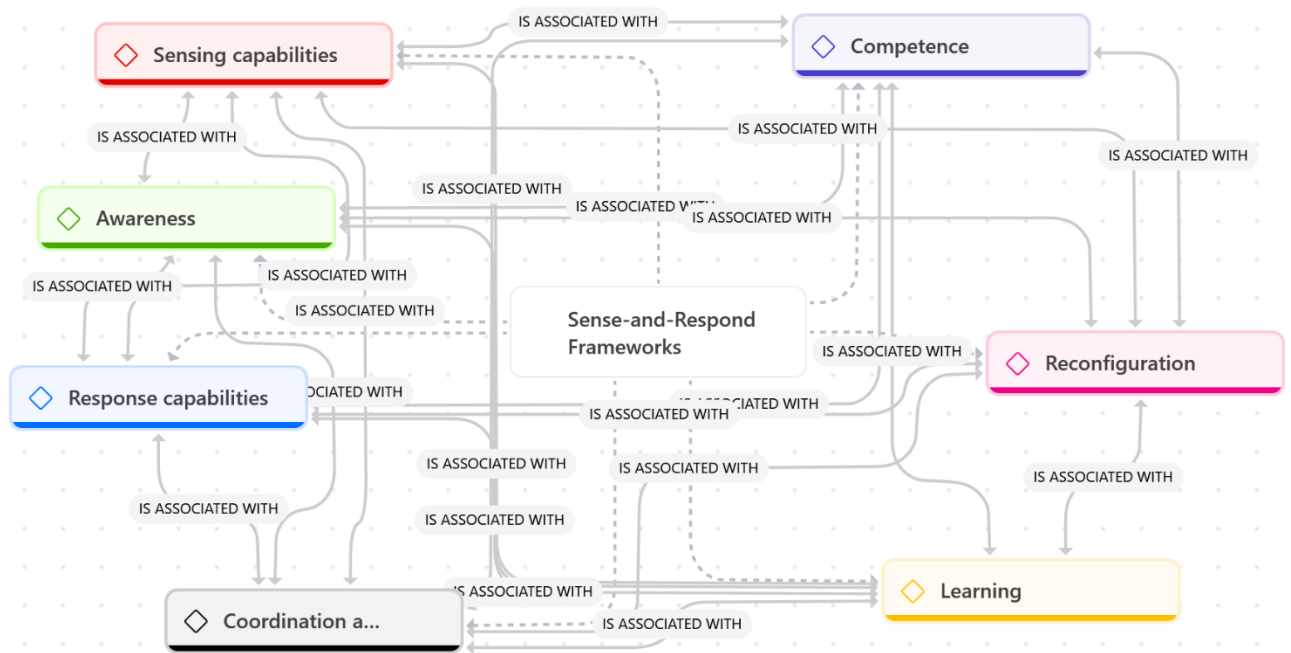


Figure 5: Network Map emerging from Objective c) Sense-response frameworks of OA

The sense-response framework offers a comprehensive approach to addressing upskilling and reskilling needs in a dynamic, uncertain environment. However, its effectiveness hinges on organisational capabilities, culture, and collaboration, emphasising the need for continuous refinement and adaptation to evolving circumstances.

Objective 4: Developing an OA Framework

From the collected data, several elements were identified as suitable for an industry-specific OA framework. These elements were then validated over two rounds of Delphi expert reviews. These were:

Table 6: OA Framework

Ecosystem enablement & networks	Ecosystem enablement
	Establishing networks
	Facilitating international market access
	Focus on reindustrialisation and transformation.
	Representation of the industry
Flexible financial support	Loan restructuring

	Support through grants
	Innovative funding models
	Flexibility in funding programs
Policy support and targeted interventions	Financial incentives for innovation
	Simplified tax compliance for SMEs
	Focus on reindustrialisation and transformation.
Regulatory compliance and challenges	Compliance as a prerequisite
	Policy reforms for regulatory and market access
	Regulatory streamlining and credit access
Regional integration and sectoral linkages	Regional partnerships and market linkages
	Regional collaboration
	Inter-sectoral collaboration
Organisational culture	Training and development
	Learning and information sharing
Organisational structure	Flat structure
	Effective communication
	Quick decision-making
<i>Objective b). Organisational Practices & processes of OA</i>	
Adaptive organisational practices	Cross-functional departments
	Collaboration with academia
	Flexible organisational structure
	Flexible operational processes
	Flexible production systems
	Workforce flexibility
Capacity building and skill development	Mentorship
	Leadership development
	Knowledge exchange and best practice sharing
	Skills development and training

	Information sharing
Integration of technology and innovation	Innovative non-standard solutions
	Data-driven insights
	Limited expertise in key innovation areas
	Support for business development and innovation
Collaborative ecosystem and networking	Collaboration with industrial associations
	Streamlined ecosystem support
	Innovative funding models
	Regional partnerships and collaboration
	Skills interventions and partnerships
Objective c). Sense-response frameworks of OA	
Mechanisms for external sensing and feedback integration	Access to market intelligence and industry trends
	Maintaining close contact with value chain members
	Development of adaptive support mechanisms
	Customer feedback
Operational flexibility and quick response mechanisms	Workforce flexibility
	Flexible organisational structure
	Flat organisational structure
	Flexible production systems
Leadership and decision-making	Experienced leadership
	Importance of leadership and basic business principles
	Leadership and guidance
	Risk appetite in leadership
Technology-driven sensing capabilities	Agility in technology and processes
	Reengineering technology-driven processes
	Market dynamics and technological advancement
	Collaboration and stakeholder mobilisation
	Representation in chambers

Stakeholder engagement in sense-response mechanisms	Stakeholder feedback
	Stakeholder relationship management
	Regional partnerships and market linkages opportunities
<i>Objective d). Best Practices across BRICS countries</i>	
Building a collaborative ecosystem for agility	Ecosystem and networks
	Collaboration and stakeholder mobilisation
	Regional partnerships
Empowering SMEs through skill development and leadership	Training and development
	Capacity building
	Leadership development
Integration of technology and innovation	Data-driven decision-making
	Reengineering technology-driven processes
Establishing feedback and sense-response mechanisms	Access to market intelligence and industry trends
Simplifying financial access and incentive mechanisms	Innovative funding models
	Loan restructuring options

From the 3 objectives, it was clear that an industry-specific OA framework is needed. Developing a best-practices framework that integrates quality assurance, technology adoption, and training initiatives can further enhance SMEs' capacity to remain agile and competitive in a dynamic global market.

In summary, the study explored the key enablers and capabilities that influence the organisational agility of furniture manufacturing SMEs in South Africa, drawing on best practices from BRICS countries. The focus was on structural, financial, technological, and policy-related factors that enable or constrain the SME's ability to respond to market changes.

The document review process also considered national policies and legislative frameworks that impact the agility of SMEs in the manufacturing sector, drawing on high-impact-factor journals and other sources. The document review process further investigated how the practices and processes within a furniture manufacturing SME influence and accelerate organisational agility (OA). The study examined the influence of policies, practices, processes, and frameworks on organisational agility, resilience, and growth in manufacturing SMEs, with a particular focus on the furniture manufacturing sector.

5.3. Data Analysis and results from interviews

This analysis explores the key enablers and capabilities that influence the organisational agility (OA) of furniture manufacturing SMEs across BRICS countries. The focus is on structural, financial, technological, and policy-related factors that enable or constrain the SME's ability to respond to market changes. The analysis also integrates national policies and legislative frameworks that affect SMEs' agility in the manufacturing sector, drawing on high-impact journal sources from 2017 to 2024.

5.3.1. Biography and Profile of Participants

SME Participants and Profile of Institutional Participants (Industry Support and Development) in the Furniture Manufacturing Industry

Table 1 below presents a biographical profile of small and medium-sized enterprises in the furniture manufacturing sector across BRICS nations, detailing their management, industry tenure, and main areas of business operations.

This profile ranges SMEs in South Africa, Brazil, Russia, India, and China within the furniture manufacturing sector. The table also provides a summary of the main institutional participants involved in supporting the manufacturing sector. It features their industry, experience, country of residence, roles, and core business functions, including industry support, training, entrepreneurial ecosystem development, and development finance. These institutions are crucial in fostering SME promotion by providing avenues for crafting policies and practices that enhance agility and growth.

Table 7: SME Participants and Supporting Institutions in the Furniture Manufacturing Industry

Participant ID	Industry	Industry Experience	Country	Position	Core Business
D3-RPT 3	RSA Manufacturing SME	24	South Africa	CEO	Furniture Manufacturer
D15-RPT 15	Brazilian Manufacturing SME	21	Brazil	Managing Director	Furniture Manufacturer
D16-RPT 16	Brazilian Manufacturing SME	23	Brazil	Founder	Furniture Manufacturer
D17-RPT 17	Russian Manufacturing SME	33	Russia	Founder	Furniture Manufacturer
D18-RPT 18	Russian Manufacturing SME	19	Russia	Founder	Furniture Manufacturer
D19-RPT 19	Russian Manufacturing SME	19	Russia	Founder	Furniture Manufacturer
D20-RPT 20	India Manufacturing SME	10	India	Executive Director	Furniture Manufacturer
D21-RPT 21	RSA Manufacturing SME	4	South Africa	Founder	Furniture Manufacturer
D22-RPT 22	China Manufacturing SME	12	China	Director	Furniture Manufacturer
D23-RPT 23	India Manufacturing SME	17	India	Founder	Furniture Manufacturer
D24-RPT 24	RSA Manufacturing SME	11	South Africa	Executive Director	Furniture Manufacturer
D25-RPT 25	Brazilian Manufacturing SME	-	Brazil	Managing Director	Furniture Manufacturer

D1-RPT 1	Industry Support Organisation	9	South Africa	Chief Executive Officer	Industry Support Organisation
D2-RPT 2	Training and Development Facilitator	8	South Africa	Senior Managers	Training and Development Facilitator
D4-RPT 4	DFI	-	South Africa	Senior Manager	DFI
D5-RPT 5	DFI	17	South Africa	Director	DFI
D6-RPT 6	DFI	2	South Africa	Director	DFI
D7-RPT 7	DFI	18	South Africa	Director	DFI
D8-RPT 8	DFI	13	South Africa	Director	DFI
D9-RPT 9	DFI	-	South Africa	Director	DFI
D10-RPT 10	DFI	14	South Africa	Director	DFI
D11-RPT 11	Industry Association	35	South Africa	CEO	Industry Association
D12-RPT 12	DFI	-	South Africa	Senior Manager	DFI
D13-RPT 13	Economic Development and Market access Support	20	China	Executive Director	Economic Development and Market access Support
D14-RPT 14	Entrepreneurial Ecosystem Support Organisation	12	Russia	Director	Entrepreneurial Ecosystem Support Organisation
D26-RPT 26	Entrepreneurial Ecosystem Support Organisation	29	Brazil	General Manager	Entrepreneurial Ecosystem Support Organisation

5.3.2. *Generating themes: Particularities, generalisations, and condensation*

Trends were identified reflecting the position of each SME and country on OA. Recurring patterns and repeated commonalities informed the generative themes. Atlas Ti generates themes and sub-themes. Although individual theme content remained inconsistent throughout the analysis, the coding process ensured a coherent structure of the different patterns and common themes.

5.4. *Data Analysis from Interviews*

This section presents the qualitative analysis of semi-structured interviews with different stakeholders. The chapter begins by assessing the sample's credibility, as Guetterman (2015) recommends, in terms of relevance and adequacy. This was followed by a discussion of the empirical data's relevance, which highlights the convergence between the research objectives and the collected data. The link between empirical data in qualitative research and the study's objectives is crucial to ensuring that the research effectively addresses the questions posed. Wolff, Mahoney and Lohiniva *et al.*, (2019) highlighted that the flexibility of qualitative methods allows researchers to adapt their data collection strategies to better meet the study's objectives, ensuring that the data collected are relevant and comprehensive.

Data was analysed from interviews with furniture manufacturing SMEs and supporting institutions, academic literature, and national policies and strategies across various countries.

It developed a theory-led best-practices framework to strengthen Organisational Agility in South African manufacturing SMEs. Industry insights from experts were collected through a Delphi study to validate the framework.

5.4.1. *SME Participants in the Furniture Manufacturing Industry*

Table 2 below presents SMEs from the furniture manufacturing sector in BRICS nations, detailing their management, industry tenure, and main areas of business operations.

The interviewed participants helped identify the problems and practices particular to SMEs, and compared South African SMEs with their Brazilian, Russian, Indian, and Chinese counterparts to formulate specific best practices. Most participants are at the executive level (e.g., CEOs, Founders, Directors), suggesting a high level of decision-making authority in their businesses. The SMEs' experience ranges from 4 to 33 years, reflecting a mix of established leaders and newcomers. The highly experienced Leaders included D17-RPT 17, with 33 years of experience, bringing decades of knowledge and expertise, while the emerging leaders included D21-RPT 21, with 4 years of experience, bringing fresh perspectives.

Table 8: SME Participants in the Furniture Manufacturing Industry

Participant ID	Industry	Experience	Country	Position	Core Business
D3-RPT 3	RSA Manufacturing SME	24	South Africa	CEO	Furniture Manufacturer
D15-RPT 15	Brazilian Manufacturing SME	21	Brazil	Managing Director	Furniture Manufacturer
D16-RPT 16	Brazilian Manufacturing SME	23	Brazil	Founder	Furniture Manufacturer
D17-RPT 17	Russian Manufacturing SME	33	Russia	Founder	Furniture Manufacturer
D18-RPT 18	Russian Manufacturing SME	19	Russia	Founder	Furniture Manufacturer
D19-RPT 19	Russian Manufacturing SME	19	Russia	Founder	Furniture Manufacturer
D20-RPT 20	India Manufacturing SME	10	India	Executive Director	Furniture Manufacturer
D21-RPT 21	RSA Manufacturing SME	4	South Africa	Founder	Furniture Manufacturer
D22-RPT 22	China Manufacturing SME	12	China	Director	Furniture Manufacturer
D23-RPT 23	India Manufacturing SME	17	India	Founder	Furniture Manufacturer
D24-RPT 24	RSA Manufacturing SME	11	South Africa	Executive Director	Furniture Manufacturer
D25-RPT 25	Brazilian Manufacturing SME	-	Brazil	Managing Director	Furniture Manufacturer

Source: Prepared by the Author

5.4.2. Institutional Participants and Their Roles in Industry Support and Development

Table 8 summarises the main institutional participants supporting the manufacturing sector. It presents their industry, experience, country of residence, roles, and core business functions, including industry support, training, entrepreneurial ecosystem development, and development finance.

Table 9: Institutional Participants and Their Roles in Industry Support and Development

Participant ID	Industry Experience (Years)	Country	Position	Core Business
D1-RPT 1	9	South Africa	Chief Executive Officer	Industry Support Organisation
D2-RPT 2	8	South Africa	Senior Managers	Training and Development Facilitator
D4-RPT 4	-	South Africa	Senior Manager	DFI
D5-RPT 5	17	South Africa	Director	DFI
D6-RPT 6	2	South Africa	Director	DFI
D7-RPT 7	18	South Africa	Director	DFI
D8-RPT 8	13	South Africa	Director	DFI
D9-RPT 9	-	South Africa	Director	DFI
D10-RPT 10	14	South Africa	Director	DFI
D11-RPT 11	35	South Africa	CEO	Industry Association
D12-RPT 12	-	South Africa	Senior Manager	DFI
D13-RPT 13	20	China	Executive Director	Economic Development and Market Access Support
D14-RPT 14	12	Russia	Director	Entrepreneurial Ecosystem Support Organisation

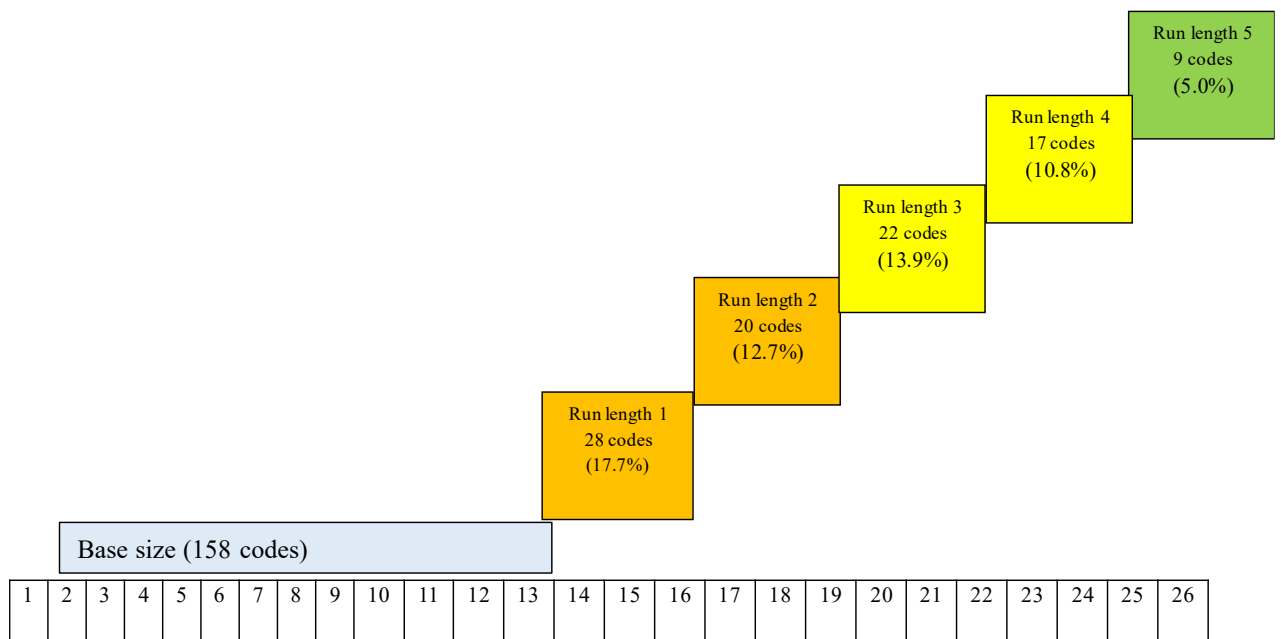
D26-RPT 26	29	Brazil	General Manager	Entrepreneurial Ecosystem Support Organisation
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Source: Prepared by the Author

These institutions are crucial for fostering promotion by providing avenues for crafting policies and practices that enhance agility and growth. Participating organisations include Development Finance Institutions, Industry Associations, Training Organisations, and Entrepreneurial Ecosystem Support Organisations. Core business areas include DFI support, training and development, market access, and industry advocacy. The experience ranges from 2 to 35 years, reflecting a mix of new leaders and experienced professionals. The roles range from CEOs, Directors, General Managers, to Senior Managers, indicating leadership and strategic influence.

5.4.3. Adequacy of the sample

The adequacy of the sample is determined by the study design (Saunders *et al.*, 2018) and by data saturation (Guest *et al.*, 2020). This study involved 26 semi-structured interviews, and the approach recommended by Guest *et al.* (2020) was used to assess saturation. In this analysis, there was a base size and run length, with the base size comprising 12 interviews (Figure 1).



Number of interviews

Figure 6: Baseline and run length for saturation.

This was selected as a minimum of 12 interviews and is generally recommended in qualitative studies (Young & Casey, 2018). Data saturation is an essential concept in qualitative research. It indicates the point where no new themes or information are forthcoming. Studies have shown that a sample size of 12 can often achieve saturation, especially in homogeneous groups (Young & Casey, 2018; Boddy, 2016). With data from different countries and institutions, saturation required a more significant number of interviews. This 12-interview base size comprises 158 codes and five run lengths. The third run length achieved a saturation of about 5%.

Saturation was assessed at the category level using a code–document analysis. Although some additional descriptive codes appeared in later transcripts, these did not introduce new analytic categories or alter the structure of the existing themes. Instead, they reinforced patterns already identified, as illustrated in Figure 6 above, regarding the achievement of saturation.

5.4.4. Relevance of the empirical data

A visual and analytical tool to verify the authenticity of the empirical data and its suitability to the research objectives (Figure 2). According to Smit and Scherman (2021), word-frequency graphic representations, such as word clouds, are valuable for word-context scanning. This was done on *ATLAS.ti, from Documents, selecting the drop-down list, then Analysis*, and then THE Word Frequencies tab. The panel opened the list of transcripts, and all 26 were then selected so that the analysis pulls out uniform words from all the transcripts. The result was the Word Cloud below.



Figure 7: Word Cloud – Relevance of the Empirical Data and its alignment with the Research Objectives

Source: *ATLAS.ti (Author)*

Some of the prominent keywords used in the study include agility, manufacturing, furniture, SMEs, development, policies, and practices. These words not only represented the study's central themes but also demonstrated their relevance to the research objectives. This method ensured that the empirical findings aligned with the research objectives by providing a clear, effective image of the areas of interest.

5.4.5. Sub-Themes emerging from the Data

5.4.5.1. Organisational Policies, Regulatory Environment and Structure as Enablers for SME Agility and Growth

Research Objective 1: Determine enablers and capabilities, including how policies, regulatory, and legislative frameworks in the manufacturing industry influence organisational agility, resilience, and growth. The aim of research objective 1 was to identify enablers and capabilities that influence organisational agility, resilience, and growth within the furniture manufacturing sector, and more importantly, how policies, regulatory structures, and legislation affect those factors; the goal also intended to explain how government and institutional interventions such as policy changes, compliance requirements, or support measures affect the agility of the furniture manufacturing SMEs. Empirical data identified seven enablers and capabilities, and these were ecosystem enablement and networks, flexible financial support, policy support and targeted interventions, regulatory compliance and challenges, regional integration and sectoral links, organisational culture, and organisational structure (Table 3)

Table 10: Organisational Policies, Regulatory Environment and Structure as Enablers for SME Agility and Growth

Codes	Subthemes	Themes
<ul style="list-style-type: none"> • Ecosystem Enablement • Establishing networks • Facilitating International Market Access • Focus on reindustrialisation and transformation • Representation of the industry 	Ecosystem enablement and networks	Organisational Policies, Regulatory Environment and Structure as Enablers for SME Agility and
<ul style="list-style-type: none"> • Loan restructuring 	Flexible financial support	

<ul style="list-style-type: none"> • Support through grants • Innovative funding models • Flexibility in funding programs 		
<ul style="list-style-type: none"> • Financial incentives for innovation • Simplified tax compliance for SMEs • Focus on reindustrialisation and transformation 	Policy support and targeted interventions	
<ul style="list-style-type: none"> • Compliance as a prerequisite • Policy Reforms for regulatory and market access • Regulatory streamlining and credit access 	Regulatory compliance and challenges	
<ul style="list-style-type: none"> • Regional Partnerships and market linkages • Regional Collaboration • Inter-sectoral collaboration 	Regional integration and sectoral linkages	
<ul style="list-style-type: none"> • Training and development • Learning and information sharing 	Organisational culture	
<ul style="list-style-type: none"> • Flat structure • Effective communication • Quick decision-making 	Organisational structure	

5.4.5.2. Environment and Networks

A strong ecosystem is necessary for SMEs to shift their focus from ideation to product development. Participants highlighted the importance of support frameworks that foster innovation, collaboration, and expansion opportunities. One participant pointed out the role of creating an ideal ecosystem.

“The picture they drive is what the ideal ecosystem is, what principles and rules need to be designed so that the environment enables the development of RSA to go forward” (RPT1-RSA).

“The development of manufacturing networks was also identified as a key enabler of SME growth. According to one participant, “We must look at establishing a network of manufacturing that works on ideas and scales them” [D10-RPT10-RSA].

These insights highlight that well-structured networks are important in converting ideas into marketable products, thereby aiding the growth of SMEs. Furthermore, organisations such as SEBRAE actively contribute to internationalisation, with programs such as the International Business Department seeking to strengthen the global competitiveness of MSEs.

‘SEBRAE has an International Business Department responsible for promoting the insertion of MSEs into the international market, by improving the competitiveness and productivity of small businesses in foreign markets’ [RPT26 - Brazil].

In South Africa, initiatives such as the Furniture Master Plan and the Furniture Challenge Fund are instrumental in supporting the furniture sector. Similarly, the NEF's linkage to DTIC mandates for reindustrialisation and gender transformation demonstrates a commitment to inclusive growth. *As a participant puts it, “The Furniture Master Plan and Furniture Challenge Fund” (D24–RPT24–RSA).* Another participant said, *“NEF’s linkage to DTIC mandates for reindustrialisation and gender transformation” (D8-RPT8 – RSA).*

Additionally, the South African Furniture Initiative (SAFI) acts as an intermediary between the furniture manufacturing industry and the government, advocating for industry interests. *“SAFI would be the vehicle that the industry uses to represent the industry as far as government is concerned” (D11-RPT11 – RSA).*

5.4.5.3. Flexible financial support

According to participants, there is a significant need for SMEs to have access to flexible financing mechanisms, given their potential. This is especially true in the manufacturing sector. This is mainly because rapid innovations in the sector force businesses to change, highlighting the key role that tailored financial arrangements can play in helping SMEs become more agile. Limited access to capital and economies of scale remain a barrier for SMEs, frustrating their ability to grow effectively.

As a small company, we face limited access to finance and economies of scale, which hinders our ability to invest in advanced technologies and large-scale production (D23-RPT23-Brazil).

Options for loan restructuring were stressed as a viable option to overcome financial difficulties whilst enabling long-term development:

Let's assume that this company, for some reason, has not paid for six months. There are two or three choices. Either you push for arrears clearance, or you restructure the entire facility. In this case, we add time to the loan, for example, one more year. Similarly, to shorten the instalment" (D4-RPT4 - RSA).

Participants highlighted the necessity of financial programmes created for cost recovery rather than profit-making, enabling greater latitude in funding structures.

If you are not expected to make a profit, but just to retain the cost of your capital, it means that in terms of the programmes that you package downstream to support businesses, they will be flexible [D12-RPT12 – RSA].

Participants also cited innovative funding strategies, such as convertible grants. *"Some of the funding could be, let's say, convertible into a grant after a while" (D7-RPT7 – RSA).*

In addition, the combination of funding and training allows the SMEs to grow: *"by providing access to funding and training, we help them pivot effectively when needed" (D9-RPT9-RSA).* These insights underscore the need for flexible financial mandates and novel funding models to address the funding constraints small businesses face.

5.4.5.4. Policy support and targeted interventions

Policy frameworks, initiatives, and government efforts play a crucial role in facilitating SME growth, both directly and indirectly. Participants expressed the need for innovation policies and financial support. According to a South African participant, *"The government and industry stakeholders should provide more structured support, such as financial incentives for innovation" (D24-RPT24 - RSA* In Brazil, simplification of tax compliance was a significant enabler. *"Brazil has a variety of policies at the national and local levels to assist small businesses, especially the National Simples, where tax compliance is simplified for*

small companies” [D15-RPT15 – Brazil SME]. Also important was South Africa’s emphasis on reindustrialisation and inclusion.

‘When NEF started, it was very closely linked to the DTIC mandate, which was from time to time to reindustrialise the country as far as possible. But in doing so, we also aim to transform players across the different subsectors within the manufacturing sector [D8-RPT8 - RSA].

These examples illustrate how policies not only provide financial and operational relief but also seek to integrate SME growth with the nation's imperatives.

5.4.5.5. Regulatory Compliance and Challenges

Compliance with national and regional regulations is one of the conditions any institution seeking to provide support must meet. Even though they promote accountability, they also create problems. The compliance requirement came into sharp focus in South Africa.

‘There are compliance issues. The first thing we check is that any enterprise we support must be compliant. This includes legal compliance, such as being registered with the CIPC and being a South African citizen” [D12-RPT12 – RSA].

A Chinese participant supported this assertion on legality, saying, *“No special requirements, but the business must operate legally and comply with China’s policies and laws of China” [D13-RPT13 - China]*

Various suggestions have been made to ease the economic burden of compliance through regulatory changes. According to an Indian participant, *“Recent reforms aim to streamline regulations, reduce compliance burdens and improve SMEs’ access to credit”. [D23-RPT23 - India].* A South African participant echoed a similar perspective, saying, *“Policy reforms to improve regulatory environments and promote international market access for SMEs’ [D24-RPT24 - RSA]*

Interestingly, compliance poses operational challenges, as the Chinese participant highlighted.

We operate within the limits of policies that affect our operations at the national level, and at the local level, including those regarding environmental protection and environmental law” [D22-RPT22 – China].

This illustrates the trade-off that must be made to apply the required standards without creating excessive red tape for SMEs.

5.4.5.6. Regional Integration and Sectoral Links

Partnerships at the regional level and links across sectors were seen as increasing not only SME competitiveness but also their market penetration. On the potential of partnerships within SADC and AfCTA, a South African participant said, *“There is an opportunity now. Especially with all these regional partnerships from SADC to AfCTA, that is an opportunity for us to create those types of linkages” [D8-RPT8 – RSA].*

At the same time, another South African participant stressed the need for intersectoral collaboration.

“Influence policy across sectors in the economy, coordination role, how do we make South Africa sustain its broad-based energy supply and demand, infrastructure development must be viewed as a critical factor of a thriving economy, creating more room for SMEs in the wider context [D1-RPT1 – RSA].

A Chinese participant echoed a similar view, *“We are welcome to establish a channel with South African and African associations and colleagues’ [D13-RPT13 - China].* From these insights, it can also be seen that strategies aimed at strengthening cooperatives on a larger scale can support the growth of SMEs by placing them within more active frameworks.

5.4.5.7. Organisational Culture

Organisational culture significantly influences the performance of SMEs. The findings revealed that empowered cultures promote the climates in which employees can be effective and successful in the organisation.

Adaptability, especially in the education system, is said to rest on defining it as a learning organisation, knowing that, for that to happen, continuous training, innovation, and development work are needed.

A South African participant emphasised this approach. *“Where thinking innovation, training, and development is so ahead that this is essentially a learning organisation”* [D1-RPT1 – RSA]

Another South African participant noted that organisational culture further encourages employee active participation and innovation of the employees. *“The organisational culture is highly empowering, encouraging employees to contribute ideas and lead projects”* [D24-RPT24 - RSA].

This empowerment gives people confidence and ownership, making them core to the organisation's success. Knowledge sharing and the promotion of collaboration significantly improve organisational propensity to agility. For example, a Chinese participant said, *“We regularly organise visits and exhibitions for our members to demonstrate, learn and share information”* [D13-RPT13 – China]

Such settings enable SMEs to be agile and competitive by promoting innovation and driving a generation that looks ahead. Commitment to improvement is pointed out as an enabler of organisational agility. A Brazilian participant said,

“Our culture is one of constant evolution, where workers are asked to put forward new solutions to new problems. This allows them to participate in the maintenance of agility” [D25-RPT25 - Brazil SME]

This improvement instils robustness in the organisation while ensuring it can meet the demands of an evolving market and other challenges.

5.4.5.8. Organisational Structure

It was very clear that flat organisational structures gave SMEs an edge in adapting to the turbulent forces of the environment.

It enables quick decision-making, effective communication, and modification of current operational requirements. An Indian participant stressed the benefits of the competitive strategy that flat organisational structures provide. *As a result of flat organisation, decisions are taken very quickly, and the organisation can keep up with the changing requirements” [D23-RPT23 India].*

Another participant also mentioned the efficiency that flat structures provide in terms of the amount of time needed to make important decisions and in communication during the decision-making process. *“Our organisational structure is relatively flat, allowing for quick decision making and communication.” [D15-RPT15 -Brazil].* Moreover, this decentralisation of processes ensures that SMEs respond more quickly to external and internal developments, as one participant explained: *“The flat organisational structure ensures that decision-making is fast and decentralised, which enhances our responsiveness.” [D25-RPT25 - Brazil].* In other words, from the above discussions, one can see that structural agility in terms of the ability to be decentralised and flat enables SMEs to be sufficiently and appropriately adaptive in changing environments.

In summary, Figure 3 provides a thematic map of organisational policies, the regulatory environment, and structure as enablers of SME agility and growth. The findings underscore the complexity of the enablers and capabilities required to achieve agility, resilience, and growth in furniture manufacturing SMEs operating in BRICS economies. The study shows how organisational policies, financial strategies, governance frameworks, and structural aspects enable the performance of furniture manufacturing SMEs.

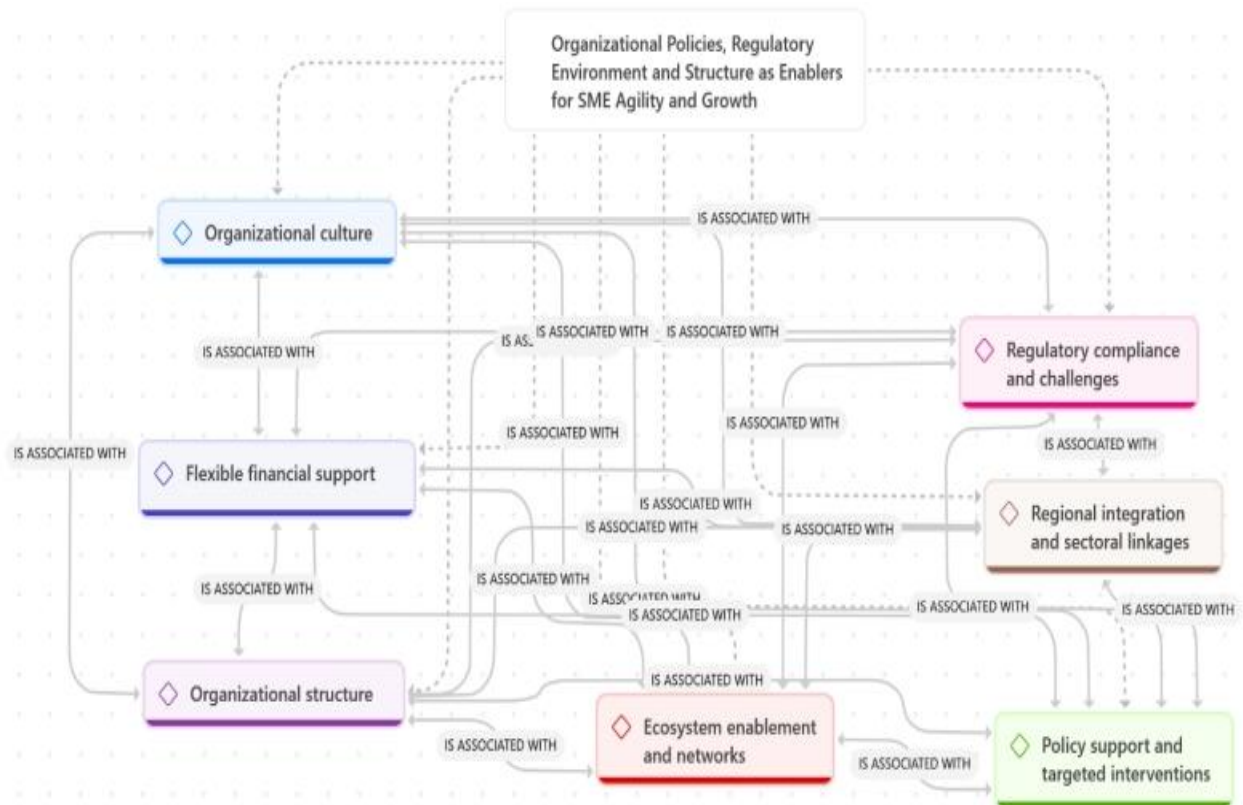


Figure 8: Organisational Policies, Regulatory Environment and Structure as Enablers for SME Agility and Growth

To summarise the findings on organisational policies, the regulatory environment, and structure as enablers of SME agility and growth, see Figure 2 above. It emphasised the complexities underlying the enablers and capabilities required to achieve agility, resilience, and growth in furniture manufacturing SMEs operating in BRICS economies. It further underscores how organisational policies, financial strategies, governance frameworks and structural aspects enable the performance of furniture manufacturing SMEs.

5.4.6. Enhancing Organisational Agility in Furniture Manufacturing SMEs: Practices and Processes

This speaks to Research Objective 2, which investigated how practices and processes in furniture manufacturing SMEs accelerate and influence agility. The focus of this objective was to gain an understanding of how organisational practices, funding decision-making, and policymaking enable the acceleration of agility in furniture manufacturing SMEs.

By focusing on how these elements interact, the present study identifies the enabling factors for SMEs necessary for an effective response to changing market and competitive conditions. These factors were adaptive organisational practices, capacity building and skill development, integration of technology and innovation, as well as a collaborative ecosystem and networking (Table 4).

Table 11: Enhancing Organisational Agility in Furniture manufacturing SMES: Practices and Processes

Codes	Subthemes	Themes
<ul style="list-style-type: none"> • Cross-functional departments • Collaboration with academia • Flexible Organisational Structure • Flexible operational processes • Flexible Production Systems • Workforce flexibility 	Adaptive organisational practices	Enhancing Organisational Agility in Furniture Manufacturing SMES: Practices and Processes
<ul style="list-style-type: none"> • Mentorship • Leadership Development • Knowledge Exchange and best practice sharing • Skills Development and Training • Information sharing 	Capacity building and skill development	
<ul style="list-style-type: none"> • Data-driven insights • Innovative Nonstandard Solutions • Limited expertise in key innovation areas • Support for business development and innovation 	Integration of technology and innovation	
<ul style="list-style-type: none"> • Collaboration with industrial associations • Streamlined ecosystem support • Innovative funding models • Regional Partnerships and Collaboration • Skills interventions and partnerships 	Collaborative ecosystem and networking	

Source: Authors

5.4.6.1. Adaptive Organisational Practices

SMEs in the furniture sector in BRICS countries stated that measures are needed to establish cross-functional departments to enhance teamwork and speed decision-making.

“Cross-functional teams facilitate collaboration between design, production, and marketing, enabling us to respond swiftly to market changes” [D15-RPT15 -Brazil SME]. The Indian participant alluded to employee training programmes.

“Our structure is highly flexible; thanks to the cross-training programs we implement. Employees are trained in multiple areas, allowing them to easily transition into different roles depending on the business's needs” [D23-RPT23 - India].

These sentiments were shared by the South African SME participant, who expressed how structural flexibility enhances agility. *“The company’s internal structure is flexible, with cross-functional teams allowing rapid decision-making” [D24-RPT24 – SA SME].*

The ability to rapidly reconfigure and rearrange the organisational structures in the firm’s production processes was also advocated as a key feature of adaptability. One Russian participating SMEs remarked on the flexible stance taken by his company. *“Flexible production system and modular work cells allow us to quickly adapt to changes” [D25–RPT25–Russia SME].* However, it is not only necessary to adapt practices to operational issues but also to adapt products to changing consumer demands, a change prevalent during the pandemic. *“We moved from standard furniture to home office furniture” [D3-RPT3 – SA SME].*

Collaboration emerged as another crucial theme linked to innovation. *“Collaborations with academic institutions could lead to innovative solutions and help us stay ahead of the curve in terms of design and technology” [D18-RPT18 – Brazil SME].* The premise underlying these insights is that adaptive organisational practices characterised by flexibility, collaboration, and innovation are critical to the success of SMEs in the furniture manufacturing industry in today's competitive, dynamic marketplaces.

5.4.6.2. Capacity Building and Skill Development

The capacity-building and skill-development intention is to prepare SME leaders and employees to address the complexities of ever-changing marketplaces.

In South Africa, supporting institutions provide leadership training to strengthen employees and the organisation, enabling them to be more flexible and adaptable. One of the participants from a DFI noted the need for structured training: *“For me, what is outstanding in our DFI is that the training facility comes in handy for the leaders to go through it because you're not going to fly blindfolded” [D5-RPT5 – SA].*

Leadership development was noted as a glaring gap in improving adaptability and resilience, as another participant echoed. *“They have all the skills, but it turns out that they have a huge lacuna because the advanced leadership development skills are not on the table. So, when you develop the leadership piece. You start to see that level of flexibility and adaptability” [D1-RPT1 - SA].*

However, best practice brings learnings besides trainings; *“So, there are so many best practices and lessons that we can take and share ours with them” [RPT11- SA],* and yet capacity building enhances interaction through learning and development. A Chinese participant said, *“We regularly organise visits and exhibitions for our members to demonstrate, learn, and share information” [D13-RPT13 – China].* With an increased focus on developing a culture of information sharing, an Indian participant said, *“We foster a culture of information sharing across departments, allowing us to make well-informed decisions” [D23-RPT 23 - India].*

The interventions underscore the importance of supportive institutions that equip SMEs with the skills and knowledge needed to be agile and adaptable.

5.4.6.3. Integration of Technology and Innovation

The adoption of new technologies and the fostering of innovation in a competitive environment make the integration of technology and innovation a key determinant of improving organisational agility and competitiveness in furniture manufacturing SMEs (Fajarika *et al.*, 2024).

SMEs operating in different regions underscored the need for flexible organisational structures to quickly adopt new technologies and to enable rapid transformation of production processes.

According to a participant from China, *“This structure allows us to implement changes swiftly, such as adopting new technologies or altering production processes in response to market trends”* [D22-RPT22 – China SME]. However, in Russia, the geopolitical constraints and sanctions have made it necessary to innovate in an unconventional way, which has prompted SMEs to invent creative and non-standard solutions; *“Our country has sanctions. Therefore, we must come up with non-standard solutions that cannot be described in classical terms”* [D14-RPT14 – Russia SME]. Nonetheless, barriers to implementing advanced technologies still exist, as reported by another Russian SME: *“Our team is small and lacks specialised knowledge in areas like digital marketing or advanced manufacturing technologies, which affects our ability to innovate”* [D17-RPT17-Russia SME].

The role of institutions in promoting innovation and competitiveness is quite significant. For instance, in Brazil, SEBRAE plays an important role in providing SMEs with the necessary packages of services for business development, with a view to improving technology; *“SEBRAE provides essential business development services, fostering innovation and competitiveness”* [D15-RPT15 – Brazil SME]. The insights from the data and the analysis of market density help SMEs pinpoint areas where they can expand. *According to the Data SEBRAE Survey, which filters by state, sector (commercial/industrial/services), furniture segment, and a list of activities, the business density in the Duque de Caxias sector is 7.18%. This makes it the second region in the state after the city of Rio de Janeiro, which has 35.58% of the sector's concentration”* [D26-RPT 26 - Brazil]. South African SMEs further highlighted the importance of integrating customer and research data into their business strategies as being flexible and responsive; *“However, we rely on customer service insights and market research to adapt quickly to changes”* [D24-RPT24]. These insights suggest that it is imperative to create an environment conducive to the assimilation of technology and the diffusion of innovations.

5.4.6.4. Collaborative Ecosystem and Networking

Collaboration and networking among existing SMEs and other ecosystem stakeholders are essential not only for the survival of these entities but also for enhancing agility, competitiveness, and growth prospects. Findings from interviews with SMEs and supporting institutions across the BRICS countries indicated the need for partnerships, funding mechanisms, and international promotion to ensure that SMEs build strong ecosystems. Chinese and South African institutions supporting this activity underscored the importance of collaborating closely with other industry players and forming alliances to resolve supply chain issues. According to a Chinese participant, *“Keep close cooperation with industrial associations in the target markets is essential” [D13-RPT 13 - China]*.

In the same vein, a South African participant pointed out the need to modify funding methods and to integrate more creative approaches to address new issues arising in their environment. *“Updating funding models, creating new partnerships, and addressing emerging challenges in the supply chain” [D9-RPT9 - SA]*.

However, regional partnerships and networks are also very important as they increase the number of opportunities available to SMEs. A South African participant exemplified the benefit of taking advantage of regional structures such as SADC and AfCTA. *“There’s an opportunity now, especially with all these regional partnerships from SADC to AfCTA, for us to create those types of linkages” [D8-RPT8 - SA]*. Working with employers and academics includes a commitment towards skill development once more.

“How many artisans do we need to support, how many learnerships, how many internships, how many bursaries. And all these different types of skills, interventions that we need to support in partnership with employers. And of those employers, SMMEs form, you know some of them as well as other partners within the post-school education and training sector” [D2-RPT2 - SA].

Brazil and India stressed the importance of engagement with international competition and free access to markets as parameters that will enhance SME competitiveness.

According to Brazilian officials, the SME supporting organisation as a business internationalization policy has a foreign currency inflow target among its primary objectives; “SEBRAE has an International Business Department responsible for promoting the insertion of MSEs into the international market, by improving the competitiveness and productivity of the state's small businesses in foreign markets” [D26-RPT26 - Brazil], whereas in India, the penetration of SMEs into foreign markets is a goal that must be pursued by the use of different strategic levers; “Introducing incentives to help SMEs penetrate global markets and compete internationally” [D23-RPT23 - India]

All the above emphasise the need for creating collaborative ecosystems and networking opportunities for the benefit of furniture manufacturing SMEs.

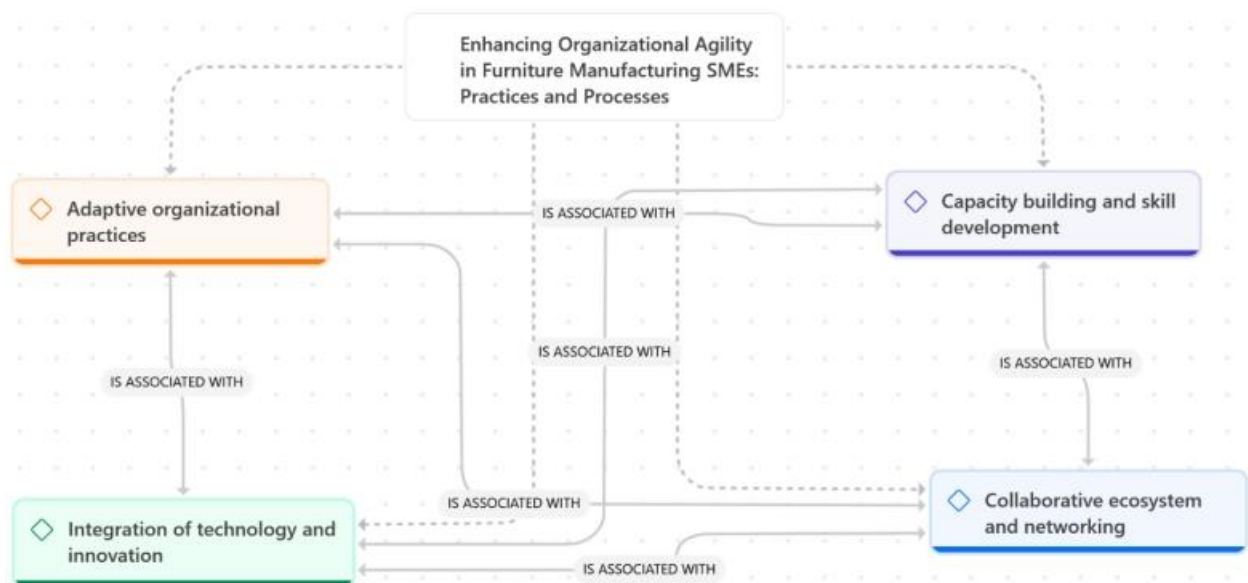


Figure 9: Enhancing Organisational Agility in Furniture Manufacturing SMEs: Practices and Processes

Figure 8 above presents findings on the practices and processes used by manufacturing SMEs. They indicate the intricate relationships among adaptive organisational practices, the integration of technology and innovation, Capacity development and skill development, as well as collaborative ecosystems and networking. The findings on objective 2 can be summarised as follows and highlighted in Figure 3, as it emphasises the relationship between adaptive practices, skill development, technology integration, and collaborative ecosystems as essential dimensions of organisational agility in the context of furniture-making SMEs.

These practices and processes enhance SMEs' ability to quickly adjust, innovate, and partner with a range of stakeholders in response to changing market conditions, thereby sustaining their competitiveness in the global furniture manufacturing market.

5.4.7. Sense-Response Mechanisms in Furniture Manufacturing SMEs: Catalysts for Agility and Adaptability

Research Objective 3: Investigate how sense-response in furniture manufacturing SMEs accelerates and influences agility. This objective investigated the sense-and-response mechanisms that help organisations stay competitive by enabling them to respond quickly to internal and external changes. The findings identified several sense-response mechanisms.

These were the mechanisms for external sensing and feedback integration, operational flexibility and quick response, leadership and decision-making, technology-driven sensing, capabilities, and stakeholder engagement in sense-response (Table 6).

Table 12: Sense-Response Mechanisms in Furniture Manufacturing SMEs: Catalysts for Agility and Adaptability

Codes	Subthemes	Themes
<ul style="list-style-type: none"> • Access to market intelligence and industry trends • Maintain close contact with value chain members; • Development of adaptive support mechanisms • Customer feedback 	Mechanisms for External Sensing and Feedback Integration	Sense-Response Mechanisms in Furniture Manufacturing SMEs: Catalysts for Agility and Adaptability
<ul style="list-style-type: none"> • Workforce flexibility • Flexible Organisational Structure • Flat organisational structure • Flexible production systems 	Operational Flexibility and quick response mechanisms	
<ul style="list-style-type: none"> • Experienced leadership • Importance of Leadership and Basic Business Principles • Leadership and guidance • Risk appetite in leadership 	Leadership and Decision-making	

<ul style="list-style-type: none"> • Agility in Technology and processes • Reengineering Technology-Driven Processes • Market dynamics and technological advancement 	Technology-driven sensing capabilities	
<ul style="list-style-type: none"> • Collaboration and stakeholder mobilisation • Representation in Chambers • Stakeholder Feedback • Stakeholder relationship management • Regional Partnerships and market linkages opportunities 	Stakeholder engagement in sense-response mechanisms	

5.4.7.1. Mechanisms for external sensing and feedback integration

External sensing and feedback integration are extremely important for enhancing the agility of furniture manufacturing SMEs. These mechanisms enable organisations to anticipate and respond to change, and to integrate with the external reality in which they operate. As it turned out, access to market intelligence and trends was a key factor in helping SMEs become more competitive. As a South African participant stressed, *“ensuring that SMEs have access to up-to-date market intelligence and industry trends is important” [D9-RPT9 - SA]*

This underscores the need for informed decision-making to be based on all available information at that time. This also resonates with information from India, where active market monitoring helps SMEs cope with changing requirements. According to a participant, *“Proactive monitoring of market trends prepares us for the time when demand will change” [D23-RPT23 - India]*.

Another mechanism is close connections with value chain members, which give rise to timeliness. A Chinese participant pinpointed this, saying, *“Keep in close contact with all members, including members of the value chain” [D13-RPT13 - China]*.

These relationships facilitate the flow of critical information, giving SMEs a competitive edge and keeping them relevant.

Moreover, the development of the targeted schemes can be seen as an understanding of the significance of strategising. In the words of one Russian SME, “*We are looking for options. We devise schemes*” [D14-RPT14-Russia], demonstrating that they are ready to combat any market constraints and maximise prospects on the market.

SME decision-making processes are also influenced by input from clients, the government, and other stakeholders. A South African participant illustrated this: “*Through feedback from stakeholders that are the outside clients, essentially the government essentially and any other role players in the country*” [D5-RPT5 - RSA].

Finally, emphasising the role of customer feedback provides a clear indication of the market-driven approach many SMEs have adopted in product design. A participant reported: “*We prioritise customer feedback in our design process, ensuring that our products meet market demands effectively*” [D15-RPT15 - Brazil SME]

5.4.7.2. Operational flexibility and quick response mechanisms

The analysis of the insights indicates that operational flexibility and quick-response mechanisms are attributes that support greater agility in SMEs in the manufacturing sector. These practices enable companies to use resources efficiently and maintain productivity even during disruptions. One notable flexibility approach was noted in South Africa, where businesses switched to remote working models: “*Companies, particularly in the furniture sector, were willing to move their staff to work from home*” [D3-RPT3 - RSA].

This illustrates how the sector can leverage flexible strategies to continue operating amid challenges such as the COVID-19 pandemic. Cross-trained employees also emerged as a vital contributor to mobility. An Indian participant said, “*We have a pool of skilled employees who are cross-trained to handle various roles, making it easy to reallocate personnel depending on current needs*” [D23-RPT23 - India]. This strategy not only ensures better use of the existing workforce but also enables the business to resume activity in complex situations.

Structural agility also plays a key role in enabling rapid response. In South Africa, cross-functional teams make collaboration and decision-making more effective. *“The direction the company takes is usually agreed on by all team members, which leads to faster decision making” [D25-RPT25 – SA].*

The above also corroborates the experience from Brazil. *“The flat organisational structure ensures that decision-making is fast and decentralised, which enhances our responsiveness” [D25-RPT25 - Brazil].* Reinforcement of this principle accompanied the Chinese demonstration of the same idea. *“Ours is relatively flat, which facilitates quick decision making and communication” [RPT22 - China]*

In addition to structural adaptability, the high-level production systems also enable swift response. A South African SME participant emphasised responsiveness to external change. *“The company is highly responsive to external changes due to its flexible production systems and quick internal communication” [RPT24 - RSA].* Modular work cells were similarly viewed as the key determinants in operational dexterity. According to a Brazilian participant, *“The flexible production system and the modular work cells allow us to quickly adapt to changes” [D25-RPT25 - Brazil].*

5.4.7.3. Leadership and Decision Making

The findings suggest that leadership and its accompanying decision-making are critical competencies for addressing challenges, generating innovations, and promoting both growth and adaptability in the furniture manufacturing SMEs. Leadership attributes such as experience, risk-taking, and team motivation are crucial, as the participants noted.

Making decisions based on relevant information is a defined quality of effective leadership. One participant from Brazil noted that seasoned leaders are required in such a market. *“Our leadership team has extensive experience in navigating market challenges, allowing informed decision-making” [D16-RPT16 -Brazil]*

Such interventions help leaders overcome market disruptions and adjust their plans to drive growth.

In South Africa, the motivational and guiding roles of leaders were particularly underlined. *“Managers who will guide you, support you, and who will fuel that fire and encourage you to get going” [D5-RPT5- SA]*. This further reinforces the importance of leadership in fostering a culture that encourages employees to perform at their best. Risk-taking is another key dimension of leadership in the furniture manufacturing industry. In the words of one participant, serving in a leadership position requires both bravery and risk-taking. *“If you want to occupy a leadership space in the sector, you have to have a huge appetite for risk” (D21-RPT21 – SA)*. It is even more understandable why this risk appetite is present when operating in regions characterised by dynamic markets, for instance, where innovation and ‘risk taking’ in decision-making are often the order of the day.

In addition, the participants emphasised the core importance of leadership in actual ethical principles and standards. In the case of one South African participant, *“What I have seen in a lot of businesses is that it is totally about leadership. Right, leadership is very important. And yes, being able to apply the basic business principles”*. [D7-RPT7 – SA].

This remark demonstrates that to implement a strategy, a leader needs both strategic and operational skills. But there is also leadership, as that is what critical thinking and informed judgment look like, according to another South African participant who elaborated on its importance. *“Just because someone has a voice does not mean that they are intelligent. Just because someone is a sea of an organisation does not mean they're smart” [D1-RPT1 – SA]*. This understanding underscores the need for mental discipline and genuine expertise in decision-making.

5.4.7.4. Technology-driven sensing capabilities

The findings suggest that technology use is a major contributor to the agility of SMEs in the furniture industry, enabling them to sense, respond to, and anticipate market changes. Participants underscored the importance of adopting technology to improve procedures, knowledge processes, and competitiveness. The South African participants discussed the strides made towards holistic technological adoption in the business processes to improve organisational agility.

“We are really working hard to become more agile. And that includes. You know, looking for ways to better utilise technology to streamline some of our processes. So, we are in the process of reengineering some of our business processes to help us become more agile” [D2-RPT2 - SA]

This view aligns with the company's vision to use technology as a tool within the organisational context to enhance speed and efficiency.

For the Chinese participant, integrating technology is a key area for balancing demand and supply and for developing new technologies around market opportunities and recognisable gaps. *“Market share, demand and supply matching, new technology promotion’ [D13-RPT13 – China]*. This observation points to diversified demand and new technologies in production and operations.

Purchasing new and modern equipment has been reported as an important step toward strengthening an organisation’s technical capabilities and broadening its operational scope. An Indian participant noted, *“We have invested in modern machinery” [D23-RPT23 – India]*. This is an established approach, as it shows that technological enhancement translates into greater operational efficiency and rapid market changes.

Russian SMEs highlighted the role of technology in providing applicable solutions by increasing their dependence on facts and analysis, *“Data-Driven Decision Making: Utilising data analytics and business intelligence tools to make informed decisions about product development, marketing, and operations” [D18-RPT18 – Russia]*.

This finding highlights the great potential of data analytics in developing and implementing strategies suited to the current and anticipated markets.

5.4.7.5. Stakeholder participation in sense-response mechanisms

The findings suggest that it is critical to build and nurture a collaborative ecosystem for the growth and sustainability of furniture manufacturing SMEs. Such a group is well-suited for public-private partnerships, stakeholder participation, and regional linkages.

One of the participants from Brazil emphasised the importance of these entrepreneurial synergies in the push for public and private participation in aid to small businesses. *“The mobilisation of public and private actors for the development of small businesses throughout the state” [D26-RPT26 – Brazil].*

That shows the importance of integrating multi-sector resources in building a conducive SME environment. Including SMEs in such strategic groupings, such as active commerce chambers, enables them to hold stronger positions in decision-making processes within their industry. As noted by a South African participant, *“We have SME's represented at various chambers [D11-RPT11].* At least, such studies provide assurances of the absence of unnecessary barriers for SMEs at the interface with policy developments affecting those businesses and the frameworks enabling their effective functioning.

In addition, stakeholders' opinions can be considered an important element of cooperative ecosystems. One participant illustrated this point. *“Through feedback from stakeholders that are the outside clients, essentially the government essentially and any other players in the country” [D5-RPT5].* This emphasises the necessity of forming long-lasting collaborations with various concerned parties to tailor vision, goals, and objectives to the realities of the market.

One participant identified stakeholder relations as central to the best practices of the reviewed organisations. *“Best practice for us, more than anything, is our relationship with our stakeholders” [D2-RPT2].* This claim illustrates the levels of support and collaboration with stakeholders needed to be able to effectively support and develop SMEs.

Cross-border strategic partnerships provide great prospects for the SMEs, too. A South African participant observed the scope of efforts such as SADC and AfCFTA, particularly when stating, *“There is an opportunity now, especially with all these regional partnerships from SADC to AfCFTA, for us to create those types of linkage.” [D8-RPT8].*

These partnerships enable pillar capabilities such as trade across borders, resource sharing, and knowledge transfer, thereby increasing the available niches for SMEs in the market.

Figure 5 presents the sense-response mechanisms in the Furniture manufacturing SMEs thematic map.

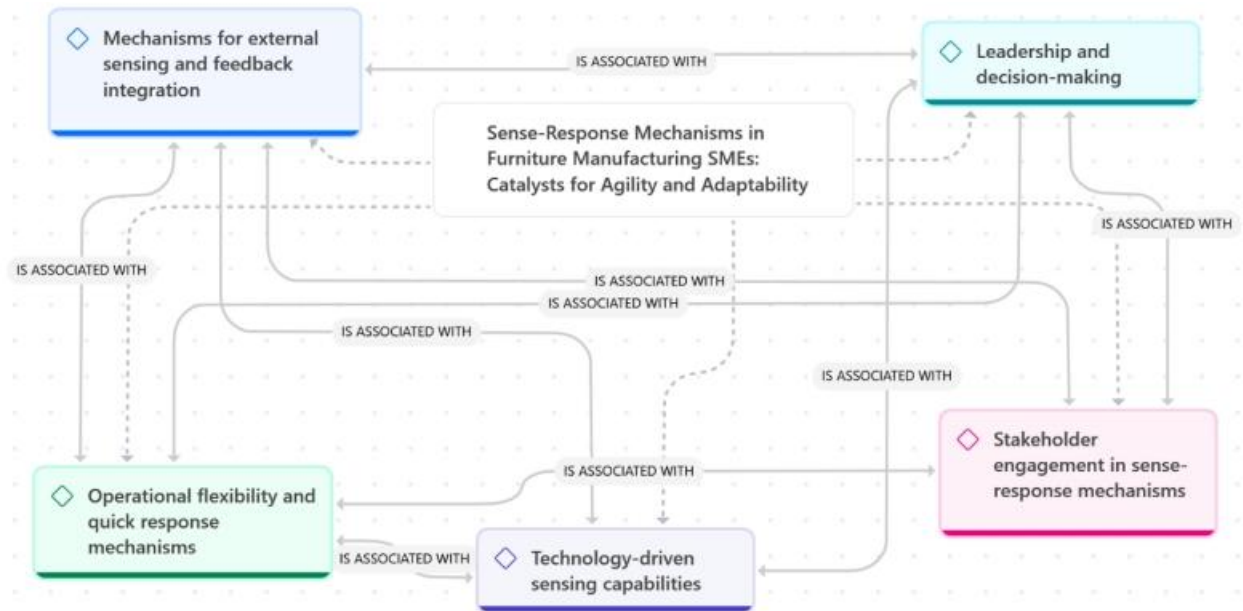


Figure 10: Sense-response mechanisms in Furniture manufacturing SMEs.

In summary, the research findings suggest that sense-response mechanisms play a significant role in the furniture sector. SMEs can improve their agility and adaptability by integrating market intelligence, enhancing operational flexibility, appointing strong leaders, leveraging technology, and involving stakeholders. This all-round strategy can help SMEs survive and maintain healthy growth amid rapidly evolving global market conditions.

5.5. Developing a Theory-Led Framework for Organisational Agility in Manufacturing SMEs

Develop a theory-led best-practice framework to strengthen OA in the manufacturing sector. This research objective sought to develop a theory-driven framework detailing best practices to improve organisational agility (OA) in the manufacturing sector, with a focus on furniture production SMEs.

The findings illustrate a serious gap, with an emphasis on the scope of relevant action, ecosystem facilitation, stakeholder engagement, and transformative interventions to develop capable, responsive, and growth-promoting SMEs. (Table 6).

Table 13: Developing a Theory-Led Framework for Organisational Agility in Manufacturing SMEs

Codes	Subtheme	Themes
<ul style="list-style-type: none"> • Ecosystem and Networks • Collaboration and stakeholder mobilisation • Regional partnerships 	Building a collaborative ecosystem for agility	Developing a Theory-Led Framework for Organisational Agility in Manufacturing SMEs
<ul style="list-style-type: none"> • Training and development • Capacity Building • Leadership development 	Empowering SMEs through skill development and leadership	
<ul style="list-style-type: none"> • Data-driven decision-making • Reengineering Technology-Driven Processes 	Integration of technology and innovation	
<ul style="list-style-type: none"> • Access to market intelligence and industry trends 	Establishing Feedback and sense-response mechanisms	
<ul style="list-style-type: none"> • Innovative funding models • Restructuring of loan options 	Simplifying financial access and incentive mechanisms	

Source: Author

5.5.1. Building a Collaborative Ecosystem

To achieve organisational agility, SMEs must operate within a well-structured, supportive ecosystem that includes actors from the public and private sectors.

A participant highlighted this view, thus, *“The picture they drive is what the ideal ecosystem is, what principles and rules need to be designed so that the environment enables the development of RSA to go forward” [D1-RPT1]*. The development of manufacturing networks was also identified as a key enabler of SME growth. *“We must look at establishing a network of manufacturing that works on ideas and scales them” [D10-RPT10-RSA]*.

These insights emphasise that well-structured networks are critical for transforming ideas into marketable products, thereby facilitating SME growth and competitiveness. *“The mobilisation of public and private actors for the development of small businesses throughout the state” [D26-RPT26]*. Regional partnerships were also identified as key drivers of an integrated support system for SMEs. *“There is an opportunity now, especially with all these regional partnerships from SADC to AFCTA, for us to create those types of links’ [D8-RPT8]*.

5.5.2. Empowering SMEs through skill development and leadership

The study findings stress building capacity and leadership development as key factors that could facilitate organisational agility (OA) within SMEs. Leadership, in this sense, was identified as one of the elements that determine an organisation’s ability to address organised challenges.

One of the participants pointed out the need to develop the right tools for SMEs to operate in dynamic environments. *“We will provide training to make sure that they are adequately equipped” [D7-RPT7]*

However, this was perceived to go beyond technical skills and emerged as a critical need to be fulfilled for enhancing leadership skills. One participant described the situation as it currently stands.

“They have all the skills, but it turns out that they have a huge lacuna because the advanced leadership development skills are not on the table. So, when you develop the leadership piece. You start to see that level of flexibility and adaptability” [D1-RPT1]

This suggests that both leadership skills and technical skills are necessary at the same time to enhance organisational performance in relation to SMEs.

5.5.3. Integration of Technology and Innovation

Innovative practices and the adoption of advanced technologies are essential for SMEs to remain competitive and agile. As a participant noted, “*Data-Driven Decision Making: Using data analytics and business intelligence tools to make informed decisions about product development, marketing, and operations*” [“D18-RPT18].

Another participant emphasised technology-driven agility. “*We are working hard to become more agile, and that includes looking at ways to better utilise technology to streamline some of our processes.*” [D2-RPT2].

5.5.4. Establishing Feedback and Sense-Response Mechanisms

Participants' insights succinctly indicated that external factors, such as timely feedback and external challenges, should be anticipated within an agile framework within SMEs' operational structures. An organisation with swift responses and sound strategies is unlikely to suffer from external disruptions.

Providing real-time market information is one-way SMEs can increase their responsiveness, as highlighted by one of the respondents. “*Ensuring that SMEs have access to up-to-date market intelligence and industry trends*”’. [D9-RPT9].

Another participant explained how an early review of market trends can help SMEs adjust to industry changes. “*Furthermore, proactive monitoring of market trends allows us to anticipate and plan for potential changes in demand*” [D23-RPT23]. These insights are particularly relevant because SMEs need effective tactics and tools to understand and respond to market changes.

5.5.5. Simplifying Financial Access and Incentive Mechanisms

Access to financial resources and flexible funding mechanisms were seen as critical enablers of SME agility. A participant noted, “*Some of the funding could be convertible into a grant after a while*” [D7-RPT7].

Moreover, financial restructuring opportunities are key to maintaining operational stability. *'We extend the loan, get another year. Likewise, to shorten the instalment.'* [D4-RPT4].

Figure 6 provides the thematic map on developing a Theory-Led Framework for organisational agility in Manufacturing SMEs. In summary, the findings of this research objective are integral to making the case for creating an overarching, theory-based structure to improve manufacturing for SMEs.

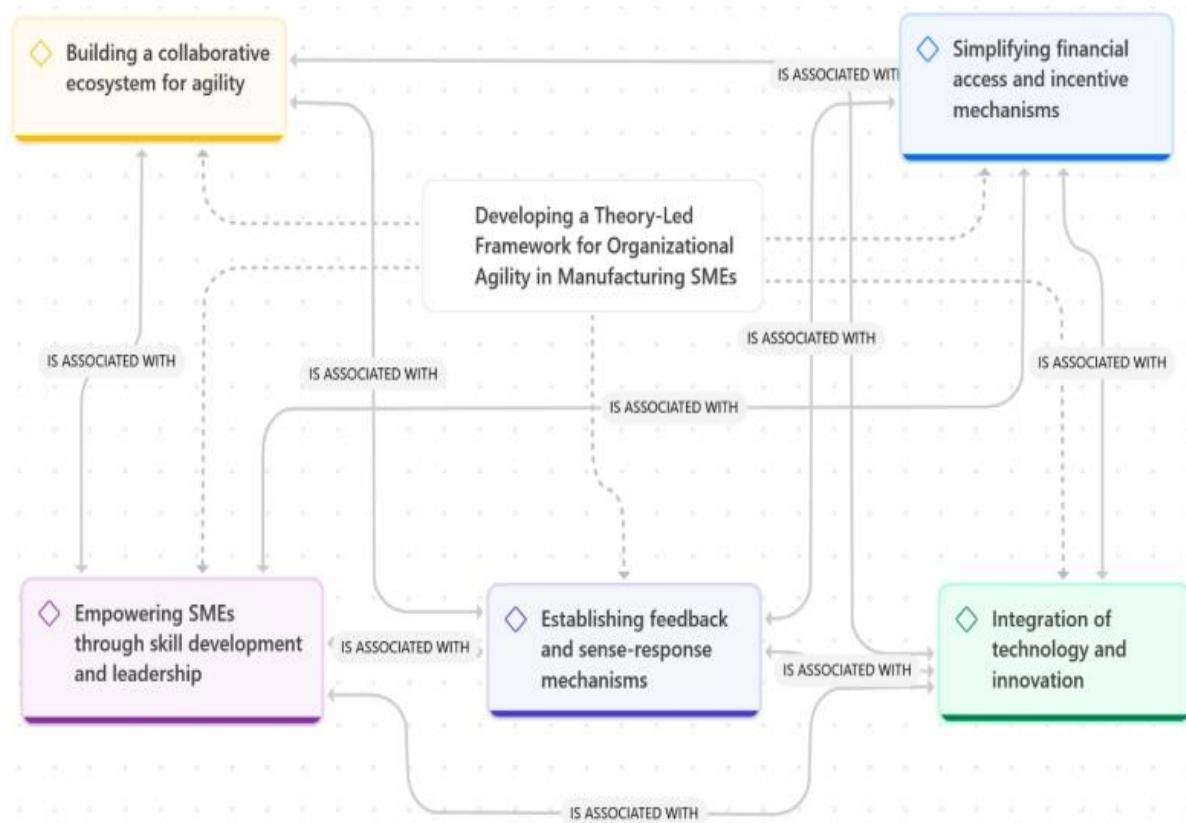


Figure 11: Developing a Theory-Led Framework for Organisational Agility in Manufacturing SMEs

Source: Authors

5.5.6. Conclusion of the Section

The first objective of the study determined enablers and capabilities, including how policies, regulatory, and legislative frameworks in the manufacturing industry influence organisational agility, resilience, and growth.

Empirical data revealed seven enablers and capabilities: ecosystem enablement and networks; flexible financial support; policy support and targeted interventions; regulatory compliance and challenges; regional integration and sectoral links; organisational culture; and organisational structure. The ecosystem and networks enabled a process that created an environment where stakeholders (e.g., businesses, governments, and academic institutions) could collaborate effectively. This highlights the importance of connectivity and partnerships within a supportive ecosystem for innovation and growth.

In addition, flexible financial support is critical to access to adaptable, responsive financial mechanisms tailored to the needs of SMEs. This is effectively advanced through targeted policy support and interventions. Policies designed to promote specific outcomes through well-targeted initiatives and programmes. Despite this, SMEs also have to effectively address regulatory compliance and challenges to balance innovation and development while adhering to legal and regulatory frameworks. Regional integration and sectoral linkages are also important for encouraging regional cooperation and creating synergies across sectors. This is done by creating interconnected industries that work together to foster economic development and innovation. Organisational culture and organisational structure are also critical to determining how work is divided and coordinated. Effective enablers and capabilities are expected to increase SME resilience, integration, and competitiveness.

The second objective focused on factors that improve organisational agility through practices and processes in small- and medium-sized enterprise manufacturing furniture. These factors were adaptive organisational practices, capacity building and skill development, integration of technology and innovation, as well as collaborative ecosystem and networking. Adaptive organisational practices can foster flexibility in decision-making, production processes, and resource allocation to adapt to changing market demands. In addition, capacity building and skill development are needed. This can help develop the workforce's agility by fostering continuous learning and upskilling. Also important is the integration of technology and innovation. This helps to leverage digital tools and innovative practices to improve productivity, quality, and competitiveness. There is also a collaborative ecosystem and networking element that emerged repeatedly from the data.

These factors can improve SME responsiveness, enabling them to quickly adapt to market trends and customer preferences, thereby increasing productivity and competitiveness.

The third objective investigated how sense response in SMEs in furniture manufacturing accelerates and influences agility.

The findings revealed mechanisms for external sensing and feedback integration, operational flexibility and quick response, leadership and decision-making, technology-driven sensing capabilities, and stakeholder participation in sense-response mechanisms. The sense-response mechanisms are crucial for organisations navigating complex, fast-moving environments. They provide the foundation for agility, responsiveness, and resilience in the manufacturing industry. The integration of these sense-response mechanisms - external sensing, operational flexibility, leadership, technology, and stakeholder participation - creates a dynamic and adaptive organisation. By aligning these mechanisms with the unique challenges and opportunities in the South African furniture manufacturing sector, SMEs can improve their agility, competitiveness, and long-term sustainability.

The fourth objective focuses on developing a theory-led best-practice framework to strengthen OA in the manufacturing sector. The study identifies key building blocks that characterise such a structure, including collaborative ecosystems, leadership and skill development, technological integration, feedback mechanisms, and financial accessibility. Each of these elements highlights major constraints and intervention strategies that can enhance the ability to grow, respond, and be competitive in the furniture-making industry.

Table 14: Best practices derived from the three data collection tools

DOCUMENTS REVIEW	INTERVIEWS	DELPHI REVIEW	EXPERT
Ecosystem and networks	Building a collaborative ecosystem for agility	Ecosystem & networks	
Collaboration and stakeholder mobilisation		Collaboration and stakeholder mobilisation	

Regional partnerships		Regional Partnerships
Training and development	Empowering SMEs through skill development and leadership	Training and development
Capacity building	Simplifying financial access and incentive mechanisms	Capacity building
Leadership development		Leadership development
Data-driven decision-making		Data-driven decision-making
Reengineering technology-driven processes	Integration of technology and innovation	Reengineering technology-driven processes
Access to market intelligence and industry trends		Access to market intelligence and industry trends
Innovative funding models	Establishing Feedback and sense-response mechanisms	Loan restructuring options
Loan restructuring options		Innovative funding models

5.5.7. Data analysis from Delphi expert reviews

Delphi Analysis

Expert reviews were done over 2 rounds to ensure consistency and clarity. Taylor *et al.* (2021) posit that defining explicit criteria for consensus is crucial for practical analysis. In this context, consensus was determined by the percentage of agreement among participants, with a threshold of 70% deemed acceptable (Jones & Hunter, 2022). There are, however, multiple interpretations of what constitutes consensus. To ensure consensus in the Delphi expert reviews, questions were assigned scores on a Likert scale of 1-5, with 1 indicating not important to the OA framework and 5 indicating extremely important.

5.5.7.1. Summary of Round 1 Expert Reviews

OA elements were categorised, and only those with a score of 4.5 or higher were sent for Round 2 Validation.

They ranged between STRONGLY AGREE and DO NOT AGREE, considering consensus among the experts. This is where the 9 experts further selected the elements they thought should best inform the final OA framework proposed by the study through its fourth objective.

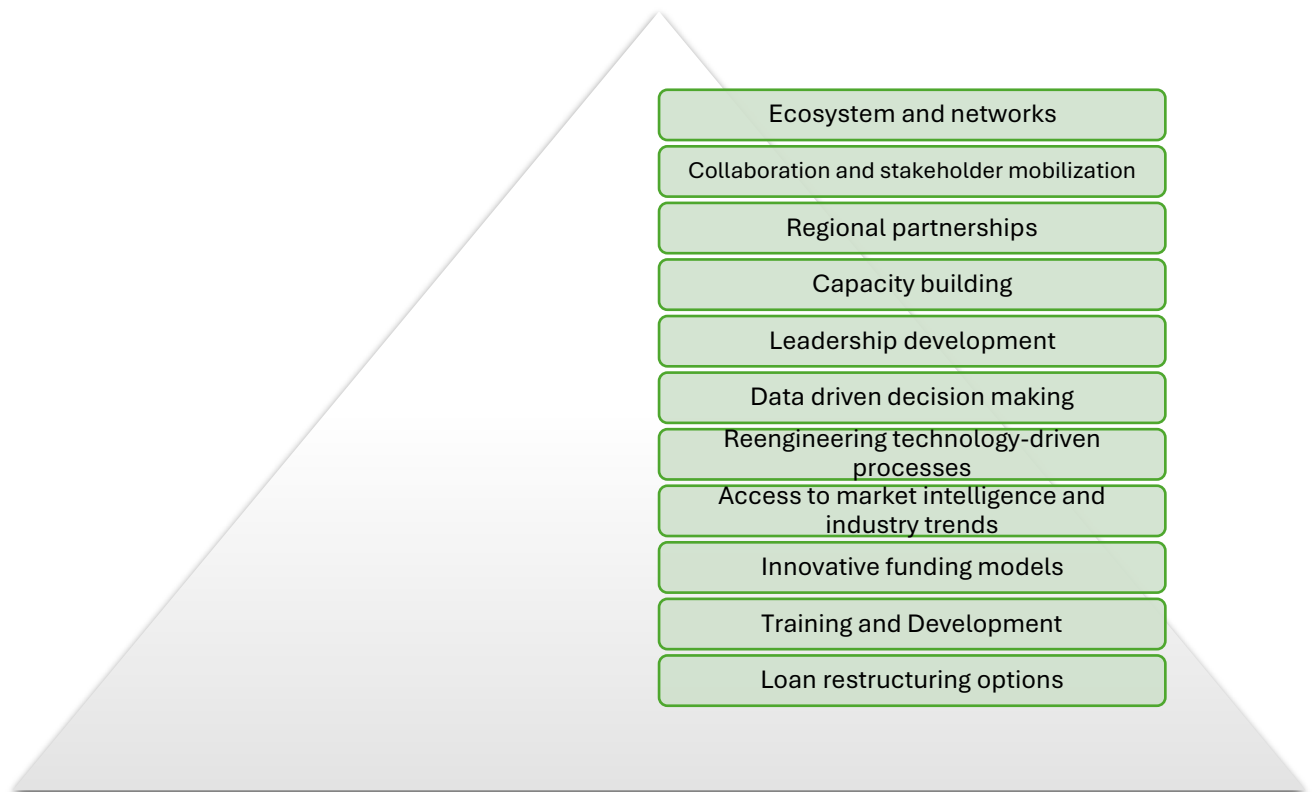


Figure 12: Round One Delphi expert review results

5.5.7.2. Summary of Round 2 Expert reviews

Elements scoring 4.0 or higher formed part of the final OA framework, as depicted in the diagram below. Experts went further to justify the selection of these elements as follows:

All the Round 2 choices emphasised one important point: To drive BRICS economic development, a social compact and design system-thinking approach integrating all the enablers on which there is agreement is the bedrock upon which economic development could be forged and thrive.

"Training and Development: Critical to building a resilient and skilled workforce capable of adapting to market changes.

Financial Incentives for Innovation: Essential for Encouraging SMEs to Invest in Innovative Practices.

Data-driven Decision Making: Facilitates strategic decisions based on actionable insights.

Leadership Development: Ensures effective guidance during transformations.

Collaboration with Industry Associations: Enhances industry-wide knowledge-sharing and standards adherence."

Summary of the Rankings on the Themes from Round Two

Organisational Agility Framework

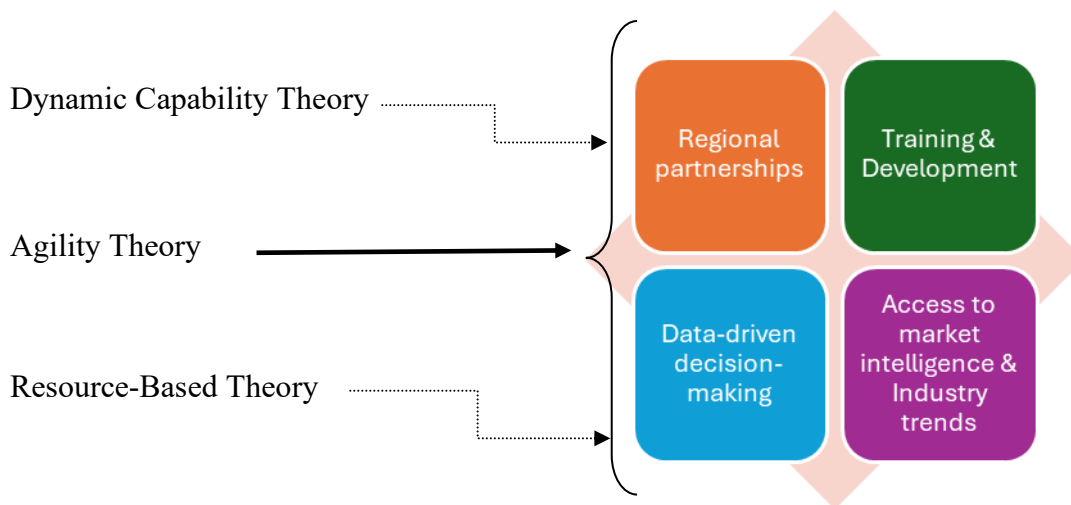


Figure 13: Organisational Agility Framework

The OA framework for the South African SME manufacturing sector draws on BRICS best practices, particularly because countries like China and India boast some of the most robust entrepreneurial ecosystems globally. Yet there are concerns regarding the sustainability of these ecosystems; some argue that rapid growth can lead to volatility and inequity within these markets (Zhang *et al.*, 2021). Lessons from these developing countries can provide valuable insights for South Africa, but must be adapted thoughtfully to local conditions.

The two-stage framework depicted above was proposed at the beginning of the study, forming the core of the study, and validated through the Delphi Framework. The framework will effectively improve the organisational agility of manufacturing SMEs in South Africa. This framework presents the dominant factors that emerged from the data collection process.

Therefore, the study met all its intended objectives and provided an industry-specific organisational agility framework for the furniture manufacturing industry.

The developed OA framework was evaluated, concluding that it addresses the integral issue of organisational agility in the manufacturing sector. The framework is easy to understand and to apply in a natural-furniture manufacturing setting.

The framework is available to support the industry. It can be implemented as it is or with minor amendments, given the specific context of the different organisations. It can be concluded that the developed OA framework suits the South African industry context and significantly improves organisational agility.

Industry leaders can adopt the framework to transform their manufacturing operations. Additionally, policymakers in South Africa will find this study helpful in developing supportive economic policies and in providing policies that enhance the furniture SME sector's performance. Lastly, the study serves as a baseline for learning institutions to explore other related research areas not addressed in this study. Adoption of the OA framework by the furniture manufacturing industry will result in lower recovery costs, shorter waiting periods, and reduced inefficiencies. This will further lead to the survival of the manufacturing industry in developing countries such as South Africa, where the context is not very different from that of Brazil. In conclusion, various enablers, government policies, regulatory frameworks, industry networks, and agile manufacturing practices are vital for fostering organisational agility in South African manufacturing SMEs. Based on the analysis, several important factors emerge that influence organisational agility and growth in the furniture manufacturing SME sector in BRICS countries.

5.6. Summary

Therefore, data were analysed from document reviews, interviews with furniture manufacturing SMEs and supporting institutions, academic literature, and national policies and strategies across various countries.

This led to the development of a theory-led best-practice framework to strengthen Organisational Agility in South African manufacturing SMEs. Industry insights from experts were collected through a Delphi study to validate the framework.

Understanding the factors that contribute to organisational agility, as well as the essential capabilities, practices, and response frameworks, is essential for businesses aiming to thrive in today's fast-paced environment.

Integrating these elements can improve organisations' agility, allowing them to recognise changes and respond effectively, ultimately fostering long-term success.

Further research and case studies could offer deeper insights into the practical applications of these frameworks and guide organisations on their quest for enhanced agility.

Chapter 6

DISCUSSION and FINDINGS

6.1 Introduction

The study compared insights within each objective across vital thematic areas to discuss SMEs' and supporting institutions' responses to organisational agility. Participants provided a comprehensive overview of their companies, which have evolved to meet market demands, and outlined key proposals for the OA framework in South Africa.

The data analysis revealed that enhancing organisational agility and resilience in South African manufacturing SMEs requires a comprehensive approach that aligns policies, supports financial models, establishes strategic partnerships, and manages risks. The discussion will draw connections between the empirical findings and the theoretical frameworks of the Resource-Based View Theory (RBT) and Agility Theory while reflecting on the interpretive paradigm adopted in this research.

The themes on which the final OA framework is centred were obtained through a rigorous conceptualisation process. This process involved assigning labels representing specific phenomena. Strauss and Corbin (1990), as cited in de Vos *et al.* (2005), explain that conceptualisation is achieved by continuously comparing data elements, ensuring that similar phenomena are grouped under the same label to prevent confusion from excessive categories. The chosen label must be logically connected to the data it represents while sufficiently distinct and engaging to capture the reader's attention (Strauss & Corbin, 1990, as cited in de Vos *et al.*, 2005; Alvesson & Sandberg, 2018).

The themes identified in all three data collection methods emphasise the importance of fostering a more integrated approach to sustainable growth in SMEs through supportive policies, flexible financing, and ongoing capacity-building.

By adopting the proposed best practices framework, stakeholders can help ensure South African manufacturing SMEs' long-term success and agility, positioning them to thrive in the competitive global market.

6.2 Interpretivist Paradigm and Implications

The interpretive paradigm, which guided this research, emphasises understanding the subjective experiences and meanings that participants attach to the enablers and capabilities influencing their organisational growth. By adopting an interpretive approach, this research has identified the enablers that SMEs consider critical to their agility, as well as the contextual and relational factors that influence these perceptions.

From an interpretive Perspective, participants' subjective experiences and insights highlight the contextual and socially constructed nature of agility. Flexibility, rapid decision-making, and innovation are not merely abstract concepts but are deeply embedded in the lived experiences of organisational members. This paradigm emphasises the importance of understanding how SMEs, Executives, and stakeholders interpret and act upon these practices to achieve agility.

Through the interpretive paradigm, the contrasting perspectives of participants across countries provide rich insights into the diverse ways in which policies, regulatory environments, and organisational structures shape SME behaviour and performance. This allows for a clearer understanding of how global and regional factors, such as reindustrialisation policies in South Africa or tax simplifications in Brazil, interact with the micro-level dynamics of organisational culture and internal structures to affect SME agility.

Theme 1: Organisational policies, Regulatory environment and Structure as enablers for SME agility and growth.

This discussion documents the critical factors influencing the agility, resilience, and growth of manufacturing SMEs.

Policies, regulatory frameworks, and organisational support mechanisms, such as those provided by furniture industry support organisations, play a critical role in enabling SMEs to

navigate crises and sustain their operations. By focusing on market access, financial support, and innovation, SMEs can build adaptive capacity and achieve long-term growth in an increasingly dynamic global market.

Developing a theory-led framework integrating these insights served as a foundation for future best practices in strengthening SME resilience post-crisis.

By analysing enablers and capabilities in manufacturing SMEs, such as regulatory frameworks, lean practices, dynamic capabilities, and a culture of continuous learning, it becomes evident that internal and external factors play a significant role in enhancing agility. The proposed theory-led framework, grounded in agile manufacturing and agility theory, offers a structured pathway to strengthen organisational agility in the manufacturing sector.

Theme 2: Enhancing OA for furniture manufacturing SMEs: Practices & Processes)

This aspect focuses on the essential processes and activities that enable SMEs to quickly adapt to changes in market conditions and customer demands (Maximova, 2021). This emphasis on enabling factors aligns with the resource-based view (RBT) theory, highlighting the importance of internal resources. It highlights the need for firms to have the right capabilities to implement agile practices effectively.

The study identified specific practices that are critical for agile organisations, such as Organisational culture, Flexible financial support, Organisational structure, Regulatory compliance and challenges, regional integration and sectoral linkages, Ecosystem enablement and networks, Policy support and targeted interventions. This section illustrates how agility theory operationalises agility by outlining how organisations can enhance responsiveness and innovation.

Theme 3: Sense-response mechanisms in furniture manufacturing SMEs: Catalysts for agility and adaptability

This element showcases the cohesive structure of an organisation's processes and actions for responding to external changes. This framework aligns with the RBT by highlighting that timely and effective responses depend on the firm's capacity to leverage its unique resources in accordance with market dynamics.

Key elements include mechanisms for external sensing and feedback integration, Operational flexibility and quick response mechanisms, Technology-driven sensing capabilities, Leadership and decision-making, and Stakeholder engagement in sense-response mechanisms.

Recommendations were based on the three (3) data collection methods: document reviews, semi-structured interviews, and expert reviews. This study is envisaged to further enhance knowledge of this area and to guide policymakers, SME-supporting institutions, entrepreneurs, advisors, and academics in considering an all-encompassing organisational agility framework that can be replicated in other countries with a similar operating environment for manufacturing SMEs.

For an enabling and empowering entrepreneurial ecosystem, there needs to be investors who will financially support startups, as well as conditional grant funders who will give SMEs a longer-term runway to take off, taking them through the initial phases (Kumar & Singh, 2023). Additionally, the government must implement laws and policies that encourage entrepreneurship by providing tax reliefs, incentives, and essential infrastructure, such as roads and international airports, to enable global investors to access these ecosystems (Haldane *et al.*, 2023). The Open-Door policy can be emulated and applied once member countries are ready to address the infrastructure challenges they currently face to attract and retain investors (Musiita *et al.*, 2023).

Recent studies emphasise the importance of venture capital in fostering innovation among startups in emerging markets (Sun *et al.*, 2024). Furthermore, government incentives are crucial in supporting SMEs by providing tax relief and financial assistance (World Bank, 2020). For instance, South Africa offers various tax incentives for small businesses to encourage growth and investment (SARS, 2024). The South African government has also

introduced initiatives, such as the Employment Tax Incentive, to support job creation in SMEs (SABC News, 2023). Moreover, creating a robust entrepreneurial ecosystem requires collaboration between the public and private sectors to enhance startups' access to finance and resources (Campos-Blazquez *et al.*, 2024).

Infrastructure development is vital to attracting foreign direct investment (FDI), which can significantly boost economic growth in BRICS nations (UNCTAD, 2023). Secondly, the study followed its theoretical framework that looks at three key features of OA: enablers and capabilities, organisational practices and processes, and existing sense-response frameworks of OA within these organisations.

6.3 Linking themes to literature

Literature shows that organisational agility within entrepreneurial ecosystem elements remains underexplored. The study confirms the assertions by Borat and Rooney (2017), who note that the high unemployment rate and the manufacturing sector's global role are currently critical to labour absorption. This study evaluates the South African manufacturing sector's performance and compares it with that of other BRICS member states. All manufacturing sub-sectors posted GDP growth, though it was marginal in some cases. Some manufacturing sub-sectors showed employment growth, while job losses in others were far more notable. The Chinese and Indian research in the SME sector is lagging. This helps address ways that manufacturing sector SMEs can remain competitive and thrive. Given that manufacturing is more complex, it is essential to quickly adapt to supply and demand, business conditions, customer changes, and product customisations.

The industry faces constant disruption, forcing manufacturers into a permanent state of adaptation. Therefore, savvy manufacturing companies achieve low-cost, efficient operations that produce high-quality goods. Meeting customer demands consistently is essential; hence, it is necessary to consider regional specificities when developing entrepreneurial ecosystems, as seen in Brazil and Russia.

Data obtained through document review revealed that Technological Advancement is a foundational enabler of Organisational Agility. Organisations leveraging cutting-edge technologies are equipped to respond rapidly to market demands, rationalise operations, and

enhance decision-making processes.

Cost Efficiency allows organisations to allocate resources strategically, enabling them to invest in agility-enhancing practices and technologies without compromising profitability.

Manufacturing flexibility empowers organisations to adapt their production processes to market fluctuations, maintaining customer satisfaction and operational efficiency. A robust entrepreneurial orientation fosters a culture of innovation, encouraging organisations to embrace risks and explore new market opportunities. Access to financial resources is critical for enabling organisations to implement agile practices, invest in technology, and effectively manage unforeseen changes. Employees with business requisite skills and access enhance an organisation's capacity to adapt to dynamic market conditions and capitalise on emerging opportunities.

A comprehensive approach integrating financial flexibility, strategic support, and risk management is required to enhance organisational agility in South African manufacturing SMEs. Developing a best practices framework should prioritise diversified financing models, post-investment support, financial literacy, and proactive risk management. Additionally, leveraging best practices from BRICS countries and aligning government policies will equip SMEs to remain agile, resilient, and competitive in a dynamic global market.

6.4 Linking Themes to Agility Theory and Resource-Based View Theory

This study's findings align closely with the Agility Theory and the Resource-Based View Theory.

Agility Theory emphasises the need for firms to be flexible, responsive, and proactive in a dynamic, competitive environment, reflected in the adaptive practices and capacity-building efforts reported in the data. RBT, on the other hand, suggests that a firm's ability to achieve competitive advantage is rooted in its internal resources, whether human, technological, or relational, as well as the strategic deployment of these resources. The practices identified in this study, such as flexible production systems, leadership development, and collaborative

networks, serve as critical resources that enhance agility and enable SMEs to maintain a competitive edge.

6.4.1 Contributions of the theories to Literature

The theories significantly contribute to the existing literature by demonstrating how South African furniture manufacturing SMEs can develop an industry-specific organisational agility framework. This research integrates Agility Theory with Resource-Based Theory (RBT) to address gaps in previous studies that have neglected the significance of internal capabilities and external responsiveness.

This study enriched the understanding of how SMEs can maintain agility despite facing resource constraints and competitive pressures by examining sector-specific agility tools (Wang *et al.*, 2016; Leong *et al.*, 2016). Furthermore, the framework contributes to the literature on organisational agility by incorporating best practices from BRICS countries. This comparative perspective emphasises key enablers and capabilities for agility, providing a broader context for understanding how various firms achieve agility under different regulatory and market conditions.

By integrating Agility Theory with Resource-Based Theory (RBT), the research provides a comprehensive understanding of how South African furniture manufacturing SMEs can cultivate agility. This study aims to guide policymakers, industry practitioners, and scholars in fostering an agile environment that can be replicated in similar contexts. The collaborative research approach will advance academic discourse and contribute to the practical implementation of agility frameworks in the manufacturing sector.

6.4.2 Application of the Theories in Developing the OA Framework

The study is underpinned by the Resource-Based View Theory and Agility Theory. The RBT assumes that the resources an organisation has are a source of its competitive advantage. The Agility theory, on the other hand, posits that resources alone are insufficient; organisations need to be agile to survive turbulence in the external environment.

From the first objective to the fourth, the theories have been applied, and this is how to identify the enablers and capabilities that would make an organisation agile. These are resources an organisation must have to enhance its agility.

Practices and processes are the soft or everyday activities that include organisational culture, training, and communication that drive the OA conversation internally. Sense-response frameworks enable an organisation to sense external turbulence and prepare for unforeseen challenges. This directly links to the Agility theory, which holds that resources alone are not a foolproof source of competitive advantage. A firm's ability to sense and respond to external turbulence sets it apart from its competitors. These capabilities cannot be limited to risk management plans but should focus on enhancing preparedness and response.

6.5 Delphi Outcomes/Discussion of Subthemes

6.5.1 Objective a) Organisational enablers and capabilities

The data analysis revealed that organisational policies, financial resources, regulatory compliance, and leadership play a critical role in SMEs' ability to remain agile, resilient, and poised for growth in a fast-changing, competitive global market.

Organisational Policies, Regulatory Frameworks, and Agility

Organisational policies and regulatory frameworks are significant enablers for SME growth, resilience, and agility. The importance of ecosystem enablement through financial flexibility and access, leadership development, and policy support aligns with the RBT theory, which asserts that resources and capabilities within an organisation drive its competitive advantage.

As revealed in the data, the roles of training and development, access to finance, financial incentives for innovation, and effective communication provide SMEs with the resources and capabilities needed to maintain flexibility in a volatile environment. Another key highlight is that participants emphasised the importance of flexible funding models, such as loan restructuring and convertible grants, which are vital for ensuring financial resilience and agility during economic downturns. The findings highlight that the creation of manufacturing networks directly contributes to SME competitiveness.

According to RBT, leveraging external resources and networks enables the firm to access complementary resources it may not possess internally, thereby boosting both agility and growth.

The Furniture Master Plan in South Africa and SEBRAE's International Business Department serve as examples of institutional frameworks that facilitate the development of international networks and access to new markets, which are crucial for long-term growth.

Furthermore, as participants noted, initiatives such as SEBRAE's support for internationalisation and regional collaborations through bodies such as SADC and AfCTA play a crucial role in enabling SMEs to expand their reach and develop competitive advantages. Participants in Russia highlighted supportive federal investment programs, such as subsidised lending rates and inspection moratoriums, as enablers of organisational agility. These frameworks allow SMEs to allocate resources more effectively, aligning with findings by Gupta *et al.* (2023), who argue that a supportive legal environment fosters business adaptability. These strategic linkages are consistent with the RBT's notion of creating an organisation's dynamic capabilities through external partnerships and networks.

6.5.1.1 Regulatory Environment and Resilience

With legal and regulatory compliance, Agility is heavily influenced by SMEs' need to operate within China's policy and regulatory frameworks. Reducing bureaucratic barriers and providing tax incentives could further enhance agility. Decision-Making and Feedback Mechanisms: The ability to make quick decisions, supported by real-time feedback and information sharing among industry stakeholders, is essential for fostering organisational agility.

As the participants detailed, the regulatory environment is a double-edged sword. It provides essential guidelines that help SMEs comply with legal and operational standards, thereby enhancing resilience in a competitive and often unpredictable environment. However, excessive compliance burdens and bureaucratic hurdles can hinder firms' agility. Regulatory compliance, while necessary, usually brings operational challenges, especially for SMEs that may not have the resources to meet complex regulatory requirements efficiently.

The data illustrate this tension: participants indicate that while compliance is essential for market access and institutional support, it also creates a bottleneck that may limit a firm's ability to respond quickly to market demands.

This phenomenon resonates with Agility Theory, which focuses on an organisation's ability to adapt and reconfigure its processes in response to changing market conditions. Participants expressed that regulatory burdens constrain the agility of SMEs, forcing them to focus on compliance rather than innovation of rapid decision-making. At the same time, recent regulatory reforms, such as those aimed at simplifying tax compliance in Brazil, aim to strike a balance between legislative compliance and operational flexibility.

A robust policy framework that blends financial flexibility, regulatory compliance, and post-investment support fosters agility within the South African manufacturing SME sector. While financial support mechanisms are strong, gaps in market access and ecosystem collaboration could further enhance agility. Integrating theory-led best practices such as market access facilitation, strategic partnerships, and sector-specific localisation support could develop a more comprehensive framework to strengthen SMEs' organisational agility (OA) and ensure their growth and resilience post-crisis.

6.5.1.2 Organisational Culture and Growth

In the first round of reviews, organisational culture was identified as a critical enabler of agility and resilience. A culture that fosters innovation, adaptability, and continuous learning is essential for SMEs to thrive in rapidly changing environments. As the data shows, a learning organisation that encourages employees to engage with innovative solutions and share knowledge creates an environment conducive to agility.

This aligns with the RBT and agility theory, which stresses the importance of internal resources, such as knowledge, creativity, and employee engagement, in sustaining competitive advantage.

In particular, the flat organisational structures reported by many participants facilitate quicker decision-making and a more responsive approach to market changes. The decentralised decision-making process, which is standard in SMEs, enables them to be more agile than larger, hierarchical organisations.

According to Agility Theory, this structural flexibility is a key determinant of an SME's ability to pivot rapidly in response to external changes and internal disruptions. The emphasis on quick communication and fast decision-making within flat structures directly manifests organisational agility.

6.5.1.3 Training and development

The data also reveals that organisational policies related to training and development are essential in promoting a culture of continuous improvement. This investment in human capital, in turn, strengthens the organisation's ability to adapt and innovate, further supporting its resilience and long-term competitiveness. These findings highlight the relevance of the RBT and agility theory in understanding the enablers of growth in SMEs. They demonstrate that integrating policies, organisational culture, and structure creates a synergistic effect that strengthens SMEs' overall performance.

Empowering employees to contribute ideas, as seen in the South African and Brazilian contexts, also strengthens the organisation's capacity to respond to external threats or opportunities. In line with RBT, training and development represent a valuable, inimitable resource that SMEs can leverage to enhance their resilience and innovation capacity, further promoting growth.

6.5.1.4 Linking Policies, Regulatory Environment, and Organisational Structure to Agility

The relationship among the policies, regulatory frameworks, and organisational structures outlined in the findings indicates how external and internal factors converge to influence an SME's agility.

The data shows that flexible financial support, such as innovative funding models, combined with structural elements like a flat organisation, facilitates quick decision-making and responsiveness, core attributes of organisational agility.

Moreover, the importance of policy support, such as financial incentives for innovation and reindustrialisation, is a strategic enabler that allows SMEs to align their operations with national and regional imperatives, fostering resilience and growth. These policy frameworks

provide SMEs with the necessary financial resources and encourage long-term investment in innovation, thus enhancing organisational capabilities as described by RBT.

6.5.1.5 Effective communication

In the context of OA in the manufacturing sector, effective communication is critical. Agility in manufacturing refers to an organisation's ability to quickly adapt to market changes, respond to customer needs, and innovate effectively. Effective and clear communication is a fundamental enabler of this agility, as it ensures that information flows seamlessly across all levels of the organisation, Shonubi & Akintaro, (2016). As noted by Musheke and Phiri (2021), communication is key to fostering collaboration and aligning the entire team toward common goals, which directly supports an organisation's ability to pivot quickly in response to shifting demands.

When communication is clear, internal stakeholders can collaborate more effectively across departments, enabling faster decision-making and the seamless execution of changes. For example, in a manufacturing environment, quick adjustments to production processes or schedules are often necessary to meet market demands and survive supply chain disruptions. If communication is lacking, these changes can be delayed, misunderstood, or executed poorly, slowing or even derailing efforts to remain agile. Poor communication can also result in confusion, inefficiencies, and costly errors in a fast-paced industry like manufacturing.

Additionally, manufacturing organisations that promote open and transparent communication are better positioned to mitigate internal conflicts, such as disagreements over production goals or resource allocation, which can undermine agility.

Research increasingly shows that managerial communication plays a critical role in achieving organisational objectives, particularly during transitions. Zorlu and Korzmaz (2021) point out, a manager's communication skills directly impact their ability to achieve organisational objectives, particularly in times of change. Manufacturing executives who communicate effectively can ensure their teams understand not only the "what" and "how" of decisions but also the "why," creating a shared vision that drives agility.

Concurrently, when communication fails, it can hinder managers' ability to make informed decisions, leading to poor planning and delays in adapting to changes.

This is especially problematic in manufacturing, where production schedules and supply chains are often tightly intertwined.

The manufacturing sector requires managers to constantly assess and respond to external pressures and internal operational challenges.

In summary, for manufacturing organisations to remain agile, communication must be treated as a strategic priority. Managers need to foster open, clear, and continuous communication with their teams, ensuring everyone is aligned and can quickly adapt to changes. Only then can an organisation truly harness the benefits of agility in today's fast-evolving market.

6.5.2 Objective b) Practices and Processes

This section explores the critical role of organisational practices and processes in enhancing agility within furniture manufacturing SMEs, with particular emphasis on how they respond to dynamic market conditions. Drawing on data from SMEs across the BRICS countries, we examine key practices and processes that enable these firms to survive and thrive in a competitive marketplace. When properly implemented, these practices accelerate organisational agility and ensure that SMEs remain competitive in an increasingly globalised industry. The findings from this study are discussed in light of the two theoretical perspectives, the Resource-Based View Theory and Agility Theory, while incorporating an Interpretivist Paradigm that emphasises understanding the subjective experiences of organisational members.

6.5.2.1 Adaptive Organisational Practices: A Foundation for Agility

The data reveal that adaptive organisational practices strengthen agility within furniture manufacturing SMEs. Key practices identified include cross-functional teams, flexible organisational structures, and flexible operational and production systems. These practices enable SMEs to respond rapidly to external changes, such as shifts in consumer demand or market disruptions. Such practices underpin the centrality of resource flexibility, a concept closely aligned with the resource-based view theory (RBT). According to RBT, firms that leverage their internal resources, such as human capital and operational capabilities, are better positioned to create competitive advantages (Barney, 1991).

In this context, it is evident that SMEs that build adaptable internal structures, such as cross-functional teams and flexible production systems, can optimise their resources to respond rapidly to market dynamics.

In addition, the ability to reconfigure organisational structures and respond to changing customer demands is essential to agility. During the COVID-19 pandemic, South Africa shifted from standard office furniture to home office furniture, an indication of its flexibility in meeting current demands. This further demonstrates organisational adaptability and strategic alignment with changing external conditions, a key component of agility theory, which stresses the importance of quick response and innovation in times of uncertainty (Teece, 2007).

6.5.2.2 Skills development, training and leadership development

Other essential elements in strengthening agility are skills development and training. As SMEs continue to face a plethora of market challenges, training and leadership development are pivotal for strengthening employees' and leaders' flexibility and adaptability. Data revealed a significant leadership skills gap that negatively impacts an SME's agility. India highlights the importance of leadership succession planning and coaching for driving organisational agility. Sharma and Patil (2024) echo this narrative.

One South African participant discussed the value added by leadership capabilities in fostering an agile organisational culture.

Capacity building includes information sharing, collaboration, and skills interventions, all of which are essential for improving decision-making speed and responsiveness. China emphasised the importance of sharing best practices and insights. The commitment to continuous learning and sharing knowledge is a critical resource that enables SMEs to innovate and adapt. According to RBT, organisations with rich social capital can more easily access valuable information and knowledge, which enhances their capacity to innovate and remain competitive.

6.5.2.3 Integration of Technology and Innovation to enhance Competitive Advantage

The integration of technology and innovation is another key enabler of agility. The study indicates that SMEs that can rapidly incorporate new technologies and adopt innovative practices can better maintain operational flexibility.

A Chinese participant emphasised this, describing how their organisation's ability to implement technological changes assists its agility. Additionally, their organisational structure allows them to implement changes swiftly in response to market trends.

While adopting advanced technologies offers opportunities, it also poses challenges, particularly the specialised knowledge required for successful implementation. A Russian SME participant noted that they must develop non-standard solutions that cannot be described in classical terms, underscoring the innovative mindset required to overcome the barriers to technology adoption. This resonates with Agility Theory, which posits that dynamic capabilities are essential for firms to sustain competitive advantage in changing environments (Teece, 2007). The author goes further to define these capabilities as the ability to develop, integrate, and reconfigure internal and external competencies.

Moreover, integrating data-driven insights into decision-making is critical for understanding market trends and customer preferences. This ability to leverage data for strategic advantage allows SMEs to anticipate changes, react swiftly, and innovate effectively.

As a South African participant stated, customer service and market research are essential for SMEs to adapt quickly to changes, illustrating the importance of data as a resource for driving agility.

6.5.2.4 Collaborative Ecosystem and Networking to Expand Opportunities for Agility

Finally, collaborative ecosystems and networking are key factors in enhancing agility. SMEs benefit significantly from establishing partnerships with other firms, supporting institutions, and regional networks. Form and structure underpin functioning organisations.

Without a supportive ecosystem, efforts to drive agility and sustainable growth cannot yield

good long-term results. This is mainly due to duplication of efforts and poor accountability for resources allocated. Creating a single window of coordination through an entrepreneurial ecosystem would create stability and a clear path to measure impact.

Respondents emphasised the importance of a collaborative ecosystem that involves various stakeholders, particularly government support for job retention and innovation funding. The involvement of local governments in nurturing SME ecosystems is crucial for facilitating flexibility and responsiveness (Sibiya *et al.*, 2023).

Stakeholders, including government and industry bodies, have been seen as essential in supporting SMEs through various stages of development, particularly in enhancing flexibility and innovation (Sibiya, *et al.*, 2023). SMEs in South Africa described a flat organisational structure that fosters quick decision-making and adaptability to market changes. It specifically mentioned the challenge posed by imported furniture and the need to modernise its product designs. This structural advantage aligns with findings that emphasise the importance of organisational structure in facilitating agility (Khan *et al.*, 2023).

These collaborations provide access to new resources, technologies, and expertise, thereby enhancing innovation and adaptability. One South African participant noted a need to strengthen regional partnerships, particularly from SADC countries. Furthermore, collaboration with industrial associations and academic institutions helps SMEs stay ahead of market trends and technological advancements.

As noted by Brazil, Collaborations with institutions of higher learning could lead to innovative solutions and help SMEs advance in terms of design and technology. These collaborative efforts enhance an organisation's ability to synchronise resources across different stakeholders, reinforcing the network-theory component of agility.

6.5.2.5 Objective c) Sense-response framework of OA

This capability helps SMEs sense and respond to external environmental turbulence. Access to market intelligence is a critical element in mastering agility and response planning.

Key to the findings, as narrated by China, is the importance of maintaining close connections with other organisations in the value chain, putting competition aside and focusing on information sharing. Information sharing helps SMEs speed up decision-making and avoid

reactionary practices. South Africa indicated the need for access to market intelligence strongly.

Key to this is equitable access to information for SMEs operating in both rural and urban settings.

This came up a few times during interviews: there are information asymmetries that are further exacerbated by location challenges.

This therefore means that information packaging must take into consideration the technology accessible in the area, network, level of knowledge and understanding of the location dynamics of a particular region. Russia echoed these sentiments from China in that schemes must be devised that will facilitate cross-learning and information sharing. On improving decision making, South Africa mentioned the importance of obtaining client input through feedback from stakeholders, including the recipients and government and any other relevant role players. This points to a need for a functioning ecosystem to support furniture manufacturing SMEs. This feedback assists SMEs in planning, ensuring compliance and delivering according to the market demands within a specific period.

6.5.2.5.1 Operational flexibility and quick response mechanisms

The attributes above were strongly raised by China, as sense-response mechanisms. Their view goes further to assert that organisational flexibility and quick-response mechanisms enable organisations to utilise resources efficiently and ensure productivity during turbulent times. The shift from office-based employees to hybrid work methods has also been noted in South Africa, which has increased demand for home offices for remote work. This helps the furniture manufacturing industry remain afloat. The remote working model adopted by countries globally means things and demand can shift permanently at any time, therefore necessitating agile organisations that can shift human capital, systems in time to remain relevant. The remote working model is dominant in the ICT sector, and the advancement of technology points to technology-infused manufacturing, with the use of CAD and CAM. India has a working mechanism of a multi-skilled workforce, enabling each to shift within the organisation. All BRICS countries share the same sentiments on structural agility and its importance in enabling rapid responsiveness.

The lean nature of the executive level makes decision-making faster and facilitates quicker information flow.

6.5.2.5.2 Leadership and decision-making

One key element for sensing and responding to external turbulence for manufacturing SMEs is leadership capacity to make decisions, having given due consideration to all necessary components and the implications of those decisions. The ability to anticipate environmental changes through monitoring economic indicators was emphasised.

This proactive approach allows for timely strategy adjustments (Molekoa, 2009).

China came strongly on quick decision-making abilities in leadership. This, therefore, means that indecisiveness, both from the manufacturing firm or a supporting organisation, can have negative consequences for the organisation and industry. Brazil raised that effective decision-making is heavily influenced by the quality of leadership in the organisation. This view was shared by South Africa, which stated that before the organisational agility phenomenon can be dissected, the issues of leadership quality, capability, and emotional intelligence should be addressed. This therefore means that organisations that are intentional about maintaining or strengthening their agility need to focus on the leadership within and its quality. This applies to both the MSEs and supporting institutions. The timeliness of these decisions becomes of paramount importance, that is, taking a decision and concluding on a matter too early or too late.

Brazil prides itself on experienced leadership, particularly in navigating market challenges, enabling informed decision-making. The importance of promoting a culture that embraces change and encourages innovation was highlighted as essential for operational adaptation, as confirmed by Davis, 2023; Evangelist-Roach, 2020). Cultivating and reinforcing a conducive culture, as emphasised by South Africa, comes as a strong fuel and encouragement to the employees. Risk appetite is another sense-response mechanism raised by South Africa, along with the ability to apply basic business principles.

6.5.2.5.3 Technology-driven sensing capabilities

China is leading in information and technological advancements that aid agility. They use technology for demand and supply matching and product promotion. While this is a great mechanism, it requires an operating environment that is fast in terms of technology adoption, well-skilled workforce and curious to learn.

India follows suit in technology advancement through modern machinery. These are devices that help in matching demand with supply. Russia highlighted the use of business intelligence tools and data analytics across its operations, marketing, and product development decision-making processes. This underscores the importance of information sharing between SMEs and supporting institutions.

6.5.2.5.4 Stakeholder engagement in sense-response mechanisms

Countries within the BRICS block identify with collaborative ecosystems, mobilisation of government and private actors, and membership of industry chambers, fostering good relations with all the stakeholders in the ecosystem. The industry representative organisation advocates for fair and equitable resource allocation to drive sustainable growth and development of the organisations at the nucleus of their core business. They seek to remove barriers to SMEs' attainment of long-term goals. In addition, collaborations are being formed with various parties.

In South Africa, external stakeholders play a significant role in enhancing agility through strong ties with suppliers and industry associations.

The South African SME noted that government programs, such as the Cluster Development Program, have positively impacted its operations, facilitating better market access and resource sharing. The Brazilian SMEs echoed this sentiment, emphasising collaboration with suppliers and leveraging industry associations for training and networking. Integrating external support networks is crucial for SMEs to effectively adapt to rapid market changes (Garrido-Moreno *et al.*, 2024).

These collaborations are within and outside each country's borders to gain market access, facilitate cultural exchange, and enable resource sharing.

The findings highlight that effective stakeholder involvement, evidence-based research, and technology integration are central to fostering organisational agility and resilience in manufacturing SMEs. In addition, the analysis reveals that aligning regulatory frameworks, providing practical incubation support, and continuously developing market-responsive strategies are critical enablers of manufacturing SME agility.

Role of Stakeholders: Respondents emphasised the importance of a collaborative ecosystem involving various stakeholders, including government support for job retention and innovation funding. The involvement of local governments in nurturing SME ecosystems is crucial for facilitating flexibility and responsiveness (Sibiya *et al.*, 2023). **Internal Adaptability:** Minimising costs and maximising resource use were highlighted as internal capabilities that foster operational adaptation. Such practices enable SMEs to navigate fluctuations effectively, promoting sustainability in an ever-changing market environment (Kahveci, 2025).

6.5.3 Objective d) Best practices

Several best practices were proposed by both SMEs and supporting institutions. This is important for the quality of the framework that should be informed by the views of the parties involved in the sector. Document review alone was insufficient to identify these best practices, which underpin the final OA framework for furniture manufacturing SMEs in South Africa. Participants suggested several best practices to enhance agility in South Africa's SMEs, including targeted training programs, support for labour productivity, and initiatives to develop local industries. These strategies align with recent literature advocating systemic support mechanisms to promote SME growth (Govuzela and Mafini, 2019).

6.5.3.1 Empowering SME through skills development and leadership

The emphasis on training and educational programs equips SMEs with the knowledge and tools to remain agile amid market changes. Focusing on continuous skills development and strategic partnerships, alongside a robust research framework, will be critical in accelerating agility within the sector.

These practices align with existing frameworks for organisational agility (Arno, 2025) and offer actionable insights for strengthening agility in manufacturing SMEs. Participants in Russia identified the need for training programs and initiatives to enhance labour productivity, emphasising that human capital is a cornerstone of agility (Anderson & Smith, 2023).

Establishing feedback and sense-response mechanisms

These factors are significant in facilitating resilience and enabling growth, especially post-crisis recovery. By integrating sense-response strategies and adhering to industry best practices, SMEs can improve their capacity to adapt, survive, and thrive in a rapidly evolving market environment. Developing a theory-led framework grounded in institutional theory and dynamic capabilities offers a comprehensive approach to strengthening organisational agility in the manufacturing sector.

6.5.3.2 Simplifying financial access and incentive mechanisms

By focusing on financial agility, innovation, risk management, and dynamic support systems, South African manufacturing SMEs can cultivate a strong foundation for long-term sustainability and growth in a rapidly evolving global economy.

6.5.3.3 Summary of insights from furniture manufacturing SMEs

The respondent SME from Brazil, unlike other countries, mentioned operational hindrances stemming from the COVID-19 pandemic, which necessitated a shift from household furniture to home office solutions. The organisation also highlighted the importance of strategic location and outdoor marketing in maintaining agility. This adaptability is critical as SMEs face rapid market fluctuations (Poolton, Ismail, Reid *et al.*, 2006).

This reflects the need for internal adaptability. Kahveci, (2025) reveals that minimising costs and maximising resource utilisation were identified as internal capabilities that foster operational adaptation. These practices enable SMEs to navigate fluctuations effectively, promoting sustainability in an ever-changing market environment.

Insights from Russian SMEs offer valuable lessons for improving the agility of manufacturing firms in South Africa.

By adopting best practices that emphasise structural adaptability, supportive regulatory frameworks, and proactive sensing capabilities, South African SMEs can enhance their resilience and responsiveness. This analysis underscores the need for a tailored framework that leverages cross-learning opportunities across BRICS countries to facilitate a more competitive manufacturing sector.

Both Brazil and South Africa SMEs identified similar best practices for enhancing agility. Continuous training and skill development are necessary to keep up with industry standards, invest in advanced technologies to improve production flexibility, and collaborate with other organisations to share resources and knowledge. This view is echoed by Nguyen *et al.* (2024). This parallel in approaches highlights a shared recognition of the critical role that innovation, training, and collaboration play in fostering organisational agility across diverse contexts.

South African and Brazilian SMEs demonstrate a nuanced understanding of the factors influencing their organisational agility. Despite regulatory constraints and challenges from market volatility, their strategies demonstrate unique adaptations to the situation.

This data analysis indicates that promoting agility in SMEs relies on internal capabilities, structural flexibility, supportive external environments, and collaborative networks.

6.5.4 Summary of SME Supporting Institutions' Perspective

Despite the critical role of external resources in supporting SMEs, previous studies have identified factors, but adaptation and the navigation of these challenges remain problematic. Only a few studies focused on clarifying the impact of various factors on organisational agility in the manufacturing SME sector.

In this vein, there is a need for studies that approach SMEs' performance from internal and external perspectives of the conditions necessary for sustainable growth and performance. When SMEs cannot independently innovate, support systems in entrepreneurial ecosystems must be in place to assist with research and development, market access, and technological advancement. The interview with one respondent revealed several challenges and opportunities for supporting manufacturing SMEs in South Africa.

Government policies must be adaptive, forward-thinking, and holistic, offering long-term support mechanisms beyond crisis management.

These policies should empower SMEs to navigate technological disruptions and regulatory pressures while fostering innovation and sustainable growth.

The interview findings align with existing literature on policy integration, stakeholder engagement, and agility in emerging markets. A comprehensive, integrated policy framework that combines infrastructure development, technology infusion, skills training, and market access can enhance SMEs' resilience and agility.

By adopting a more collaborative approach to policymaking and ensuring that policy frameworks are flexible and proactive, South Africa can create an environment that supports sustainable SME growth and competitiveness in global markets.

The interview with the participant highlights several key challenges and opportunities to enhance the resilience and agility of manufacturing SMEs in South Africa. Key themes such as sector linkages, skills training, business development, and regulatory frameworks are crucial for fostering competitiveness and long-term growth.

The importance of an ecosystem-based approach to SME support, involving a coordinated collaboration between various stakeholders, resonates strongly with the existing academic literature on SME policy and competitiveness. By aligning government policy with best practices, mainly focusing on simplifying regulations, fostering sectoral collaborations, and providing continuous business development support, South Africa can significantly enhance the agility and resilience of its manufacturing SMEs. The findings reinforce the importance of collaborative policymaking, proactive foresight planning, and ecosystem integration for sustainable growth in the manufacturing sector.

In another interview, the respondent offered a comprehensive perspective on how government policies, support mechanisms, and organisational strategies can enhance the agility and growth of manufacturing SMEs in South Africa. Key themes such as government frameworks, capacity building, product diversification, organisational alignment, and market access align with scholarly literature on SME development and competitiveness.

By fostering an ecosystem that supports internal and external agility, SMEs are better equipped to respond to market shifts and grow sustainably.

The insights from one DFI's approach align with best practices in policy development, financial support, and capacity-building for SMEs, contributing to a framework for strengthening organisational agility in the South African manufacturing sector.

The interview with another SME-supporting institution (DFI) revealed that, while their strategies for supporting manufacturing SMEs are comprehensive, there are areas for improvement, particularly in proactive support mechanisms, post-investment monitoring, and the adoption of new technologies.

Integrating these best practices into a theory-led framework will help strengthen organisational agility, resilience, and long-term growth prospects for SMEs in the Eastern Cape province. By aligning with global best practices and addressing gaps in the current support systems, the participating organisation and similar organisations can play a vital role in enhancing the sustainability of manufacturing SMEs in the region.

Through thematic analysis, it became evident that the policy environment, organisational practices, and sense-response strategies significantly influence the agility and growth of manufacturing SMEs in South Africa.

However, challenges remain in policy implementation, specifically regarding the sustainability of business models and the competitiveness of local industries. A holistic, adaptive approach that combines financial and non-financial support with market-appropriate policies is crucial for accelerating organisational agility in the manufacturing sector.

Objective 4: Develop a theory-led best practices framework to strengthen OA in the manufacturing sector

6.6 ORGANISATIONAL AGILITY FRAMEWORK VALIDATION

After establishing and analysing data through document reviews, interviews, and expert reviews, this section presents an organisational agility framework for manufacturing SMEs in South Africa. Specifically, the furniture manufacturing sector.

This framework incorporates enablers and capabilities, practices and processes, and sense-response frameworks of organisational agility.

Sarkis and Talluri (2002), cited in Maware (2019), argue that a practical framework should encompass an organisational strategic plan, an assessment of the current and future states, the selection of alternatives, an action plan, and mechanisms for evaluation and feedback.

They also emphasise that the framework must be capable of quantitatively and qualitatively evaluating key factors, including tangible and intangible elements. Recent studies have echoed this perspective, highlighting the importance of comprehensive evaluation methods in strategic planning (Dieste, Sauer & Orzes, 2022; Fuertes, Alfaro, Vargas *et al.*, 2020).

These evaluations play a crucial role in guiding organisations through complex decision-making processes. The furniture manufacturing industry framework was developed after identifying enablers, capabilities, practices, processes, and sense-response frameworks. A three-phase framework was developed: document review, interviews, expert review *via* the Delphi method, monitoring, and rewards. The implementation framework was developed using CIMO Logic.

DELPHI ROUND TWO REVIEW

Table 15: Final Organisational Agility Framework Elements

5-Strongly Agree 4 - Agree 3 - Neutral 2 - Disagree 1-Strongly Disagree	Remark or Suggestion	Expert*									Ranked Score**
	Ranked score (Total answers / no of experts)	Expert-A	Expert-B	Expert-C	Expert-D	Expert-E	Expert-F	Expert-G	Expert-H	Expert-I	
<i>Objective a): Enablers and capabilities of Organisational Agility</i>											
Ecosystem enablement & networks	Establishing networks	5	5	5	4	5	3	3	4	3	4.1
	Flexibility in funding models	5	5	5	5	4	2	3	5	4	4.2
Policy support and targeted interventions	Financial incentives for innovation	5	5	5	4	5	2	3	4	4	4.1
Regulatory compliance and challenges	Regulatory streamlining and credit access	5	5	5	5	4	2	3	4	4	4.1
Regional integration and sectoral linkages	Regional partnerships and market linkages	4	5	5	5	4	1	3	4	4	3.9
Organisational culture	Training and development	5	5	4	5	5	4	3	5	4	4.4
	Effective communication	5	5	5	5	5	4	3	5	4	4.6
<i>Objective b). Organisational Practices & processes of OA</i>											
Adaptive organizational practices	Flexible production systems	5	5	5	4	3	4	3	5	4	4.2
	Workforce flexibility	5	5	5	4	3	2	3	3	3	3.7
Capacity building and skills development	Leadership development	5	5	5	4	5	3	3	4	4	4.2
	Skills development and training	5	5	5	5	5	3	3	4	3	4.2
Collaborative ecosystem and networking	Collaboration with industrial associations	3	5	5	4	5	3	3	5	3	4.0
<i>Objective c). Sense-response frameworks of OA</i>											
Mechanisms for external sensing and feedback integration	Customer feedback	5	5	5	5	4	2	3	5	3	4.0
Operational flexibility and quick response mechanisms	Workforce flexibility	5	5	5	4	2	3	3	4	4	3.9
	Flexible production systems	5	5	5	4	2	3	3	5	4	4.0
Leadership and decision-making	Experienced leadership	5	5	5	5	5	2	3	5	4	4.3
	Leadership and guidance	5	5	5	5	5	2	3	4	4	4.2
Technology-driven sensing capabilities	Agility in technology and processes	5	5	5	5	4	2	3	5	4	4.2
	Market dynamics and technological advancement	5	5	4	5	3	2	3	5	4	4.0
Stakeholder engagement in sense-response mechanisms	Stakeholder feedback	5	5	5	5	3	2	3	5	4	4.1
	Stakeholder relationship management	5	5	5	4	5	2	3	5	4	4.2

	Regional partnerships and market linkages opportunities	5	5	5	4	4	2	3	5	4	4.1
Objective d). Best Practices across BRICS countries											
Building a collaborative ecosystem for agility	Regional partnerships	4	5	5	5	4	2	3	5	4	4.1
Empowering SMEs through skills development and leadership	Training and development	5	5	5	4	4	2	3	4	4	4.0
Integration of technology and innovation	Data-driven decision-making	5	5	5	5	5	2	3	5	4	4.3
Establishing feedback and sense-response mechanisms	Access to market intelligence and industry trends	5	5	5	5	5	2	3	4	3	4.1

Best Practice-based OA Framework for furniture manufacturing SMEs in South Africa



In addition to reviewing existing literature through document review, interviews and Delphi expert reviews, the researcher made a notable contribution to the study. This includes broadening the knowledge existing on OA, developing an industry-specific OA framework as a baseline on which other industries can establish their frameworks. The researcher shifted the focus from dynamic capability theory, which is widely used to frame the study, to Agility Theory. Secondly, advancing studies by Govuzela and Mafini (2019) and Zitkiene and Deksnys (2018) on the OA phenomenon. This is where the gap was identified: existing studies generalised about OA and provided no sector-specific guidance. The researcher further developed an implementation framework using CIMO logic.

Using three data collection methods reduced the risk of data gaps, as interviews were conducted with furniture manufacturing SMEs, supporting institutions, and experts with a wider view of the sector. The CIMO Logic implementation framework is built on the findings of the study, cutting across all three data collection tools. This is a clear guide for organisations wanting to advance their OA mechanisms. The implementation framework considered all four objectives of the study to enable manufacturing SME firms and their supporting institutions to pull elements they need to strengthen within their operating system.

CONCLUSIONS AND CONTRIBUTIONS

7.1 Introduction

The study sought to determine the enablers and capabilities, practices, processes, and sense-and-response frameworks of organisational agility. The study ultimately developed an organisational agility framework for furniture manufacturing SMEs in South Africa, drawing on best practices from BRICS countries. The study proceeded as follows: Chapter 1 provided the background of the study, and Chapter 2 presented an overview of organisational agility conceptual and theoretical frameworks. Chapter 3 provided a review of existing literature. Chapter 4 presented the research methodology applied in the study, Chapter 5 discussed the Delphi method; and Chapter 6 presented Phase 1 results, based on a document review. Chapter 7 presents the developed framework and discusses the results of Phase 2 of this study. Having achieved the study's objectives in the preceding chapters, the foregoing chapter concludes the research by presenting the study's limitations, contributions, conclusions, recommendations, and areas for future research.

SMEs are critical to economic growth, job creation, and innovation across the BRICS countries. They account for approximately 90% of businesses and contribute significantly to employment, particularly in developing economies. However, the effectiveness of SMEs varies widely across countries due to differing regulatory frameworks, access to finance, technological advancements, and support systems.

Objective 1: Determine enablers and capabilities, including how policies, regulatory, and legislative frameworks in the manufacturing industry influence organisational agility, resilience, and growth.

To develop a comprehensive conclusion based on the provided content regarding the role of SMEs in the manufacturing sectors of BRICS countries, several key themes emerged, highlighting both the opportunities and challenges faced by these enterprises.

Supporting Frameworks: An enabling policy environment is essential for SME success.

Countries like China and India have implemented robust frameworks that promote entrepreneurial ecosystems through supportive legislation and financial incentives. For example, China's open-door policy has attracted substantial foreign investment, while India's initiatives, such as "Make in India," aim to enhance ease of doing business for SMEs. In contrast, South Africa and Russia face significant regulatory hurdles that hinder SME growth despite efforts to improve their environments.

Innovation and Technology: Technological advancement is a critical factor in SME competitiveness. China leads in manufacturing innovation through significant investments in research and development, particularly in high-tech sectors such as electric vehicles and renewable energy. India is also making strides in technology adoption within its SME sector, especially in software and pharmaceuticals. However, Russia's reliance on traditional manufacturing methods limits its technological progress. The need for SMEs to embrace innovation is paramount for sustaining growth and responding to global market demands.

Access to Finance: Access to finance remains a formidable challenge for SMEs across BRICS countries. Many small businesses struggle to secure startup capital due to stringent lending criteria from financial institutions that favour larger enterprises with established credit histories. This financing gap is especially pronounced in South Africa, where SMEs cite a lack of investment as a significant barrier to growth. Innovative financing solutions are necessary to bridge this gap and support the expansion of these critical economic players.

Markets: The ease of market entry varies significantly among BRICS countries. While China provides incentives for manufacturing SMEs, Brazil has tried simplifying regulations. Conversely, South Africa grapples with high compliance costs that stifle the potential of SMEs. With China and India having implemented supportive measures to ease business operations for small enterprises, countries like South Africa and Russia still face bureaucratic hurdles that impede growth.

Streamlining regulations and providing targeted support can help improve SMEs' market accessibility. Addressing these barriers is crucial for fostering a more favourable business climate and encouraging entrepreneurship. The regulatory environments across BRICS countries present varying degrees of challenge for SMEs seeking market entry.

In summary, while SMEs are pivotal to the economic landscape of BRICS nations, their success depends on a multifaceted approach that includes supportive policies, access to finance, technological advancement, and reduced market-entry barriers. It is noteworthy that, due to technological advancements that vary across the BRICS bloc, geopolitical tensions hindering supply chains, bureaucratic hurdles, skill levels, and funding in each country, certain BRICS practices might be transferable to South Africa and to some other countries. Most would be more transferable to South Africa because, like Brazil, it has one of the best policies in the world, and there are more similarities in their policy and economic environments. Each country must tailor its strategies to address specific challenges while leveraging best practices from other BRICS countries within the BRICS framework. By fostering an environment conducive to SME growth through comprehensive support systems and innovative financing options, these countries can unlock the full potential of their SMEs, driving sustainable economic development and job creation across diverse sectors.

All the characteristics of agility were analysed for their presence and effectiveness within these organisations. The main ideas behind agility offer valuable insights for manufacturing SMEs seeking to improve competitiveness and flexibility. By prioritising responsiveness, adaptability, and collaboration while harnessing digital technologies, these organisations can navigate today's market challenges and achieve long-term growth.

Objective 2: Investigate how practices and processes in manufacturing SMEs accelerate and influence agility

The manufacturing sector is navigating a complex landscape of challenges and opportunities. Geopolitical uncertainties, supply chain disruptions, and evolving consumer preferences have significantly impacted operations, particularly during the COVID-19 pandemic, resulting in a notable decline in demand for products such as furniture.

However, positive trends such as rising demand from markets worldwide, technological advancements, and increased investments in automation and digitalisation foster an optimistic outlook for the industry.

Environmental Sustainability Practices: Sustainability has emerged as a critical focus for manufacturers, driven by consumer preferences for eco-friendly products and increasing regulatory scrutiny.

Organisations that prioritise environmental practices are likely to enhance their competitive edge. Within the BRICS nations, sustainability efforts vary significantly. For instance, China is making strides in addressing pollution while promoting sustainable manufacturing practices, whereas India is also adopting environmentally friendly approaches in its small businesses. In contrast, Russia faces challenges in implementing sustainable practices effectively.

Integration Practices and Challenges: Integrating SMEs into the broader manufacturing ecosystem remains a challenge. Many SMEs operate in fragmented environments with limited coordination among support institutions, leading to inefficiencies and duplication of efforts. The reliance on larger companies within the ecosystem can leave SMEs vulnerable to market failures and policy inconsistencies. Addressing these issues requires a more cohesive approach to support and development that fosters collaboration and resource sharing.

Technological Advancements: Adopting advanced technologies such as AI, robotics, and the Internet of Things (IoT) is essential to improving efficiency and productivity in manufacturing. Countries like China are at the forefront of these innovations, while India is increasingly integrating technology into its manufacturing processes. However, SMEs in countries like Russia may struggle to keep pace due to reliance on traditional production methods. The successful implementation of these technologies can significantly enhance operational resilience and competitiveness.

Resource mobilisation: Access to finance remains a significant barrier for SMEs across BRICS nations. Many small businesses face difficulties securing funding due to stringent lending criteria favouring larger enterprises. This financing gap hinders the sector's growth potential and innovation. Addressing this issue through innovative financing solutions and supportive policies is crucial for enabling SMEs to thrive. The manufacturing sector faces significant challenges and offers promising opportunities.

Companies that are strategically investing in sustainability practices, technological advancements, and effective ecosystem integration will be better positioned for long-term success. Addressing barriers such as access to finance and regulatory complexities is essential for fostering a more robust environment for SMEs.

By embracing agility and innovation while navigating these challenges, manufacturers can enhance their resilience and contribute meaningfully to economic growth within the BRICS framework.

The study established that organisational agility could be developed if specific enablers and capabilities, practices and processes, and sense-response frameworks were in place. The findings cite the following enablers: finance, technology, human capital, support, policies, and practical support mechanisms.

Secondly, practices and processes must be directed toward propelling manufacturing SMEs towards agility. The ability of SMEs to service external turbulence also depends on their ability to sense and respond to external environment turbulence. The operating environment for SMEs is highly competitive, so agility is essential. Consequently, a tool to implement the OA framework for the furniture manufacturing sector was developed.

Objective 3: Investigate how sense-response in manufacturing SMEs accelerates and influences agility

The Sense Response Framework provides a vital perspective on the interplay between sensing and responding processes within organisations, highlighting the necessity of alignment to optimise resources for identifying and seizing opportunities while mitigating threats.

As noted, effective sensing capabilities encompassing awareness and competence are foundational for organisations, enabling them to interpret external drivers such as technological advancements and market shifts.

In a rapidly evolving landscape characterised by volatility, uncertainty, complexity, and ambiguity (VUCA), organisations must cultivate a keen awareness of their environments, which can be bolstered by fostering internal networks and collaborative practices.

Competence in the sense-response framework is equally critical, as it equips individuals and teams with the necessary skills and knowledge to gather and analyse information effectively.

This emphasis on continuous upskilling and reskilling is particularly pertinent in the Fourth Industrial Revolution, where new competencies are required to navigate an increasingly complex business environment.

Organisations must embrace reconfiguration, learning, and coordination to respond to environmental changes. Adapting structures and processes in response to external stimuli is crucial for organisational agility. A strong learning culture enhances this adaptive capability and promotes ongoing knowledge acquisition and skills development. Learning at the individual and organisational levels is a cornerstone for resilience, enabling organisations to refine their strategies and capabilities over time. Moreover, coordination and cooperation are pivotal to effective responses. Collaborative efforts within and across organisational boundaries facilitate goal alignment and resource sharing, enabling a more coherent and timely response to challenges. As organisations navigate the complexities of modern business, strategic partnerships with external entities are essential, as they provide access to additional expertise and resources.

However, the framework is not without its challenges. Organisations may struggle to accurately sense external drivers due to the environment's inherent complexities, necessitating investment in advanced analytical capabilities. Additionally, rigid organisational structures can impede timely responses to evolving skill demands, underscoring the need for a culture of agility and innovation.

Findings from this research offer valuable insights into how organisational policies, regulatory environments, and organisational structures enable SMEs in the furniture manufacturing sector to maintain agility, resilience, and growth.

The study emphasises the interplay between external policies and internal organisational factors, illustrating how financial flexibility, regulatory reform, and an empowering organisational culture enhance an SME's ability to adapt and innovate. The linkage to the Resource-Based View Theory and the Agility Theory reinforces the idea that internal capabilities and external resources are critical for sustained competitive advantage in a rapidly changing environment. Finally, the interpretive paradigm enriches this understanding by offering a deeper exploration of the lived experiences and meanings of the SME stakeholders involved. These practices, backed by strategic resource allocation, enable SMEs to navigate an increasingly dynamic marketplace. The study highlights the importance of resource flexibility, innovation, and collaboration in fostering agility by linking these practices to the Agility Theory and the Resource-Based View Theory.

Furthermore, an Interpretivist lens provides a deeper understanding of how organisational members perceive, interpret, and enact these practices, thus enriching the phenomenon of organisational agility in SMEs.

Objective 4 – Developing an OA Framework

The study outcomes revealed opportunities for the manufacturing industry to improve its manufacturing agility, thus influencing its competitiveness, sustainable growth, and performance. Several unique challenges have been identified in the furniture manufacturing SME sector, and a concerted effort is crucial to eliminating the long-term adverse effects. The study concludes that enhancing organisational agility within furniture manufacturing SMEs is not a singular pursuit but rather a combination of adaptive organisational practices, capacity building, technology integration, and collaborative networking.

The objectives of the study were achieved as evidenced below

Document review covered the BRICS countries' geographical locations and the unique drivers of SME performance in each country, using public records such as annual reports and strategic plans, as well as personal documents, including journals and incident reports. An array of recent journal articles, Scopus, and Web of Science studies was consulted using a keyword search. Supporting literature was obtained.

A further search of publicly available data from institutions such as Statistics South Africa was also conducted. The study focused on the role of SMEs, the characteristics of the SME sector in BRICS economies, the significance and contribution of SMEs to industrial markets, and the state of SMEs in BRICS countries.

Gaps in the existing literature were identified to develop the best solutions for the current state of SMEs, specifically in the South African manufacturing sector.

Factors influencing the performance of SMEs in BRICS countries were explored through an empirical process.

Data was collected from previous research studies, reports, and strategies focusing on SME support towards growth and performance, comparing BRICS countries.

This included evaluating challenges, organisational characteristics, and global factors affecting the performance of SMEs in BRICS countries. Competitiveness remains a priority in the manufacturing sector. Therefore, organisational knowledge of production trends contributes to success. Success is not the result of a single process but rather a combination of processes across regional economies (Domingues *et al.*, 2017).

All consulted studies acknowledge that SMEs are productive drivers of inclusive economic growth. A large population, young workforces, a high exchange rate, high economic growth (except for Brazil), access to resources, growth in the logistics sector, and unsaturated markets in most countries contribute to the growth of the BRICS nations. Small and Medium Enterprise growth barriers in BRICS countries include incompetence at the management level, continuous capital shortages, marketing and personnel problems, management skills, financial control, cash flows, costing, access to finance, market failures, structural challenges, information asymmetries, and trade skills.

Among the BRICS countries, China has made remarkable progress in developing its manufacturing sector. Raghavan, (2023) proposes reindustrialisation to improve the plight of the manufacturing sector and to address the causes and implications of hindrances. This study notes access to finance, inaccessible consultant support, the collapse of the manufacturing sector, and the provision of agility framework solutions.

China is almost the only country without access to financial challenges. The Chinese government effectively leverages its market size to attract foreign direct investment and import technologies. The Chinese management accounting practices are the worst. Its manufacturing sector has caused severe environmental harm and increased production costs, rendering it less competitive than its member states.

China recommends personnel coaching and talent development as essential components of the broader country's strategy to advance manufacturing and address skills gaps. South African SMEs are experiencing business stagnation, with decreasing generated bottom lines and lower contributions to employment growth. This state demands a strategy to drive the sustainability of manufacturing SME sectors.

China and South Africa share many similarities, including corruption, localised unrest, legal reforms, human rights issues, religious freedom concerns, political unrest, and environmental issues.

Although South Africa has largely sought to assist SMEs, prevailing conditions are difficult and volatile, and the failure rate is high. This is a negative reflection, especially for a country with a 26.7% unemployment rate at the beginning of 2018, a 38.2% youth unemployment rate, and a formal sector that continues to shed jobs. Gauteng, KwaZulu-Natal, and the Western Cape are the most significant contributors, collectively accounting for more than 60 % of the country's value.

South Africa is prone to learning from other BRICS member states in innovation, large-scale manufacturing, coordination, decentralisation of support to regions, policy monitoring, evaluation, and impact assessment. Globally, manufacturing SMEs constantly face transformation challenges in a fast-paced, technologically advancing world. Hence, there is a need to focus more on cost efficiency for sustainability. Ideas can be adopted from Russia, which has more robust SME policies and less dependence on government support. Small and Medium Enterprise policy implementation is led through an ecosystem supported by independent structures, and this model can be emulated in other BRICS countries seeking to enhance their SME performance.

In summary, while the Sense Response Framework offers a structured approach to addressing organisations' upskilling and reskilling needs in a dynamic environment, its effectiveness depends on the organisation's capabilities, culture, and collaborative practices.

Continuous refinement and adaptation are essential as organisations strive to remain competitive and responsive to an ever-changing landscape. By promoting a culture of awareness, competence, learning, and cooperation, organisations can enhance their agility and ensure sustainable growth amid ongoing change.

The study developed an industry-specific framework for organisational agility, drawing on best practices from BRICS countries. The CIMO logic implementation framework, developed for the sector and country context, serves as a step toward implementing the recommendations and is viewed as a much-needed tool for the furniture manufacturing sector.

Four critical questions were asked, leading to the development of the framework. Answers to these questions were obtained through the data collection tools utilised in the study. They then informed the final OA framework. The questions were based on the four objectives of the study sought to: Determine enablers and capabilities, including how policies, regulatory, and legislative frameworks in the manufacturing industry influence organisational agility, resilience, and growth; Investigate how practices and processes in manufacturing SMEs accelerate and influence agility; Investigate how sense-response in manufacturing SMEs accelerate and influence agility; Develop a theory-led best practices framework to strengthen OA in the manufacturing sector.

7.2 IMPLEMENTATION FRAMEWORK -MULTI (CONTEXT, INTERVENTION, MECHANISM, OUTCOME) LOGIC

The implementation framework below has been tabulated according to each objective to provide clear guidance to SMEs and their supporting organisations in closing gaps in their existing OA frameworks.

Table 16: CIMO Logic Framework Implementation Plan OBJECTIVE a) Enablers and Capabilities of OA

Context (C)	Intervention (I)	Mechanism (M)	Outcome (O)
Furniture manufacturing SMEs face heavy regulatory compliance, fragmented bureaucracy, and slow approval processes that constrain agility and innovation	Simplify regulatory processes and introduce SME-specific regulatory support and tax incentives	<ul style="list-style-type: none"> • Establish SME regulatory helpdesks (DTIC/SEDA level) • Digitised compliance platforms (tax, labour, environmental) • Regulatory fast-track for compliant SMEs • Tax incentives tied to innovation and localisation 	<ul style="list-style-type: none"> • Reduced compliance time and costs • Faster response to market changes • Improved resilience and survival rates • Greater focus on innovation instead of administration
SMEs operate in volatile markets requiring fast adaptation, but some cultures remain risk-averse or owner-dependent	Foster an innovation-oriented, learning organisational culture	<ul style="list-style-type: none"> • Encourage decentralised decision-making • Introduce idea-sharing forums and innovation hubs • Hasten intellectual property protection and create a dedicated communication platform to address innovation challenges • Reward experimentation and learning from failure 	<ul style="list-style-type: none"> • Faster decision-making • Higher employee engagement • Increased innovation capability • Sustained competitive advantage

		<ul style="list-style-type: none"> Promote flat organisational structures 	
Skills gaps, limited leadership capacity, and inadequate training constrain SME adaptability	Invest in continuous skills development and leadership training	<ul style="list-style-type: none"> Sector-specific technical training (CAD, CAM, lean manufacturing) Leadership and succession planning programs Formalised partnerships with TVET colleges and universities through MoUs On-the-job and peer-learning models 	<ul style="list-style-type: none"> Improved workforce flexibility Strong leadership pipelines Higher productivity and innovation Long-term organisational resilience
Disconnect exists between policy support, regulatory frameworks, and internal SME structures	Integrate policy incentives with agile organisational structures	<ul style="list-style-type: none"> Financial incentives linked to innovation and agility outcomes Support for flat structures and flexible work models Post-investment support and monitoring SME-friendly procurement policies 	<ul style="list-style-type: none"> Improved policy effectiveness Enhanced organisational agility Stronger post-crisis recovery Sustainable SME growth
Poor communication leads to slow decision-making, production inefficiencies, and misalignment	Establish clear, open, and continuous communication systems	<ul style="list-style-type: none"> Regular cross-departmental meetings Digital communication platforms (WhatsApp Business, Enterprise Resource Planning alerts) Transparent leadership communication Feedback loops between management and staff 	<ul style="list-style-type: none"> Faster execution of decisions Reduced errors and delays Improved collaboration Enhanced operational agility

This framework shows how SMEs can integrate organisational policies, regulatory frameworks, financial resources, and organisational culture to foster agility, resilience, and growth. By effectively aligning internal and external factors, SMEs can enhance their overall performance and competitiveness in a rapidly evolving market environment.

Table 17: Objective b) Practices and Processes

Context (C)	Intervention (I)	Mechanism (M)	Outcome (O)
Market volatility and shifting consumer preferences (e.g., home-office furniture demand)	Implement adaptive organisational and production practices	<ul style="list-style-type: none"> • Cross-functional teams • Flexible production layouts • Modular product design • Rapid product reconfiguration 	<ul style="list-style-type: none"> • Faster market responsiveness • Better resource utilisation • Reduced time-to-market • Sustained competitiveness
Leadership skill gaps and lack of succession planning reduce agility	Develop leadership and decision-making capabilities	<ul style="list-style-type: none"> • Leadership coaching and mentoring • Decision-making and emotional intelligence training • Knowledge-sharing platforms • Leadership succession frameworks 	<ul style="list-style-type: none"> • Faster and better decisions • Stronger organisational direction • Improved change management • Enhanced agility culture
Limited technology adoption and data utilisation restrict responsiveness	Integrate technology and data-driven innovation	<ul style="list-style-type: none"> • Adoption of CAD/CAM and CNC machinery • Business intelligence and market analytics tools • Customer feedback systems • Innovation grants and technology vouchers 	<ul style="list-style-type: none"> • Improved demand forecasting • Higher production flexibility • Enhanced product innovation • Competitive advantage
SMEs operate in isolation with limited access to markets, resources, and knowledge	Build collaborative SME ecosystems and networks	<ul style="list-style-type: none"> • Cluster Development Programs • Partnerships with suppliers, SADC markets, and universities • Industry association membership • Shared services and infrastructure 	<ul style="list-style-type: none"> • Expanded market access • Knowledge and resource sharing • Reduced duplication of effort • Increased agility and resilience

This framework shows how furniture manufacturing SMEs can enhance their agility through strategic practices such as adaptive organisational structures, skill development, technology integration, and collaborative networking. These practices help SMEs respond rapidly to market dynamics, thereby improving their competitive edge and sustainability in a globalised industry.

Below is a CIMO (Context, Intervention, Mechanism, Outcome) logic implementation framework for the **Sense-Response framework of Organisational Agility (OA)**, focusing on mechanisms for external sensing and feedback integration:

Table 18: Objective c) Sense-response frameworks

Context (C)	Intervention (I)	Mechanism (M)	Outcome (O)
Information asymmetry, especially between rural and urban SMEs	Improve access to market intelligence and information sharing	<ul style="list-style-type: none"> • Centralised market intelligence platforms • Region-specific information packaging • Value-chain collaboration forums • Digital and low-tech information channels 	<ul style="list-style-type: none"> • Faster strategic responses • Reduced uncertainty • Improved planning accuracy • Inclusive SME participation
Sudden demand shifts (e.g., remote work furniture) require rapid operational change	Develop flexible operations and quick response mechanisms	<ul style="list-style-type: none"> • Multi-skilled workforce • Lean management structures • Flexible work arrangements • Scalable production systems 	<ul style="list-style-type: none"> • Improved productivity • Reduced downtime • Faster product shifts • Business continuity during shocks
Delayed or poor decision-making undermines agility	Strengthen leadership decision-making capacity	<ul style="list-style-type: none"> • Economic and market monitoring tools • Scenario planning • Risk appetite frameworks • Evidence-based decision processes 	<ul style="list-style-type: none"> • Timely strategic decisions • Reduced reactionary behaviour • Improved organisational confidence • Stronger agility performance
Limited digital maturity restricts sensing market changes	Deploy technology-enabled sensing tools	<ul style="list-style-type: none"> • Digital demand-supply matching platforms • Data analytics and BI tools • Technology training programs • SME–institution data sharing 	<ul style="list-style-type: none"> • Early detection of market trends • Proactive strategy adjustment • Improved innovation outcomes

Fragmented stakeholder support limits SME responsiveness	Strengthen stakeholder engagement and coordination	<ul style="list-style-type: none"> • Public–private partnerships • Cluster and chamber participation • Government innovation and job retention programs • Feedback mechanisms with customers and regulators 	<ul style="list-style-type: none"> • Enhanced ecosystem support • Faster resource mobilisation • Improved market access • Sustainable SME agility
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This framework presents a structured approach to fostering **Organisational Agility (OA)** in furniture manufacturing SMEs by integrating feedback mechanisms and external sensing capabilities, ensuring these firms can respond effectively to market turbulence and maintain competitiveness in a dynamic global market.

Below is the CIMO (Context, Intervention, Mechanism, Outcome) logic implementation framework for **Best Practices** aimed at enhancing **Organisational Agility (OA)** in furniture manufacturing SMEs, based on the insights gathered from SMEs and supporting institutions:

Table 19: Objective d) Developing a best practice-based OA Framework

Context (C)	Intervention (I)	Mechanism (M)	Outcome (O)
SMEs lack structured best-practice frameworks for agility	Institutionalise agility best practices	<ul style="list-style-type: none"> • Continuous training programs • Labour productivity initiatives • Research-industry partnerships • Best-practice benchmarking 	<ul style="list-style-type: none"> • Enhanced agility maturity • Higher labour productivity • Strong innovation pipelines

Complex funding mechanisms restrict SME financial agility	Simplify financial access and incentives	<ul style="list-style-type: none"> • One-stop SME funding platforms • Flexible financing models • Innovation-linked incentives • Risk-sharing instruments 	<ul style="list-style-type: none"> • Improved financial agility • Increased investment in innovation • Long-term sustainability
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This **CIMO logic framework** integrates best practices across various dimensions, from skills development and leadership to policy support and stakeholder collaboration, to create a robust structure for fostering organisational agility in South African furniture manufacturing SMEs. The implementation of these best practices is designed to enable SMEs to effectively respond to external disruptions, remain adaptable, and thrive in a competitive market environment.

7.3 Summary of contributions

This study makes several contributions to the existing literature on how manufacturing SMEs could cope with market demands, competition, resource constraints, and human capital challenges. Firstly, sustainable growth and performance are often measured solely in financial or economic terms, without accounting for factors such as organisational agility and lean production. Dentchev *et al.* (2016), cited in Njenge (2021), argue that exploring the centrality of profit generation in social or sustainable business models is required. Looking at how they function, evolve, and generate value without primarily focusing on profit generation, sustainable growth, and performance cannot only be successful through external mechanisms.

7.3.1 SME Supporting Institutions

SME-supporting institutions are vital in bridging the gap between policies and practices. SME-supporting institutions need to offer tailored support services that address the unique needs of SMEs, avoiding a one-size-fits-all approach. Collaborations between public, semi-public, and private organisations can foster innovation and create a robust network of incubators and accelerators. This is supported by Cohen & Hochberg (2021).

Enhancing access to infrastructure and technology remains critical for enabling SMEs to thrive (Zhang *et al.*, 2023). SMEs highlighted the costs of electricity, owning business premises, and borrowing. Supporting institutions can therefore help these SMEs handle unforeseen costs. Supporting them to tap into online purchasing options, reduce logistics costs and share workspaces to reduce the cost of renting premises.

SME-supporting institutions in South Africa can learn from SEBRAE in Brazil and Skolkovo in Russia, which exemplify the importance of dedicated support services for SMEs. These organisations provide funding and training and facilitate partnerships with higher education institutions, driving innovation. Focusing on technological advancements and R&D initiatives within these institutions is crucial for fostering an environment where SMEs can thrive.

SME-supporting institutions must prioritise clear communication and coordination to avoid overlaps in their initiatives.

Establishing a centralised database of available resources and support services would facilitate better access for SMEs and enhance their ability to respond to market demands. SME supporting institutions should also provide tailored support focused on sustainability and technological adoption, which are increasingly important for maintaining competitiveness (Kraja & Osmani, 2015).

Challenges remain, particularly regarding integrating innovative practices across diverse regions. This indicates the one-size-fits-all support system offered to SMEs. There is a need to customise and account for location dynamics when providing the much-needed support. Accessing information and networks will differ in a city-based organisation from a rural-based manufacturing firm.

7.3.2 Furniture Manufacturing SMEs

For furniture manufacturing SMEs, embracing innovation and technology is vital for competitiveness. The sector must adapt to changing consumer preferences and global sustainability trends. While some SMEs in India and Brazil are increasingly adopting cutting-edge technologies, others, especially in Russia, lag in innovation.

Across the 3 data collection methodologies, access to finance remains a significant barrier, hindering growth and investment in new technologies. Therefore, SMEs need to leverage support from government initiatives and foster collaboration within the BRICS framework. SMEs can enhance their operational agility and market responsiveness.

For furniture manufacturing SMEs, embracing innovation and technology is essential for maintaining competitiveness. Manufacturers that balance cost pressures with quality assurance will be better positioned to weather current challenges and enhance resilience. Integrating advanced technologies like AI and blockchain is crucial for improving supply chain transparency and risk management (Mena, Karatzas & Hansen, 2022).

Manufacturers that balance cost pressures with quality assurance will be better positioned to weather current challenges and enhance resilience (Zuraw, 2024). Integrating advanced technologies like AI and blockchain is crucial for improving supply chain transparency and risk management (Mena *et al.*, 2022).

Despite advancements in countries such as China, Indian SMEs are increasingly integrating modern technologies, such as CAD/CAM, to improve their production processes (Qi, Tao, Hu *et al.*, 2021). However, Russian SMEs encounter challenges in modernising their production methods, limiting their ability to compete globally (Ivanov & Sokolov, 2018). There is an urgent need for South African SMEs to invest in design innovation and sustainable practices to align with global trends (Mkhize & Dube, 2020). Access to skilled labour, improved infrastructure, and effective market strategies will be crucial for the success of these SMEs.

The furniture manufacturing sector within the BRICS countries presents a complex landscape of opportunities and challenges. A robust enabling environment, underpinned by effective policies and innovation, is essential for fostering SME growth. Continuous engagement among industry stakeholders, academia, and policymakers will be critical in addressing challenges and harnessing the full potential of this sector.

The contributions outlined above highlight the importance of a coordinated effort among industry stakeholders, academia, policymakers, supporting institutions, and SMEs in the furniture manufacturing sector. A multifaceted approach incorporating innovative practices, supportive regulatory frameworks, and targeted financial resources will pave the way for sustained growth and competitiveness in the global market.

Furniture manufacturing SMEs can benefit significantly from adopting sustainable practices and leveraging advanced technologies. The shift towards environmentally friendly products is increasingly favoured by consumers and investors alike (Haldane *et al.*, 2023). By focusing on innovation and flexibility, SMEs can enhance their market positioning and resilience amidst rising costs and regulatory pressures. Countries within the BRICS bloc demonstrate varying levels of commitment to sustainability; for instance, while China and India actively promote eco-friendly manufacturing, Russia faces implementation hurdles (Zhou and Li, 2020; World Bank, 2020).

The future of the furniture manufacturing sector is shaped by the collective contributions of industry stakeholders, academia, policymakers, supporting institutions, and SMEs. When these actors prioritise sustainability, promote collaboration, and invest in technological advancement, the industry becomes better positioned to address emerging challenges and capitalise on new growth opportunities.

Ultimately, a coordinated, strategic effort across all stakeholders is essential to building an enabling ecosystem that drives sustainable SME development and enhances their competitiveness in global markets.

7.3.3 Academia

Academic research plays a vital role in understanding the dynamics of organisational agility (OA) and innovation within SMEs. Insights into best practices from BRICS nations provide a framework for South African SMEs to enhance their entrepreneurial ecosystems. Additionally, studies emphasising the importance of manufacturing flexibility and access to finance underscore SMEs' challenges and highlight potential areas for academic inquiry and policy recommendations. Academically, exploring organisational agility and the effectiveness of different innovation strategies within SMEs presents research opportunities.

The literature emphasises the need for a critical perspective on existing policies, highlighting areas for improvement to better support SMEs (Govuzela & Mafini, 2019). Further investigation into the impacts of manufacturing flexibility, access to finance, and information on SME performance is necessary to enhance understanding of the sector's dynamics.

Academically, there is a pressing need to further explore the entrepreneurial ecosystems that support SMEs in the manufacturing sector. Understanding the dynamics of sustainability practices, particularly in rural versus urban settings, presents a research opportunity (ECCSECC, 2017). Scholars should investigate the impact of regulatory frameworks on SME performance, as many still face barriers to financing, information access, and market entry (Osman *et al.*, 2025).

7.3.4 Policy Makers and Public Institutions

Supporting policy, regulatory, and legislative frameworks in BRICS countries significantly impacts the success of SMEs in the furniture manufacturing sector. Brazil's Systema S and initiatives like India's focus on entrepreneurial ecosystems illustrate effective models for fostering innovation and skill development. South African policies promoting funding for graduates reflect a tailored approach to addressing local needs. Nevertheless, critical perspectives on these frameworks highlight challenges, such as compliance burdens and insufficient financial support, that require ongoing attention from policymakers.

For policymakers, a coherent framework to support SMEs is paramount. Drawing on BRICS best practices, South Africa can enhance its entrepreneurial ecosystem by implementing more effective support policies, as in Brazil and India (Jones & Lee, 2018). There is an urgent call to address the challenges of accessing finance and information, which are critical for the growth of SMEs.

Ongoing efforts to improve the regulatory environment should focus on reducing compliance costs and enhancing access to financial resources (Sibiya & Kele, 2019). For policymakers, creating a cohesive framework that encourages integration and collaboration among SMEs is essential. The fragmented approach currently evident in South Africa's support institutions leads to inefficiencies and duplication, making it difficult to assess SME growth (OECD, 2018a). By fostering collaboration between various stakeholders and streamlining support mechanisms, policymakers can enhance the sustainable growth and performance of SMEs in the manufacturing sector (Williams & Cunningham, 2021).

7.4 Limitations of the study

This study had its limitations. Simon (2011) defines limitations as shortcomings in a research study that could hinder a researcher's ability to draw definite conclusions. Ross, Bibler and Zaidi (2019) concur that limitations are the problems or challenges experienced in conducting the study. If the study had been longitudinal, examining a specific period, the effectiveness of the support mechanisms for manufacturing SMEs could have been established.

The study focused on BRICS countries only, even though the bloc has since expanded to include more than 7 countries, becoming BRICS+. However, if it had focused on BRICS+, it would be too broad, and adding countries as the study progressed would still leave some out. Research protocols differ across many countries; in some, Gatekeeper approval is not required when respondents consent. This resulted in a longer time to obtain the Gatekeeper letters.

The study employed trusted research tools to ensure the collection of reliable data, drawing on a comprehensive literature review, in-depth interviews, and Delphi validation to refine the OA Framework. As the investigation focused specifically on the furniture manufacturing sector, the findings are most applicable to this industry context.

However, several limitations were noted. In some cases, respondents may not have fully understood certain questions, which could have led to inaccurate responses; to mitigate this risk, the study simplified probing questions without compromising their intent. Furthermore, geopolitical challenges, particularly the impact of Russian sanctions, restricted participation, as some individuals were unable to complete the questionnaire. Despite these constraints, the study's methodological approach remained rigorous and appropriate for the sector under examination.

Brazil uses Portuguese, India uses Hindi and English, Russia uses Russian, and very few people speak English correctly. The primary language spoken in China is Chinese, and English is the second language. To accommodate them, the questionnaires were translated into their native language using DeepL. The primary risk stemmed from a misunderstanding of terms between the study and the participants. Most participants in the study were purposefully selected and fluent in both English and their home languages. This mitigated the potential language barrier problems. The study provided for questionnaire translation into the various languages used in the BRICS countries.

This ensured accurate responses were obtained from a language the respondents understood. When necessary, an interpreter facilitated effective communication to avoid miscommunication. Additionally, the study may not have accounted for other variables that could influence OA in the manufacturing sector due to limitations aimed at maintaining the study's focus.

7.5 Future research

Building on the comprehensive overview of the BRICS economic landscape, with particular emphasis on South Africa's manufacturing sector and its associated challenges, several opportunities for future research emerge. Firstly, because the present study centred on BRICS countries, subsequent research could expand this scope by conducting comparative analyses that include BRICS+ economies. To ensure continuity and relevance, such comparative studies should remain industry-specific, enabling deeper insights into sectoral performance across different national contexts. Secondly, multiple respondents noted the lack of effective monitoring mechanisms to evaluate government policies in the manufacturing industry.

Consequently, future studies should investigate the impact of government policies on manufacturing SMEs, with a particular focus on how policy interventions influence organisational agility. A cross-country analysis within the BRICS grouping could further identify which policy frameworks have been most effective and why, generating valuable insights that could guide more informed and impactful policymaking in South Africa.

Some factors that negatively affect SME growth and sustainable performance include the lack of knowledge among SME firm owners, high transaction costs in servicing SMEs, and financial illiteracy among SME business owners. A strong financing system and strong manufacturing organisation fundamentals help BRICS countries grow. A study by Govuzela and Mafini (2019) about entrepreneurial bricolage, agility frameworks, and management accounting principles is vague. This necessitates a study to advance findings and recommendations on these 3 aspects, exploring each element as a key to innovative SMEs.

Lean manufacturing can help SMEs derive more value from available resources. A more targeted approach towards facilitating business and trade among SMEs will enhance enterprises' empowerment. Technological advancement in the manufacturing sector separates agile firms from those that cannot survive turbulence. Therefore, the role of technology in enhancing agility cannot be overemphasised. Future studies can examine how technological advancements, particularly those of the Fourth and Fifth Industrial Revolutions (IoT, Big Data, Artificial Intelligence), can support organisational agility in the furniture manufacturing sector. Understanding the technological enablers can provide insights into how SMEs can better respond to market changes. There is a need to build the capacity of manufacturing SMEs, specifically in agility. This study should evaluate the extent to which training and development initiatives improve organisational agility in manufacturing SMEs. It may be able to point out shortcomings in the current products and recommend enhancements.

The suggestions above aim to broaden understanding of organisational agility in the manufacturing sectors of BRICS nations, drawing on South Africa's challenges. Future research should emphasise empirical studies, cross-sector analyses, and technology integration to foster an agile, resilient manufacturing environment capable of competing globally.

7.6 Recommendations

The recommendations provided are drawn from the data collected through document reviews, interviews, and Delphi expert reviews.

Recommendations To Manufacturing SMEs Supporting Institutions

Access to finance is among the challenges faced by the South African manufacturing sector. Government and SME support institutions must dedicate more focus and resources to strengthening SMEs, particularly for job creation. Developing a structured framework and using management accounting systems will help funding institutions and SMEs determine each SME borrower's performance and risk profile. This means that sharing or cascading the joint BRICS SME Performance Database and regional communication platform is essential if SME-supporting institutions want to reduce SME interest rates and improve international cooperation to address this challenge. Generally, part of the high cost of borrowing is the risk that the financier takes. Hence, South African manufacturing firms must ensure resource maximisation, agility frameworks, and lean manufacturing to reduce waste and entrepreneurial bricolage. When one product does not do well in the market, other products can still perform and help sustain the enterprise.

A one-stop shop for SME lending must be developed, with precise requirements for the proposed elements in support mechanisms to be implemented. The database will benefit all funding institutions, entrepreneurial ecosystem support institutions, regulators, rating agencies, and other risk specialists seeking to achieve more efficient lending in BRICS countries.

South African SME-supporting institutions must ensure that the reflections in the BRICS Business Council Annual Report (2020) are considered at provincial and regional levels to address intellectual property challenges that affect product quality and business continuity. This will benefit the manufacturing sector, which is riddled with intellectual property (IP) theft and lacks effective methods to protect product uniqueness.

Market access is vital for SMEs to thrive, and understanding the policies and initiatives to facilitate market entry and expansion is crucial for enhancing organisational agility. Exploring a market/collaboration/partnership framework for BRICS countries will help accelerate inter-BRICS trade.

Recommendations For BRICS Member Countries

BRICS member countries must unpack and simplify the meaning of BRICS for ordinary SMEs, particularly for exchange programs, innovations, and incentive schemes. Secondly, as they align with the Sustainable Development Goals, the National Development Plan and Provincial Master Plans need to align exactly with BRICS country pledges linked to the SME sector.

Small and medium enterprise strategy development must focus on region-specific characteristics and the sector in which they operate to acquire customised support for specific SMEs and relevant sectors. Policymakers must look at building organisational agility so that firms can bounce back after a crisis (internal or external).

Recommendations for Policy Makers

The policy framework for South African manufacturing SMEs is vital for enabling market access. However, these frameworks should evolve to emphasise the long-term sustainability of businesses beyond the immediate goal of transformation. For example, economic empowerment policies should be paired with support mechanisms such as mentorship and financial literacy training that promote resilience and adaptability in the face of global economic shifts.

There must be management practices that gear the firm towards its ideal state. Considering a business as an ecosystem will help SMEs define their scope, create value, and develop long-term growth plans that drive sustainability. This will curb low impact in the long term.

SME Financing Institutions

Financiers need to include agility mechanisms as part of the requirements for manufacturing SMEs to obtain funding, which further guarantees the firm's continuity and ability to withstand environmental factors.

Investing in technology enables SMEs to streamline operations, improve decision-making, and increase flexibility. Studies show that SMEs that leverage digital tools are better equipped to scale operations and adapt to external market pressures (McAdam *et al.*, 2018). However, many SMEs face barriers to technology adoption due to high initial costs. Policies like South Africa's Industrial Policy Action Plan (IPAP), which offers subsidies for technological development (Department of Trade and Industry, 2020), can reduce these barriers and support SME competitiveness.

These organisations must constantly adjust their processes and structures to keep pace with changing market conditions (Sambamurthy, Bharadwaj, & Grover, 2003). Investing in employee training and development enables SMEs to foster a culture of continuous learning and innovation. According to Badakhshan, Conboy, Grisold *et al.*, (2020), this approach enhances the firms' ability to adapt to technological advancements and changes in consumer behaviour. Such adaptability helps SMEs remain resilient in the face of challenges.

Lean manufacturing is a proven approach to enhance operational flexibility and responsiveness. Taj *et al.* (2018) suggest that SMEs adopting lean practices can achieve greater efficiency and reduce operational waste, enabling quicker responses to market fluctuations. By focusing on continuous improvement, SMEs can remain adaptable in the face of uncertainty. Implementing lean practices requires investment in technology and training, which may challenge resource-constrained SMEs (Bortolotti *et al.*, 2020). National policies supporting technology adoption, such as South Africa's National Industrial Policy Framework, could help address this challenge (Department of Trade and Industry, 2020).

Recommendations For Academia and Research Organisations

Accurately collecting data and determining sample sizes are critical considerations for providing efficient SME support measures. Research and development are essential to ensure data quality, influencing positive decision-making, planning, and strategy implementation based on accurate statistics and data availability. Future studies on the analysis of SMEs in BRICS countries must consider regional specificities, as there is a dearth of reliable data across countries due to fragmented, uncoordinated support for SMEs.

All member countries use the entrepreneurial ecosystem used in Brazil, Russia, and China. Therefore, using a region-specific dataset to ensure that the ecosystem addresses the weaknesses of the manufacturing sector in a specific country and region, and to avoid the “one size fits all” approach to SME support, is integral.

It is recommended that the Economic Recovery plan, in its sub-element of localisation in re-industrialisation, considers region-specificities over and above the provincial strengths and unique elements to bring SME ecosystems closer to where growth is needed, rural/township areas. A few authors support the idea that a regional entrepreneurial ecosystem is a strategy worth utilising for the success of the manufacturing sector, as it considers the region's unique features and support structures.

A multifaceted approach is necessary to enhance organisational agility in manufacturing SMEs across the BRICS nations. This approach should include supportive policies, improved access to resources, better infrastructure, and a flexible business culture. Since each country faces unique challenges and has different strengths, it is essential to develop tailored strategies that address specific local contexts and capitalise on these markets' distinctive advantages.

Organisational agility is essential for manufacturing SMEs as they navigate a dynamic business environment. To enhance their agility, several key factors should be prioritised.

Leadership and strategy are foundational elements that promote agility within organisations.

Effective leaders communicate a clear vision and create well-defined strategies, allowing organisations to respond swiftly to changes in the market environment. This clarity instils confidence and directs employees, crucial for navigating uncertainty.

Flexibility and Adaptability within the organisational culture are paramount. Cultivating an environment that values change and encourages employees to take calculated risks can lead to innovative solutions and more responsive operations. By fostering an agile culture, organisations empower their workforce to experiment and adapt, which is critical in today's fast-paced market.

Digital transformation must also be prioritised. Investments in digital integration, such as Enterprise Resource Planning (ERP) systems and e-commerce platforms, can streamline operations and broaden customer reach, enabling SMEs to adapt quickly to market changes.

Fostering organisational agility in manufacturing SMEs within BRICS countries involves a comprehensive strategy encompassing leadership, culture, technology, and partnerships. By addressing each nation's unique challenges and opportunities, SMEs can develop agility as a fundamental aspect of their operations. This can help them position themselves for sustained success in a volatile business environment.

8. REFERENCES

Abdeldjalil, C., Samir, A., Mossab, B., Yamina, B., & Moussa, A. (2024). Innovation and competitive industrial performance in BRICS economies. *International Journal of Economic Perspectives*, 18(1), 284–309.

<https://ijeponline.lingcure.org/index.php/journal/article/view/562>

Abor, J., & Quartey, P. (2010). Issues in SME development in Ghana and South Africa. *International Research Journal of Finance and Economics*, 39(1), 218–228.

Javadian, G., Dobratz, C., Gupta, A., Gupta, V. K., & Martin, J. A. (2020). Qualitative research in entrepreneurship studies: A state-of-science. *The Journal of Entrepreneurship*, 29(2), 223–258.

Abrar, M., Khan, M., Ali, S., Majeed, M., Shah, I., Rashid, N., & Ullah, N. (2020). Demotivators for the adoption of agile methodologies for large-scale software development teams: An SLR from management perspective. *Journal of Software: Evolution and Process*, 32. <https://doi.org/10.1002/smr.2268>.

Abu, N., Pires da Silva, F., & Rino Vieira, P. (2025). Government support for SMEs in the Fintech era: Enhancing access to finance, survival, and performance. *Digital Business*, 5(1), Article 100099. <https://doi.org/10.1016/j.digbus.2024.100099>

Abu-Rumman, A., Al Shraah, A., Al-Madi, F., & Alfalah, T. (2021). Entrepreneurial networks, entrepreneurial orientation, and performance of small and medium enterprises: are dynamic capabilities the missing link?. *Journal of Innovation and Entrepreneurship*, 10(1), 29.

Achoki, A. (2023). Awareness and competence in organizational sense-response frameworks. *Journal of Strategic Management*, 12(3), 112-125.

Achoki, P. (2023). Upskilling and reskilling for a VUCA world: Organizational sense-response framework. *GiLE Journal of Skills Development*, 3(2), 34–52.

<https://doi.org/10.52398/gjsd.2023.v3.i2.pp34-52>

Adegbuyi, A.A., Adegbuyi, O.A., Ogunnaike, O.O., Ibidunni, A.S., & Fadeyi, O.I. (2018). Role of learning orientation on SMEs' performance: Empirical evidence from SMEs in Nigeria. *Journal of Entrepreneurship Education*, 21 (4), 20-34.

Adomako, S., Amankwah-Amoah, J., Donbesuur, F., Ahsan, M., Danso, A., & Uddin, M. (2022). Strategic agility of SMEs in emerging economies: Antecedents, consequences and boundary conditions. *International Business Review*, 31, 102032.

Aga, G., & Maemir, H. (2021). *COVID-19 and African firms: Impact and coping strategies* (Policy Research Working Paper No. 9642). World Bank. <https://hdl.handle.net/10986/35519>

Aggarwal, S., Kumar, S., & Singh, A. (2022a). Organizational agility and learning: Addressing skill gaps through collaboration and continuous assessment. *Journal of Business Innovation*, 18(2), 45-59.

Aggarwal, S., Mondal, S., & Chakraborty, D. (2022). Efficiency gain in Indian manufacturing sectors: Evidence from domestic value addition in exports. *Empirical Economics Letters*, 21(2), 69-83.

Aghina, W., Ahlbäck, K., De Smet, A., Lackey, G., Lurie, M., Murarka, M., & Handscomb, C. (2018, January 22). *The five trademarks of agile organizations: Leading in a disruptive world*. McKinsey & Company. <https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/the-five-trademarks-of-agile-organizations>

Ahmad, N., Ng, S. I., Basha, N. K., & Aziz, Y. A. (2022). Why knowledge-based human resource management matters for business service SMEs?. *International Journal of Management Practice*, 15(5), 549-585.

Aitchison, B. (2014). *Small business collective action and its effects on administrative modernization in Putin's Russia: from "grabbing hand" to "helping hand"?* (Doctoral dissertation, London School of Economics and Political Science). https://etheses.lse.ac.uk/994/1/Aitchison_Small_Business_Collective.pdf

Ajgaonkar, S., Neelam, N., & Wiemann, J. (2021). Drivers of workforce agility: a dynamic capability perspective. *International Journal of Organizational Analysis*. <https://doi.org/10.1108/jjoa-11-2020-2507>.

Al Malki, M. (2023). A review of sustainable growth challenges faced by small and medium enterprises. *International Journal for Global Academic & Scientific Research*, 2(1), 53-67.

Al Nuaimi, F. M. S., Singh, S. K., & Ahmad, S. Z. (2024). Open innovation in SMEs: a dynamic capabilities perspective. *Journal of Knowledge Management*, 28(2), 484-504.

Alamsjah, F.; Asrol, M. (2023). The impacts of middle managers' ambidexterity, continuous improvement, and organizational agility on business performance: a knowledge-based view. *"Journal of Industrial Engineering and Management"*, vol. 16, núm. 1, p. 27-53.

Alhojailan, M. I., & Ibrahim, M. (2012). Thematic analysis: A critical review of its process and evaluation. *West east journal of social sciences*, 1(1), 39-47.

Ali, A., & Wasim, A. (2022). Innovative Framework for Assessing the Impact of Agile Manufacturing in Small and Medium Enterprises (SMEs). *Sustainability*, 14(18), 11503. <https://doi.org/10.3390/su141811503>

Ali, S. K., Ismail, K., Khurram, W., Soehod, K. B., & Omar, W. Z. W. (2014). Sustainable growth of women owned technoprises in Malaysia. *Research Journal of Applied Sciences, Engineering and Technology*, 7(17), 3582-3592.

Allal-Chérif, O., Guaita-Martínez, J. M., & Montesinos Sansaloni, E. (2024). Sustainable esports entrepreneurs in emerging countries: Audacity, resourcefulness, innovation, transmission, and resilience in adversity. *Journal of Business Research*, 171, 114382. <https://doi.org/10.1016/j.jbusres.2023.114382>

Almeida, F., & Ramos, M. (2022). The impact of regulatory policies on small businesses in Brazil. *Latin American Business Review*, 31(2), 234-249.

Alokshe, M.M.F., Adedokun, M.W. & Iyiola, K. (2025). Advanced manufacturing technologies, strategic agility, business network and sustained competitive performance: an

empirical evidence from an emerging economy. *Humanit Soc Sci Commun* **12**, 391. <https://doi.org/10.1057/s41599-025-04671-9>

Alordiah, C. O., & Ossai, J. N. (2023). Enhancing questionnaire design: Theoretical perspectives on capturing attitudes and beliefs in social studies research. *International Journal of Innovative Science and Research Technology*, *8*(10), 603. <https://www.ijisrt.com/enhancing-questionnaire-design-theoretical-perspectives-on-capturing-attitudes-and-beliefs-in-social-studies-research>

Alshanty, A. M., & Emeagwali, O. L. (2019). Market-sensing capability, knowledge creation and innovation: The moderating role of entrepreneurial orientation. *Journal of Innovation & Knowledge*, *4*(3), 171–178. <https://doi.org/10.1016/j.jik.2019.02.002>

Ametefe, M. D., Adamu, A. G., Umaru, F. A., & Ametefe, F. G. (2025). Leadership's impact on SME performance: A systematic review of its role in enterprise. *Journal of the International Council for Small Business*, 1–32. <https://doi.org/10.1080/26437015.2024.2443764>

Anatan, L. (2021). A review on MSMEs resilience: Strategies and policies post covid-19 pandemic. *Review of Integrative Business and Economics Research*, *10*, 386-394.

Majka, M. (2024). The Delphi Methodology. https://www.linkedin.com/posts/marcin-majka-51683980_the-delphi-methodology-activity-7251849348030861312-1i9A/

Andreoni, A. & Anzolin, G. (2019). A Revolution in the Making? Challenges and Opportunities of Digital Production Technologies for Developing Countries. Inclusive and Sustainable Industrial Development Working Paper Series, no. 7, United Nations Industrial Development Organization. Vienna.

Andreoni, A., Chang, H.-J., & Labrunie, M. (2021). Capabilities for post-pandemic digitalisation: An exploratory note. Background note prepared for the Industrial Development Report 2022. Vienna: United Nations Industrial Development Organization.

Anifowose, F., Mezghani, M., Badawood, S., & Ismail, J. (2022). Contributions of machine learning to quantitative and real-time mud gas data analysis: A critical review. *Applied Computing and Geosciences*, *16*, 100095. <https://doi.org/10.1016/j.acags.2022.100095>

Annosi, M., Martini, A., Brunetta, F., & Marchegiani, L. (2020). Learning in an agile setting: A multilevel research study on the evolution of organizational routines. *Journal of Business Research*, 110, 554-566. <https://doi.org/10.1016/J.JBUSRES.2018.05.011>.

Appelbaum, S. H., Berke, J., & Hadrich, J. (2017a). Organizational agility: A path to customer satisfaction. *Journal of Organizational Change Management*, 30(5), 842-858.

Appelbaum, S. H., Calla, R., Desaules, M., & Hassan, N. (2017b). The challenges of organizational agility (part 1). *Industrial and Commercial Training* 3 January 2017; 49 (1): 6–14. <https://doi.org/10.1108/ICT-05-2016-0027>

Arbatli Saxegaard, E. C., Coppo, M., Khalil, N., Kotera, S., & Unsal, F. D. (2023). Inequality and Poverty in India: Impact of COVID-19 Pandemic and Policy Response. *IMF Working Papers*, 2023(147), A001.

Ardolino, M., Bacchetti, A., & Ivanov, D. (2022). Manufacturing recovery after the COVID-19 pandemic: Evidence from Italy. *International Journal of Production Research*, 60(9), 2803-2818.

Arjun, K., Sankaran, A., Kumar, S., & Das, M. (2020). An endogenous growth approach on the role of energy, human capital, finance and technology in explaining manufacturing value-added: A multi-country analysis. *Heliyon*, 6(7).

Arno, P. (2025). SME Business Agility Framework: A Comprehensive Review of Capabilities, Dimensions, and Enablers. *IEEE Access*.

Arsawan, I. S., Hariyanti, H., Atmaja, A. W., Suhartanto, D., & Koval, V. (2022a). Organizational agility as a competitive advantage in SMEs. *Global Business Review*, 23(2), 462-478. <http://dx.doi.org/10.3390/joitmc8030149>

Arsawan, I. W. E., ssy De Hariyanti, N. K., Atmaja, I. M. A. D. S., Suhartanto, D., & Koval, V. (2022b). Developing organizational agility in SMEs: An investigation of innovation's roles and strategic flexibility. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(3), 149.

Asa, A. R., & Prasad, N. S. (2014). Analysis on the Factors that Determine Sustainable Growth of Small Firms in Namibia. *International Journal of Management Science and Business Administration*, 1(1), 5-11.

Atanassova, I., Bednar, P., Khan, H., & Khan, Z. (2025). Managing the VUCA environment: The dynamic role of organizational learning and strategic agility in B2B versus B2C firms. *Industrial Marketing Management*, 125, 12–28.

<https://doi.org/10.1016/j.indmarman.2024.12.008>

Attafar, A., Ghandehari, M., & Momeni, G. (2012). Study of required organizational base for implementation of agility strategy in organizations. *Interdisciplinary Journal of Contemporary Research in Business*, 3(11), 190-180.

Audretsch, D. B. & Belitski, M. (2017). Entrepreneurial ecosystem in cities. Establishing the framework conditions. *Journal of Technology Transfer*, 42(5), 1030–1051. <https://doi.org/10.1007/s10961-016-9473-8>.

Audretsch, D. B., Belitski, M., Fiedler, A., & Khlystova, O. (2025). Five research themes of knowledge spillover theory of entrepreneurship: An analysis of 30 years of research. *International Journal of Management Reviews*.

Avella, J. (2016). Delphi panels: Research design, procedures, advantages, and challenges. *International Journal of Doctoral Studies*, 11, 305–321. <https://doi.org/10.28945/3561>

Avenyo, E. K., Bell, J. F., Nyamwena, J., & Robb, N. (2021). *Identifying vulnerable and priority manufacturing sectors for economic recovery in South Africa: An empirical approach* (CCRED-IDTT Working Paper 2021/05). Centre for Competition, Regulation and Economic Development.

Ayandibu, A. O., & Houghton, J. (2017). The role of small and medium scale enterprises in local economic development. *Journal of Business and Retail Management Research*, 11(2), 133–139. https://jbrmr.com/cdn/article_file/i-26_c-262.pdf

Azam, A. (2019). Challenges of managing SMEs in emerging markets: A case study of the BRICS countries. *Journal of Small Business and Enterprise Development*, 26(4), 559-575.

- Badakhshan, P., Conboy, K., Grisold, T., & vom Brocke, J. (2020). Agile business process management: A systematic literature review and an integrated framework. *Business Process Management Journal*, 26(6), 1505–1523. <https://doi.org/10.1108/BPMJ-12-2018-0347>
- Baia, E., Ferreira, J. J., & Rodrigues, R. (2019). Value and rareness of resources and capabilities as sources of competitive advantage and superior performance. *Knowledge Management Research & Practice*, 18(3), 249–262. <https://doi.org/10.1080/14778238.2019.1599308>
- Balasubramanyam, V. N., & Wei, Y. (2015). A comparative analysis of the manufacturing sectors in india and china. *Review of Development and Change*, 20(2), 35-58.
- Bals, L., & Rosca, E. (2022). Resource-based view. In *Handbook of Theories for Purchasing, Supply Chain and Management Research* (pp. 106-117). Edward Elgar Publishing.
- Bangura, S., & Lourens, M. E. (2024). Organisational agility: A leverage to firm's performance: An integrative review. *International Journal of Research in Business and Social Science*, 13(3), 77–84. <https://doi.org/10.20525/ijrbs.v13i3.3092>
- Bansar. (n.d.). *China furniture market – The complete guide*. Bansar China. Retrieved April 19, 2025, from <https://www.bansarchina.com/china-furniture-market/>
- Baran, B. E., & Woznyj, H. M. (2020). Managing VUCA: The human dynamics of agility. *Organizational dynamics*, 100787. Advance online publication. <https://doi.org/10.1016/j.orgdyn.2020.100787>
- Barhmi, S. (2022). Organizational agility in manufacturing: A framework for improving competitive advantage. *International Journal of Operations & Production Management*, 42(5), 1234-1256.
- Barinova, V.A., Zemtsov, S.P. (2023). From Direct SMEs' Support to Entrepreneurship Policy in Russia: Why Do Regional Entrepreneurial Ecosystems Matter?. *Reg. Res. Russ.* 13, 440–457 (2023). <https://doi.org/10.1134/S2079970523700776>

- Barkhordari Ahmadi, F., Esmaeeli, B., Shariat Moghani, S., Rahimi, R., & Shariati, K. (2023). A Literature Review of Group Decision-Making: The Case Study of Delphi Method. *Medical Education Bulletin*, 4(4), 824-833.
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99-120. <https://doi.org/10.1177/014920639101700108>
- Barney, J. B. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of management*, 27(6), 643-650.
- Barrutia, J. M., & Echebarria, C. (2015). Resource-based view of sustainability engagement. *Global Environmental Change*, 34, 70-82.
- Basit, H. A., Gharleghi, B., Batool, K., Hassan, S. S., Jahanshahi, A. A., & Kliem, M. E. (2024). Review of enablers and barriers of sustainable business practices in SMEs. *Journal of Economy and Technology*, 2, 79–94. <https://doi.org/10.1016/j.ject.2024.03.005>
- Baskarada, S., & Koronios, A. (2018). The 5S organizational agility framework: a dynamic capabilities perspective. *International Journal of Organizational Analysis*, 26, 331-342. <https://doi.org/10.1108/IJOA-05-2017-1163>.
- Bayati, A. and Taghavi, A. (2007). The impacts of acquiring iso 9000 certification on the performance of smes in tehran. *The TQM Magazine*, 19(2), 140-149. <https://doi.org/10.1108/09544780710729980>
- Bento, G., & Tontini, G. (2019). Maturity of lean practices in Brazilian manufacturing companies. *Total Quality Management & Business Excellence*, 30(1–2), 1–15. <https://doi.org/10.1080/14783363.2019.1665827>
- Bessant, J., Caffyn, S., & Gallagher, M. (2000). Developing agile manufacturing: A framework for analysis. *International Journal of Operations & Production Management*, 20(7), 714-731.
- Bettioli, M., Capestro, M., Di Maria, E., & Micelli, S. (2023). Ambidextrous strategies in turbulent times: The experience of manufacturing SMEs during the COVID-19 pandemic. *International Journal of Physical Distribution & Logistics Management*, 53(2), 248–272. <https://doi.org/10.1108/IJPDLM-10-2021-0422>

Bharadwaj, A. S., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. (2013). Digital business strategy: Toward a next generation of insights. *MIS Quarterly*, 37(2), 471-482.

Bhatia, M., Gupta, N., & Rajput, N. (2023). Impact of COVID-19 on global manufacturing industries. *Journal of Industrial Economics*, 21(3), 345-358.

Bhatt, A., Rehman, S.U., & Rumman, J.B.A. (2020). Organizational Capabilities Mediates between Organizational Culture, Entrepreneurial Orientation, and Organizational Performance of SMEs in Pakistan. *Entrepreneurial Business and Economics Review*, 8(4), 85-103. <https://doi.org/10.15678/EBER.2020.080405>.

Bhattacharya S., & Roy A. K. (2021). Impact of Social Protection Programs on Poverty During COVID-19 Pandemic. *Journal of Development Studies*.

Bhorat, H., & Rooney, C. (2017). *State of Manufacturing in South Africa*. Cape: Development Policy Research Unit, University of Cape Town. *The role of the manufacturing sector in South Africa's economic development*. *South African Journal of Economics*, 85(3), 357-370.

Biyela, N. Y., & Utete, R. (2024). Agenda for future business resilience and survival avenues in crisis times: A systematic literature review of the effects of COVID-19 on SMEs' productivity in South Africa. *Social Sciences & Humanities Open*, 10, 100982.

Boddy, C. R. (2016). Sample size for qualitative research. *Qualitative market research: An International Journal*, 19(4), 426-432. <https://doi.org/10.1108/QMR-06-2016-0053>

Bogdan, R. C., & Biklen, S. K. (2003). ***Qualitative research for education: An introduction to theories and methods*** (4th ed.). Pearson Education.

Borges, L., Veiga, P., & McCanery, J. (2018). *SME policies in Brazil: A focus on taxation, regulation, and growth*. *Latin American Business Review*, 19(4), 217-234.

Bornay-Barrachina, M., López-Cabrales, Á., & Salas-Vallina, A. (2023). *Sensing, seizing, and reconfiguring dynamic capabilities in innovative firms: Why does strategic leadership make a difference?* *BRQ Business Research Quarterly*, 28(2), 399-420. <https://doi.org/10.1177/23409444231185790>

Bortolotti, T., Boscari, S., & Danese, P. (2020). Lean practices in small and medium enterprises: A systematic review. *International Journal of Production Research*, 58(10), 3068-3085.

Botha, A., Smulders, S. A., Combrink, H. A., & Meiring, J. (2020). Challenges, barriers and policy development for South African SMMs – does size matter? *Development Southern Africa*, 38(2), 153–174. <https://doi.org/10.1080/0376835X.2020.1732872>

Boulkedid, R., Abdoul, H., Loustau, M., Sibony, O., & Alberti, C. (2011). Using and reporting the Delphi method for selecting healthcare quality indicators: a systematic review. *PloS one*, 6(6), e20476. <https://doi.org/10.1371/journal.pone.0020476>

Brazilian Institute of Geography and Statistics (IBGE). (2023). *SME definitions and classifications*. Retrieved from IBGE website

BRICS Economic Cooperation. (2019). *BRICS Economic Partnership Strategy 2025*.

BRICS Economic Cooperation. (2021). Enhancing competitiveness in manufacturing: Strategies and initiatives. *BRICS Economic Review*, 15(2), 102-118.

BRICS Economic Indaba. (2023). BRICS manufacturing sector: A key contributor to growth. *Economic Review of BRICS*, 2023.

BRICS Economic Strategy. (2015). Economic strategies and industrial development priorities in BRICS countries. *BRICS Business Journal*, 4(1), 27-44.

BRICS Economic Strategy. (2015). Enhancing industrial cooperation for BRICS growth. *BRICS Strategy Paper*, 2015.

BRICS Economic Strategy. (2015a). *Manufacturing: Key to job creation and sustainable growth in BRICS*. BRICS Secretariat.

BRICS Information Centre. (2017). *BRICS leaders Xiamen declaration*. University of Toronto. <http://www.brics.utoronto.ca/docs/170904-xiamen.html>

BRICS New Development Bank. (2022). Annual report 2022. <https://www.ndb.int/annual-report-2022/>

BRICS. (2015). *BRICS strategy for economic partnership*.
<http://www.brics.utoronto.ca/docs/150709-strategy.html>

Brown, T. S. (2018). Key principles in using the Delphi method for expert consensus in organizational research. *Journal of Organizational Research*, 19(4), 216-227.

Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. W.W. Norton & Company.

Buchanan, R., & O'Connell, J. (2023). Organizational agility and decision-making: The role of rapid adaptability. *Journal of Business Strategy*, 41(5), 56-62.

Bugwandin, V., & Bayat, M. S. (2022). A sustainable business strategy framework for small and medium enterprises. *Acta Commercii*, 22(1), 22(1), 1-12. <https://doi.org/10.4102/ac.v22i1.1021>

Bugwandin, V., Anwana, E. and Aroba, O. J. (2025) "Critical Factors for Growth and Sustainability of Small and Medium Enterprises: A Systematic Literature Review and Propositions for a Successful Transition into Large Corporate Organizations", *African Journal of Inter/Multidisciplinary Studies*, 7(1), pp. 1–18.

Bullough, A., Renko, M. (2013). Entrepreneurial resilience during challenging times, *Business Horizons*. Volume 56, Issue 3, Pages 343-350, ISSN 0007-6813, <https://doi.org/10.1016/j.bushor.2013.01.001>.

Burns, M., Bally, J., Burles, M., Holtslander, L., & Peacock, S. (2022). Constructivist Grounded Theory or Interpretive Phenomenology? Methodological Choices Within Specific Study Contexts. *International Journal of Qualitative Methods*, 21. <https://doi.org/10.1177/16094069221077758>

Burns, P., de Lange, D. E., & Stokes, R. (2022). Understanding the epistemological assumptions of qualitative research in entrepreneurship studies. *International Journal of Entrepreneurship*, 26(2), 77-89.

Bushe, B. (2019). The causes and impact of business failure among small to micro and medium enterprises in South Africa. *Africa's Public Service Delivery & Performance Review*, 7(1), 1-26. <https://doi.org/10.4102/apsdpr.v7i1.210>

BRICS Business Council. (2023). Manufacturing sector in BRICS: Strategic importance for economic growth. *BRICS Annual Report*, 2023.

Calijuri, M. ., & Toledo Pires de Oliveira, P. (2023). Cooperative Compliance in Brazil: What Does the Future Hold?. <https://doi.org/10.18235/0005204>

Camarinha-Matos, L. M., Fornasiero, R., Ramezani, J., & Ferrada, F. (2019). Collaborative networks: A pillar of digital transformation. *Applied Sciences (Switzerland)*, 9(24). <https://doi.org/10.3390/app9245431>

Camarinha-Matos, L. M., Rocha, A. D., & Graça, P. (2022). Collaborative approaches in sustainable and resilient manufacturing. *Journal of intelligent manufacturing*, 1–21. Advance online publication. <https://doi.org/10.1007/s10845-022-02060-6>

Campos-Blazquez, J. R., Martin-Garcia, S., & Cardenas-Munoz, M. (2024). Building an entrepreneurial ecosystem through Open Innovation fostered by public policies. *Journal of Innovation & Knowledge*, 9(4), 100587.

Cardenas, L. (2024). Interdisciplinary Exploration of the Advantages and Disadvantages of Agile Methodologies. *Communications of International Proceedings*. <https://doi.org/10.5171/2024.4315824>.

Chakma, D., & Chaijinda, S. (2020). Learning and organizational agility: A dynamic model for resilience. *Management Review Quarterly*, 70(3), 415-430.

Chang, S., Lee, J., & Lee, C. (2017). Innovation capability as a competitive advantage in SMEs: An empirical study. *International Journal of Business and Economics*, 16(1), 78-85.

Charbonnier-Voirin, A. (2011), "The development and partial testing of the psychometric properties of a measurement scale of organizational agility", *Management*, Vol. 14, No. 2, pp. 119–156.

Chen, J., Zhang, M., & Li, T. (2022). Decline in China's industrial production: Challenges and strategies. *Journal of Asian Economics*, 34(4), 119-132.

Choi, Y. S., & Lim, U. (2017). Contextual Factors Affecting the Innovation Performance of Manufacturing SMEs in Korea: A Structural Equation Modeling Approach. *Sustainability*, 9(7), 1193. <https://doi.org/10.3390/su9071193>

Christopher, M. (2000). The agile supply chain: Competing in volatile markets. *Industrial Marketing Management*, 29(1), 37–44. [https://doi.org/10.1016/S0019-8501\(99\)00110-8](https://doi.org/10.1016/S0019-8501(99)00110-8)

Christopher, M., & Peck, H. (2004). Building the resilient supply chain. *International Journal of Logistics Management*, 15(2), 1-13. <https://doi.org/10.1108/09574090410700275>

Chukwuedo, S. O., Chukwuedo, C. B., Paul, J. O., & Nnajiolor, F. N. (2021). From choice of concepts to designing statistically testable models: On the centrality of developing conceptual frameworks in research. *NAU Journal of Technology and Vocational Education*, 6(1).

Civildaily. (2023, June 8). Demographic advantage: India vs. China. <https://www.civildaily.com/news/demographic-advantage-india-vs-china/>

Clegg, C., & Cukier, M. (2019). Organizational agility in response to environmental complexity: Challenges and future directions. *International Journal of Organizational Behavior*, 13(2), 59-73.

Cohen, S., & Hochberg, Y. V. (2021). The role of public-private partnerships in Brazilian start-ups. *Research Policy*, 50(1), Article 104272.

Costa, E., & Almeida, M. (2021). Agribusiness and the role of innovation in Brazil's SME sector. *International Journal of Agribusiness*, 26(1), 10-29. <https://doi.org/10.1016/j.ijag.2020.12.006>

Costa, E., Soares, A., & Pinho de Sousa, J. (2018). Exploring the CIMO-Logic in the design of collaborative networks mediated by digital platforms. In L. M. Camarinha-Matos, H. Afsarmanesh, & D. Antonelli (Eds.), *Collaborative networks of cognitive systems* (pp. 266–277). Springer. https://doi.org/10.1007/978-3-319-99127-6_23

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). SAGE Publications.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). Sage.

Cukier, W. E. N. D. Y., Mccallum, K. E., Egbunonu, P., & Bates, K. (2021). The mother of invention: Skills for innovation in the post-pandemic world. In Public Policy Forum, Diversity Institute, Future Skills Centre. https://www.torontomu.ca/diversity/reports/MotherOfInvention_EN.pdf

Cunningham, S., Williams, G. & De Beer, D. (2014). Advanced Manufacturing and Jobs in South Africa: An Examination of Perceptions and Trends. Conference Proceedings. *International Conference on Manufacturing-Led Growth for Employment and Equality*. Johannesburg: DST and Trade & Industrial Policy Strategies (TIPS).

Custer, R.L., Scarcella, J.A. and Stewart, B.R. (1999) 'The Modified Delphi Technique - A Rotational Modification. *Journal of Vocational and Technical Education*, 15(2), 1-10. <https://doi.org/10.21061/jcte.v15i2.702>.

Cyrino, A. B., Parente, R., Dunlap, D., & de Góes, B. B. (2017). A critical assessment of Brazilian manufacturing competitiveness in foreign markets. *Competitiveness Review: An International Business Journal*, 27(3), 253–274. <https://doi.org/10.1108/CR-08-2016-0046>

Da Rocha Junior, W. R., & Gazoli de Oliveira, A. L. (2019). Productivity improvement through the implementation of lean manufacturing in a medium-sized furniture industry: A case study. *South African Journal of Industrial Engineering*, 30(4), 172-188.

Da Silva Barbosa Gama, M., & Bonamigo, A. (2024). Exploring lean manufacturing impact on sustainable performance in automotive companies in Brazil. *International Journal of Lean Six Sigma*. <https://doi.org/10.1108/ijlss-01-2024-0009>.

da Silva Medina, G., & Pokorny, B. (2022). Agro-industrial development: Lessons from Brazil. *Land use policy*, 120, 106266.

Da Silva, D., De Matos, G., De Oliveira Gibbon, A., Veiga, C., Teixeira, C., Lopes, L., & Piqué, J. (2025). Barriers to innovation in Brazilian small- and medium-sized enterprises. *Journal of Small Business and Enterprise Development*. <https://doi.org/10.1108/jsbed-09-2023-0442>.

Dahl, M., & Pedersen, J. (2022). Open innovation in Brazil's start-up ecosystem: Challenges and opportunities. *Journal of Business Venturing*, 32(2), 181-196.

Das, K. P., Mukhopadhyay, S., & Suar, D. (2023). Enablers of workforce agility, firm performance, and corporate reputation. *Asia Pacific Management Review*, 28(1), 33-44. <https://doi.org/10.1016/j.apmrv.2022.01.006>

De Oliveira, J., Basso, L., Kimura, H., & Sobreiro, V. (2018). Innovation and financial performance of companies doing business in Brazil. *International Journal of Innovation Studies*. <https://doi.org/10.1016/J.IJIS.2019.03.001>.

De Sousa Filho, J., Santos, G., De Santa Ribeiro, L., De Cerqueira, R., & Lima, L. (2024). Global Value Chains and Intra-BRICS Trade in Value-added. *Journal of Government and Economics*. <https://doi.org/10.1016/j.jge.2024.100127>.

de Vos, A. S. (2005). *Research at grass roots: For the social sciences and human service professions* (3rd ed.). Van Schaik.

Deloitte. (2013). *Enhancing manufacturing competitiveness in South Africa*. Readkong. <https://www.readkong.com/page/enhancing-manufacturing-competitiveness-in-south-africa-6840992>

Deloitte. (2023). Chief Procurement Officer Survey: Navigating Supply Chain Risks. [be-global-chief-procurement-officer-survey-2023-deloitte-be-v2-report-en.pdf](https://www.deloitte.com/au/en/issues/supply-chain/2023/global-chief-procurement-officer-survey-2023-deloitte-be-v2-report-en.pdf)

Department of Trade and Industry South Africa (2020). *National Industrial Policy Framework (NIPF)*.

Department of Trade and Industry. (2017). *Annual report 2016/17*. Republic of South Africa. https://www.gov.za/sites/default/files/gcis_document/201709/thedti2016-17annualreport.pdf

Department of Trade, Industry and Competition. (2023). *Annual report 2022/23 financial year*. <https://www.thedtic.gov.za>

Desalegn, E. G., Guedes, M. J. C., Da Silva Gomes, J. F., & others. (2024). Disentangling organizational agility from flexibility, adaptability, and versatility: A systematic review. *Future Business Journal*, 10, 117. <https://doi.org/10.1186/s43093-024-00405-6>

Descombe, M. (2007). *The good research guide: For small-scale social research projects* (3rd ed.). Open University Press.

Devaney, L., & Henchion, M. (2018). Who is a Delphi ‘expert’? Reflections on a bioeconomy expert selection procedure from Ireland. *Futures*, 99, 45-55.

Dey, S., Sharma, R.R.K. & Pandey, B.K. Relationship of Manufacturing Flexibility with Organizational Strategy. *Glob J Flex Syst Manag* **20**, 237–256 (2019). <https://doi.org/10.1007/s40171-019-00212-x>

Diabate, A., Sibiri, H., Wang, L., & Yu, L. (2019). Assessing SMEs’ Sustainable Growth through Entrepreneurs’ Ability and Entrepreneurial Orientation: An Insight into SMEs in Côte d’Ivoire. *Sustainability*, 11(24), 7149. <https://doi.org/10.3390/su11247149>

Diamond, I. R., Grant, R. C., Feldman, B. M., Pencharz, P. B., Ling, S. C., Moore, A. M., & Wales, P. W. (2014). Defining consensus: a systematic review recommends methodologic criteria for reporting of Delphi studies. *Journal of clinical epidemiology*, 67(4), 401–409. <https://doi.org/10.1016/j.jclinepi.2013.12.002>

Dianu, D., Gavriluț, D., Badulescu, D., Simut, R., & Herte, D. (2019). Business Formation, Discontinuity and Economic Growth in Romania. In *Madrid: The 34th International Business Information Management Association Conference (IBIMA)*.

Dieste, M., Sauer, P. C., & Orzes, G. (2022). Organizational tensions in Industry 4.0 implementation: A paradox theory approach. *International Journal of Production Economics*, 251, 108532. <https://doi.org/10.1016/j.ijpe.2022.108532>

Dinlersoz, E., & Fu, S. (2022). Infrastructure investments and their impacts on Chinese manufacturing. *International Journal of Infrastructure Development*, 22(4), 122-134.

Dmitry, S. (2021). Building the infrastructure for transforming Russian industry towards better resource efficiency and environmental performance. *Procedia Environmental Science, Engineering and Management*, 8(2), 483-493.

Döckel, J. A., & Ligthelm, A. A. (2015). Factors responsible for the growth of small business. *South African Journal of Economic and Management Sciences*, 8(1), a1283. <https://doi.org/10.4102/sajems.v8i1.1283>

Domingues, J., Silva, F., & Pereira, M. (2017). Organisational knowledge and production trends: The role of multi-processes across regional economies. *International Journal of Production Economics*, 193, 42-53.

Doroshenko, Y. A., Rudychev, A. A., & Riapukhina, V. N. (2021). Technological modernisation prospects forecast of the main industries in Russia based on the assessment of innovative development level. *Journal of Applied Engineering Science*, 19(4), 1143–1149. <https://doi.org/10.5937/jaes0-34688>

Driver, C. (2019). Trade liberalization and South African manufacturing. *United Nations University World Institute for Development Economics Research*, 1(1), 1-20.

Driver, C. (2024). South African manufacturing: The challenge of growth with jobs. *Structural Change and Economic Dynamics*, 68, 433–445. <https://doi.org/10.1016/j.strueco.2023.10.015>

Dube, J. (2024). Analysing the Nexus between Innovation and Knowledge Sharing among Small and Medium Enterprises (SMEs) in Promoting Development in BRICS Countries. *BRICS Journal of Economics*, 5(3), 163-178.

Dubey, R., Altay, N., Gunasekaran, A., Blome, C., Papadopoulos, T., & Childe, S. J. (2018). Supply chain agility, adaptability and alignment: empirical evidence from the Indian auto components industry. *International Journal of Operations & Production Management*, 38(1), 129-148

Dweck, E., Marcato, M. B., Torracca, J., & Miguez, T. (2022). COVID-19 and the Brazilian manufacturing sector: Roads to reindustrialization within societal purposes. *Structural Change and Economic Dynamics*, 61, 278–293. <https://doi.org/10.1016/j.strueco.2022.02.018>

Dyer, J.H. and Singh, H. (1998) The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage. *Academy of Management Review*, 23, 660-679.

ECCSECC. (2017). Enhancing entrepreneurial ecosystems for sustainable SME growth: Insights from rural and urban contexts. *Entrepreneurship Development Review*, 21(4), 245-259.

Economic Times. (2023). Sustainability initiatives in Brazil's agriculture sector. *Economic Times*. <https://economictimes.indiatimes.com>

ECSECC. (2021). The role of SMEs in South African manufacturing: Provincial analysis. *Economic Development Review*, 40(2), 22-35.

ECSECC. (2021, January 20). *ECSECC Annual Report 2019/2020*. Eastern Cape Socio-Economic Consultative Council. <https://www.ecsecc.org.za/newsitem/ecsecc-annual-report-20192020-1>

Enaifoghe, A., & Ramsuraj, T. (2023). Examining the function and contribution of entrepreneurship through small and medium enterprises as drivers of local economic growth in South Africa. *African Journal of Inter/Multidisciplinary Studies*, 5(1), 1–11. <https://doi.org/10.51415/ajims.v5i1.1172>

Epede, E. B., & Wang, D. (2022). Global value chain linkages: An integrative review of the opportunities and challenges for SMEs in developing countries. *International Business Review*, 31(5), 101993. <https://doi.org/10.1016/j.ibusrev.2022.101993>

European Commission. (2024). India's economic surge: From regional to global economic player. *Economy and Finance*. https://economy-finance.ec.europa.eu/economic-forecast-and-surveys/economic-forecasts/autumn-2024-economic-forecast-gradual-rebound-adverse-environment/indias-economic-surge-regional-global-economic-player_en

Evangelist-Roach, L. (2020). Workforce agility in the manufacturing industry: An exploration of its impact on organizational effectiveness. *International Journal of Human Resource Management*, 31(5), 855-872.

Expert Market Research. (2025). *Impact of COVID-19 on global manufacturing industry*. <https://www.expertmarketresearch.com/articles/impact-of-covid-19-on-global-manufacturing-industry>

Fajarika D, Trapsilawati F, Sopha BM. (2024). Influential factors of small and medium-sized enterprises growth across developed and developing countries: A systematic literature review. *International Journal of Engineering Business Management*. 16. doi:[10.1177/18479790241258097](https://doi.org/10.1177/18479790241258097)

FasterCapital. (2025). The role of agility in maintaining competitive advantage. *FasterCapital*. <https://fastercapital.com/content/The-Role-of-Agility-in-Maintaining-Competitive-Advantage.html>

Fatoki, O. (2014). The causes of the failure of new small and medium enterprises in South Africa. *Mediterranean journal of social sciences*, 5(20), 922-927.

Fessehaie, J., & Rustomjee, Z. (2018). Resource-based theory in the context of SMEs in developing economies. *Journal of Small Business Management*, 56(2), 215-238.

Figal Garone, L., Maffioli, A., de Negri, J.A., Rodriguez, C.M., Vazquez-Bare, G. (2015). Cluster development policy, SME's performance, and spillovers: evidence from Brazil. *Small Bus Econ* 44, 925–948. <https://doi.org/10.1007/s11187-014-9620-2>

Flick, U. (2018). *An introduction to qualitative research* (6th ed.). Sage Publications.

Fortune Business Insights. (2025). *South Africa furniture market size, share & COVID-19 impact analysis, by product type, by material, by category, by end-user, and by distribution channel, and country forecast, 2025–2032* (Report ID: FBI108569). <https://www.fortunebusinessinsights.com/south-africa-furniture-market-108569>

Fowowe, B. (2017). Access to finance and firm performance: Evidence from African countries. *Review of Development Finance*, 7(1), 6–17.

Frontier Consulting. (2025). *Challenges of collecting credible data in a multi-country study and how to resolve them when doing research in Africa*. Frontier Consulting.

<https://frontierconsulting.africa/challenges-of-collecting-credible-data-in-a-multi-country-study-and-how-to-resolve-them-when-doing-research-in-africa>

Fuertes, G., Alfaro, M., Vargas, M., Gutierrez, S., Ternero, R., & Sabattin, J. (2020). Conceptual framework for the strategic management: A literature review—Descriptive. *Journal of Engineering*, 2020, Article 6253013. <https://doi.org/10.1155/2020/6253013>

García-Fernández, M., Claver-Cortés, E., & Tarí, J. J. (2022). Relationships between quality management, innovation and performance: A systematic literature review. *European Research on Management and Business Economics*, 28(1), 100172. <https://doi.org/10.1016/j.iedeen.2021.100172>

Garrido-Moreno, A., Martín-Rojas, R., & García-Morales, V. J. (2024). The key role of innovation and organizational resilience in improving business performance: A mixed-methods approach. *International Journal of Information Management*, 77, 102777. <https://doi.org/10.1016/j.ijinfomgt.2024.102777>

Gcume, A., & Mohapeloa, T. (2025). Entrepreneurial Ecosystems Best Practices and Lessons amongst SMEs in BRICS Member Countries: A Systematic Literature Review. *Journal of BRICS Studies*, 4(1), 121-145.

Georgieva, S. (2020). Support for improving the international performance of small and medium-sized enterprises. *Economic Alternatives*, 1(1), 164-183.

Gerhart, B., & Feng, J. (2021). The Resource-Based View of the Firm, Human Resources, and Human Capital: Progress and Prospects. *Journal of Management*, 47, 1796-1819. <https://doi.org/10.1177/0149206320978799>

Ghobakhloo, M., & Azar, A. (2018). The impact of manufacturing on economic growth: A review of the literature. *Journal of Manufacturing Technology Management*, 29(4), 583-604.

Giang, H. T. N. H., Hai, T. H., Quyen, N. T. P., & Hoang, H. T. (2024). Beyond boundaries: Empowering family SMEs' international growth through digital platforms' architecture and governance. In *Proceedings of the 57th Hawaii International Conference on System Sciences*.

Giannarou, L., & Zervas, P. (2014). Using Delphi technique to build consensus in practice, *International Journal of Business Science & Applied Management (IJBSAM)*, ISSN 1753-0296, *International Journal of Business Science & Applied Management*, s.l., Vol. 9, Iss. 2. 65-82. <https://hdl.handle.net/10419/190657>

Gligor, D., Bozkurt, S., Russo, I., & Omar, A. (2018). A look into the past and future: theories within supply chain management, marketing and management. *Supply Chain Management: An International Journal*, 24(1), 170-186.

Goldman, S. L., Nagel, R. N., & Preiss, K. (1995). Agile competitors and virtual organizations: Strategies for enriching the customer. *Van Nostrand Reinhold*.

Gombár, M., Sira, E., Heckova, J., Písar, O., Chapcakova, A., & Kascakova, D. R. (2022). Cross-border mergers and acquisitions in manufacturing sector in the European area. *Entrepreneurship and Sustainability Issues*, 10(2), 115.

Gopaul, K. (2019, June). *South African production: important but no longer globally significant*. *Gold Focus*. Council. Retrieved from <https://www.gold.org/goldhub/gold-focus/2019/06/south-african-production-important-no-longer-globally-significant>

Government of South Africa. (2023). National Integrated Small Enterprise Development Strategy.

Govuzela, S. (2018). The contributions of organisational agility towards business performance within small and medium scale enterprises in Gauteng Province (Doctoral dissertation, Vaal University of Technology). *Vaal University of Technology*.

Govuzela, S., & Mafini, C. (2019). Organisational agility, business best practices and the performance of small to medium enterprises in South Africa. *South African Journal of Business Management*, 50(1), Article a1417. <https://doi.org/10.4102/sajbm.v50i1.1417>

Goyal, S., Grover, S. Advanced manufacturing technology effectiveness: A review of literature and some issues. *Front. Mech. Eng.* 7, 256–267 (2012). <https://doi.org/10.1007/s11465-012-0330-7>

Gramma-Vigouroux, S., & Royer, I. (2020). Impact des parties prenantes et de l'innovation collaborative sur la création de valeur des start-ups incubées : le cas des incubateurs d'affaires roumains. *Innovations*, 129-160. <https://doi.org/10.3917/inno.062.0129>.

Grammarly. (n.d.). *Grammarly: Grammar checker*. <https://www.grammarly.com/>

Grant, R. M. (1991). The resource-based theory of competitive advantage: Implications for strategy formulation. *California Management Review*, 33(3), 114-135.

Green, J., & Thorogood, N. (2005). Analysing qualitative data. *Principles of social research*, 75-89.

Guest, G., Namey, E., & Chen, M. (2020). A simple method to assess and report thematic saturation in qualitative research. *PLoS ONE*, 15(5), e0232076. <https://doi.org/10.1371/journal.pone.0232076>

Guetterman, T.C. (2015). Descriptions of Sampling Practices Within Five Approaches to Qualitative Research in Education and the Health Sciences. *Forum 16 1-25 Qualitative Social Research*, 16(2). <https://doi.org/10.17169/fqs-16.2.2290>.

Gumata, N., Ndou, E. (2020). The Rationale for Focusing on the Manufacturing Sector as an Important Driver of Growth, Missing Links and Existing Policy Gaps? In: *The Secular Decline of the South African Manufacturing Sector*. Palgrave Macmillan, Cham.

Gunasekaran, A. (1998). *Agile manufacturing: Enablers and an implementation framework*. *International Journal of Production Research*, 36(5), 1223–1247.

Gunasekaran, A., Subramanian, N., & Yusuf, Y. (2018). Strategies and practices for inclusive manufacturing: twenty-first-century sustainable manufacturing competitiveness. *International Journal of Computer Integrated Manufacturing*, 31(6), 490–493. <https://doi.org/10.1080/0951192X.2018.1463664>

Gunasekaran, A., Yusuf, Y.Y., Adeleye, E.O., Papadopoulos, T., Kovvuri, D. and Geyi, D.A.G. (2019) 'Agile manufacturing: an evolutionary review of practices', *International Journal of Production Research*, Vol. 57, Nos. 15–16, pp.5154–5174.

- Guo, L., & Xu, L. (2021). The Effects of Digital Transformation on Firm Performance: Evidence from China's Manufacturing Sector. *Sustainability*, 13(22), 12844. <https://doi.org/10.3390/su132212844>
- Gupta, M., & Jauhar, S. K. (2023). *Digital innovation: An essence for Industry 4.0. Thunderbird International Business Review*, 65(3), 279–292. <https://doi.org/10.1002/tie.22337>
- Gupta, R., Kumar, S., & Patel, V. (2023). The impact of regulatory frameworks on organizational agility: Evidence from emerging markets. *Emerging Markets Review*, 48, 101-115.
- Gurkov, I., & Filinov, N. (2022). Sailing through the storm – performance of Russian manufacturing subsidiaries of multinational corporations in the first year of the COVID-19 pandemic. *Post-Communist Economies*, 35(1), 1–16. <https://doi.org/10.1080/14631377.2022.2104503>
- Hakam, D. F., & Hakam, L. I. (2024). Sustainability in small and medium sized enterprises (SME) financing. *Development and Sustainability in Economics and Finance*, 2(4), 100031. <https://doi.org/10.1016/j.dsef.2024.100031>
- Haldane, A., Meyer, D., & Zheng, H. (2023). Resilient manufacturing in the digital era: Post-pandemic trends. *Journal of Manufacturing Systems*, 52, 132-145.
- Harraf, A., Wanasika, I., Tate, W. L., & Talbott, K. (2015). The role of agility in organizational survival and growth: Evidence from SMEs. *Business Horizons*, 58(3), 245-254.
- Harraf, A., Wanasika, I., Tate, K., & Talbott, K. (2015). Organizational Agility. *Journal of Applied Business Research (JABR)*, 31(2), 675–686. <https://doi.org/10.19030/jabr.v31i2.9160>
- Hashi, I., & Krasniqi, B.A. (2011). Entrepreneurship and SME growth: evidence from advanced and laggard transition economies. *International Journal of Entrepreneurial Behaviour & Research*, 17, 456-487.

- Hasson, F., Keeney, S., & McKenna, H. (2025). Revisiting the Delphi technique – Research thinking and practice: A discussion paper. *International Journal of Nursing Studies*, 168, 105119. <https://doi.org/10.1016/j.ijnurstu.2025.105119>
- Hattiangbire, D. T., & Harkal, P. (2022). Challenges and Future Prospects for the Indian MSME Sector: A Literature Review. *Journal of Management & Entrepreneurship*, 16(1), 2022.
- Helfat, C. E., & Peteraf, M. A. (2003). The Dynamic Resource-Based View: Capability Lifecycles. *Strategic Management Journal*, 24(10), 997–1010. <http://www.jstor.org/stable/20060594>
- Helfat, C. E., Finkelstein, S., Mitchell, W., Peteraf, M. A., Singh, H., Teece, D. J., & Winter, S. G. (2009). Dynamic capabilities: Understanding strategic change in organizations. *Blackwell Publishing*.
- Hennink, M. M., Kaiser, B. N., & Marconi, V. C. (2017). Code Saturation Versus Meaning Saturation: How Many Interviews Are Enough?. *Qualitative health research*, 27(4), 591–608. <https://doi.org/10.1177/1049732316665344>
- Hennink, M. M., Kaiser, B. N., & Marconi, V. C. (2019). *Focus group research: Understanding qualitative research*. Oxford University Press.
- Herrington, M., & Kew, P. (2018). Is there a change in attitude towards the small and medium business sector in South Africa? GEM Consortium.
- Higuchi, Y., Barnes, J., Black, A., & Otsuka, K. (2024). FDI, production networks and firm behaviour: Evidence from the South African automotive industry. *The World Economy*, 47, 1247–1273. <https://doi.org/10.1111/twec.13491>
- Hiratuka, C., & Sarti, F. (2017). Brazilian industry: recent performance and future challenges. In *The Brazilian Economy since the Great Financial Crisis of 2007/2008* (pp. 131-160). Cham: Springer International Publishing.
- Ahlin, E. M. (2019). Semi-structured interviews with expert practitioners: Their validity and significant contribution to translational research.

- Hsu, C. H., & Sandford, B. A. (2007). The Delphi technique: Making sense of consensus. *Practical Assessment, Research, and Evaluation*, 12(10), 1-8.
- Huang, Q., & Kumarasinghe, P. J. (2024). Unleashing global opportunities: Exploring the digitalization journey of small and medium-sized enterprises in China and Sri Lanka's thriving E-commerce landscapes. *Heliyon*, 10(17).
- Hunter, Desiree L., Tsegaye, Asrat, & Kapingura, Forget M. (2025). Manufacturing industry performance and stabilisation policies in South Africa. *South African Journal of Economic and Management Sciences*, 28(1), 1-12. <https://doi.org/10.4102/sajems.v28i1.5842>
- Idrissi, M., Manzani, Y., Maatalah, W., & Lissaneddine, Z. (2022). Organizational crisis preparedness during the COVID-19 pandemic: an investigation of dynamic capabilities and organizational agility roles. *International Journal of Organizational Analysis*. <https://doi.org/10.1108/ijoa-09-2021-2973>.
- Institute for Global Dialogue. (2024, October 22). *BRICS in a changing geopolitical landscape: South Africa and Russia's chairship in 2023 and 2024*. <https://igd.org.za/2024/10/22/brics-in-a-changing-geopolitical-landscape-south-africa-and-russias-chairship-in-2023-and-2024/>
- International Finance Corporation. (2019). *Why manufacturing matters: A value chain reaction*. International Finance Corporation.
- InterObservers. (2024, October 19). *The rising impact of lack of training: Consequences & solutions*. InterObservers. <https://interobservers.com/the-rising-impact-of-lack-of-training/>
- Iqbal, B. A. (2021). BRICS as a Driver of Global Economic Growth and Development. *Global Journal of Emerging Market Economies*, 14(1), 7-8. <https://doi.org/10.1177/09749101211067096>
- Isheloke, B. E. (2024). BRICS yesterday, today and tomorrow: unpacking the peculiarities going forward from South African perspective. *BRICS Journal of Economics*, 5(4), 139-164.
- Ismail, G., Taliip, N. (2023). The Delphi Method. In: Liamputtong, P. (eds) *Handbook of Social Sciences and Global Public Health*. Springer, Cham. https://doi.org/10.1007/978-3-030-96778-9_66-1

Ivanov, D., & Sokolov, B. (2018). The state of Russian manufacturing: Challenges and opportunities for innovation. *International Journal of Production Economics*, 198, 1-12.

Ivanova, L. (2022). The role of knowledge management in BRICS manufacturing. *Journal of Technology Management*, 45(5), 160-173.

Jaafar, M., Khan, K.N. & Salman, A. A systematic review and framework for organizational agility antecedents towards industry 4.0. *Manag Rev Q* (2025). <https://doi.org/10.1007/s11301-025-00489-6>

Jacobs, D. (2025). *The Role of COVID 19 on South African Small to Medium Enterprises*. University of Johannesburg (South Africa).

Jaiswal, A., Arun, C. J., & Varma, A. (2021). Rebooting employees: upskilling for artificial intelligence in multinational corporations. *The International Journal of Human Resource Management*, 33(6), 1179–1208. <https://doi.org/10.1080/09585192.2021.1891114>

Jalaja, L. (2022). Start Up Financing in India–Avenues and Challenges. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 19(2), 727-739.

Jalote, P., & Natarajan, P. (2019, November). *The growth and evolution of India's software industry*. *Communications of the ACM*, 62(11), 64–69. <https://doi.org/10.1145/3347863>

Jamshed S. (2014). Qualitative research method-interviewing and observation. *Journal of basic and clinical pharmacy*, 5(4), 87–88.

Jayasekara, B. E. A., Fernando, P. N. D., & Ranjani, R. P. C. (2020). A systematic literature review on business failure of small and medium enterprises (SME). *Journal of Management*, 15(1).

Jiang, Y., & Gu, J. (2023). *Technology and industrial transformation of China*. Springer.

Johnson, P. (2023). Mergers and Acquisitions in the Furniture Industry: A Strategic Analysis. *Global Business Review*, 24(3), 142-158.

Johnson, R., & Lee, K. (2017). The role of technology in India's pharmaceutical sector. *International Journal of Technology and Innovation*, 3(2), 56-68.

Jomon, T. K. (2024). Legal Frameworks and Regulatory Challenges in Fostering Sustainable Growth for Micro, Small, and Medium Enterprises (MSMEs): A Management Perspective. *Russian Law Journal*, 12(1), 2041-2046.

Jones, R. (2017). Defining expertise in Delphi studies: The role of experience in panel selection. *Journal of Professional Research*, 48(2), 210-221.

Jones, R., & Hunter, D. (2022). Defining consensus in Delphi studies: Setting thresholds for participant agreement. *Journal of Health and Social Research*, 28(3), 145-156.

Jones, T., & Lee, J. (2018). SME policy frameworks and their impact on economic development in Latin America. *Journal of Business and Policy Research*, 7(4), 275-290.

Jorm, A. (2025). *Using the Delphi method to establish expert consensus: A practical guide*. Palgrave Macmillan. <https://doi.org/10.1007/978-981-96-8357-4>

Kahveci, E. (2025). Digital Transformation in SMEs: Enablers, Interconnections, and a Framework for Sustainable Competitive Advantage. *Administrative Sciences*, 15(3), 107. <https://doi.org/10.3390/admsci15030107>

Kannan, D., Gholipour, P. & Bai, C. (2023). Smart manufacturing as a strategic tool to mitigate sustainable manufacturing challenges: a case approach. *Ann Oper Res* 331, 543–579. <https://doi.org/10.1007/s10479-023-05472-6>

Kaplan, D. E. (2015). The structure and performance of manufacturing in South Africa. *Structural Change and Industrial Development in the BRICS*, 244.

Kato, A. I., Chiloane-Tsoka, E. G., & Mugambe, P. (2024). Unlocking the potential: the influence of sustainable finance solutions on the long-term sustainability of small and medium-sized enterprises. *Cogent Business & Management*, 11(1). <https://doi.org/10.1080/23311975.2024.2391122>

Kaur, S.P., Kumar, J. & Kumar, R. (2017). The Relationship Between Flexibility of Manufacturing System Components, Competitiveness of SMEs and Business Performance: A

Study of Manufacturing SMEs in Northern India. *Glob J Flex Syst Manag* **18**, 123–137.
<https://doi.org/10.1007/s40171-016-0149-x>

Keeney, S., McKenna, H., & Hasson, F. (2018). *The Delphi technique in nursing and healthcare research* (3rd ed.). Wiley-Blackwell.

Kettunen, P. (2009). Adopting key lessons from agile manufacturing to agile software product development—A comparative study. *Technovation*, *29*(6-7), 408-422.

Khalil, S., & Belitski, M. (2018). Information technology governance, agility and organizational performance in European SMEs. In *Academy of Management Proceedings* (Vol. 2018, No. 1, p. 18678). Briarcliff Manor, NY 10510: Academy of Management.

Khan, A., Ahmed, S., & Ali, R. (2023). *The role of organizational structure in fostering agility in small and medium-sized enterprises (SMEs)*. *International Journal of Small Business and Entrepreneurship*, *41*(2), 124-138.

Khokhar, I. (2024, April 26). *Agile Organization: Characteristics and Key Elements*. StarAgile. <https://staragile.com/blog/agile-organization>

Khoza, Sizwe, Mafini, Chenedzai, & Okoumba, Welby V. Loury. (2022). Lean practices and supply-chain competitiveness in the steel industry in Gauteng, South Africa. *South African Journal of Economic and Management Sciences*, *25*(1), 1-14. <https://doi.org/10.4102/sajems.v25i1.4617>

Kiers, J., & Van Der Werff, J. H. (2019). The future of work requires a future of professional learning: From stand-alone, academic MOOCs to programmes that are relevant for professionals. In C. Mongenet, T. Staubitz, J. A. Ruiperez-Valiente, G. Shimshon, M. Reich, J. Kloos, & C. M. (Eds.), *CEUR Workshop Proceedings: 2019 Work in Progress Papers of the Research, Experience and Business Tracks at EMOOCs, EMOOCs-WIP 2019; Naples; Italy; 20 May 2019 through 22 May 2019* (Vol. 2356, pp. 247-253). (CEUR Workshop Proceedings). CEUR-WS. <https://research.tudelft.nl/en/publications/the-future-of-work-requires-a-future-of-professional-learning-fro>

Kiiru, G. W. (2015). *Dynamic capabilities, strategic orientation and competitive advantage of small and medium-retail enterprises in Kenya* (Doctoral dissertation).

Kindström, D., Carlborg, P., & Nord, T. (2024). Challenges for growing SMEs: A managerial perspective. *Journal of Small Business Management*, 62(2), 700–723. <https://doi.org/10.1080/00472778.2022.2082456>

King, N. (2004). Using templates in the thematic analysis of text. In C. Cassell & G. Symon (Eds.), *Essential guide to qualitative methods in organizational research* (pp. 256-270). Sage.

Kiranantawat, B., & Ahmad, S. Z. (2023). Conceptualising the relationship between green dynamic capability and SME sustainability performance: the role of green innovation, organisational creativity and agility. *International Journal of Organizational Analysis*, 31(7), 3157-3178.

Kjellström, S., Stålné, K., & Törnblom, O. (2020). Six ways of understanding leadership development: An exploration of increasing complexity. *Leadership*, 16(4), 434-460. <https://doi.org/10.1177/1742715020926731>

Klenke, K. (2016). *Qualitative research in the study of leadership*. Emerald Group publishing limited.

Kő, A., Mitev, A., Kovács, T., Fehér, P. & Szabó, Z. (2022). Digital Agility, Digital Competitiveness, and Innovative Performance of SMEs. *Journal of Competitiveness*, 14(4), 78–96. <https://doi.org/10.7441/joc.2022.04.05>

Koivu, J., & Hinze, J. (2022). Case study methodology in qualitative research: Selecting relevant cases for analysis. *Qualitative Research Journal*, 25(4), 78-91.

Kolev, K., Dykes, B., Kang, S., Hughes-Morgan, M., & Ferrier, W. (2024). Fast or slow? A meta-analysis on the performance implications of decision, implementation, and response speed. *Journal of Management Scientific Reports*. <https://doi.org/10.1177/27550311241291976>.

- Koo, M., & Yang, S.-W. (2025). Likert-Type Scale. *Encyclopedia*, 5(1), 18. <https://doi.org/10.3390/encyclopedia5010018>
- Kovalenko, O., Zavyalova, L., & Krotov, S. (2023). Regulatory challenges for SMEs in Russia: A case study. *Journal of Eastern European Business*, 14(3), 127-141.
- Kozlenkova, I.V., Samaha, S.A. & Palmatier, R.W. Resource-based theory in marketing. *J. of the Acad. Mark. Sci.* 42, 1–21 (2014). <https://doi.org/10.1007/s11747-013-0336-7>
- KPMG China. (2024, May 29). *China Economic Monitor: Q2 2024* [PDF]. KPMG. <https://assets.kpmg.com/content/dam/kpmg/cn/pdf/en/2024/05/china-economic-monitor-q2-2024.pdf>
- Kraaijenbrink, J., Spender, J. C., & Groen, A. J. (2010). The resource-based view: A review and assessment of its critiques. *Journal of Management*, 36(1), 349-372. <https://doi.org/10.1177/0149206309350775>
- Kraja, A., & Osmani, N. (2015). Challenges faced by SMEs in the Balkans. *Journal of Business Economics*, 43(6), 432-445.
- Kumar, A., & Raghavan, V. (2023). Policy frameworks for SME development in India: Lessons for South Africa. *Journal of Business Research*, 52(3), 112-125.
- Kumar, A., & Singh, P. (2020). Adoption of CAD/CAM technologies in Indian furniture manufacturing: A study of current practices. *Journal of Manufacturing Systems*, 54, 10-20.
- Kumar, A., & Singh, P. (2023). Venture capital and the development of entrepreneurial ecosystems in emerging markets. *Venture Capital*, 25(1), 41-67.
- Kumar, R., & Arora, V. (2015). Trade complementarity between India and BRICS. *JIMS8M: The Journal of Indian Management & Strategy*, 20, 37-42.
- Kumar, S., & Singh, P. (2023). An analysis of government support programs for small business development and growth. *Scholedge International Journal of Business Policy & Governance*, 10(2), 8–19. <https://dx.doi.org/10.19085/sijbpg100201>

- Latam, E. (2024). *A comprehensive analysis of foreign direct investment in Brazil: Unlocking economic potential*. LATAM FDI. <https://latamfdi.com/foreign-direct-investment-in-brazil/>
- Leal, T. (2024, February 8). *South Africa and Brazil: Infrastructure market trends*. LinkedIn. <https://www.linkedin.com/pulse/south-africa-brazil-infrastructure-market-kexqe/>
- Leboea, S. T. (2017). *The factors influencing SME failure in South Africa*. (Thesis). University of Cape Town, Faculty of Commerce, Research of GSB. <http://hdl.handle.net/11427/25334>
- Leedy, P. D., & Ormrod, J. E. (2019). *Practical research: Planning and design* (12th ed.). Pearson Education.
- Lekhanya LM. (2015). Key internal factors affecting the small, medium and micro enterprises (SMMEs) marketing strategies in rural South Africa. *Problems and Perspectives in Management* 13(2):411-417
- Lekhanya L.M. (2016). *Determinants of survival and growth of small and medium enterprises in rural KwaZulu-Natal*. Faculty of Economics and Management Sciences, University of the Western Cape. South Africa. (PhD thesis)
- Leong, G. K., Yu, Y., & Kim, M. (2016). Enhancing organizational agility in small and medium-sized enterprises: A resource-based view perspective. *International Journal of Operations & Production Management*, 36(2), 105-121.
- Li, L. (2018). China's manufacturing locus in 2025: With a comparison of “Made-in-China 2025” and “Industry 4.0”. *Technological Forecasting and Social Change*, 135, 66-74.
- Li, L. (2022). Reskilling and upskilling the future-ready workforce for Industry 4.0 and beyond. *Information Systems Frontiers*, 26(5), 1697–1712. <https://doi.org/10.1007/s10796-022-10308-y>
- Li, Q., Liu, X., & Zhi, Y. (2020). Challenges facing China’s manufacturing industry: Technological and structural barriers. *Journal of Industrial Management*, 54(6), 112–122.
- Li, Z., & Chen, J. (2021). China’s open-door policy: Implications for foreign investment and sustainability. *Asian Economic Policy Review*, 16(3), 283-298.

- Lichtman, M. (2006). *Qualitative research in education: A user's guide*. SAGE Publications.
- Liedtke, S. (2019, April. 11). SME sector critical to growing South Africa's economy – Pityana. Engineering News. <https://www.engineeringnews.co.za/article/sme-sector-criticalto-growing-south-africas-economy-pityana-2019-04-11>
- Lima, P. F. de A., Crema, M., & Verbano, C. (2020). Risk management in SMEs: A systematic literature review and future directions. *European Management Journal*, 38(1), 78–94. <https://doi.org/10.1016/j.emj.2019.06.005>
- Lin, M., Zhang, Z., & Cao, Y. (2019). Forecasting supply and demand of the wooden furniture industry in China. *Forest Products Journal*, 69(3), 228-238.
- Liu, S., Lu, Y., Shen, X., & Bao, J. (2023). A digital thread-driven distributed collaboration mechanism between digital twin manufacturing units. *Journal of Manufacturing Systems*, 68, 145–159. <https://doi.org/10.1016/j.jmsy.2023.02.014>
- Lu, H., & Shaharudin, M. S. (2024). Role of digital transformation for sustainable competitive advantage of SMEs: a systematic literature review. *Cogent Business & Management*, 11(1). <https://doi.org/10.1080/23311975.2024.2419489>
- Lutwama, P., Dlulane, M., Pillay, T., Hassan, F., & Grobbelaar, S. (2024). AGILE: ADVANTAGES, DISADVANTAGES, ENABLERS, AND BARRIERS. *The South African Journal of Industrial Engineering*, 35(4), 66–76. <https://doi.org/10.7166/35-4-3058>
- Madhani, P. M. (2010). Resource-based view (RBV) of competitive advantage: Insights from an alternative perspective. *Journal of Indian Business Research*, 2(4), 1-14. *practices* (pp. 3–22). <https://ssrn.com/abstract=1578704>
- Madzivhandile, L., & Dlamini, N. (2015). Challenges facing small and medium enterprises in the South African manufacturing sector. *African Journal of Economic and Management Studies*, 6(1), 76-88.
- Magacho, G., Marconi, N., & Rocha, I. (2019). Leading sectors and structural dynamics: an input-output analysis contrasting the BRICs growth paths. *Brazilian Keynesian Review*. <https://doi.org/10.33834/BKR.V4I2.127>.

- Majozi, N. (2024). *A framework for facilitating bank funding of black SMEs in South Africa* (Master's thesis, University of the Witwatersrand, Johannesburg (South Africa)).
- Maladzi, W. R. (2012). *Analysis of innovative leadership and sustainability of SMEs in the Western Cape Province, South Africa* (Doctoral dissertation, Cape Peninsula University of Technology).
- Malepe, N. (2014). *How's business? Manufacturing small, medium and micro enterprises (SMMEs') contributions to the formal sector employment in Gauteng and the Western Cape between 2007 AND 2013* (Doctoral dissertation, Stellenbosch: Stellenbosch University).
- Mandurnekar, A. A. (2024, June 24). *Manufacturing 4.0: India's AI-powered industrial revolution*. Invest India. Retrieved August 1, 2025, from <https://www.investindia.gov.in/blogs/manufacturing-40-indias-ai-powered-industrial-revolution>
- Manzoor, F., Wei, L., & Sahito, N. (2021, March 8). *The role of SMEs in rural development: Access of SMEs to finance as a mediator*. **PLOS ONE**, **16**(3), e0247598. <https://doi.org/10.1371/journal.pone.0247598>
- Marconi, N., Rocha, I. L., & Magacho, G. R. (2016). Sectoral capabilities and productive structure: An input-output analysis of the key sectors of the Brazilian economy. *Brazilian Journal of Political Economy*, *36*, 470-492.
- Martins, A.; Branco, M.C.; Melo, P.N.; Machado, C. (2022). Sustainability in Small and Medium-Sized Enterprises: A Systematic Literature Review and Future Research Agenda. *Sustainability* 2022, *14*, 6493. <https://doi.org/10.3390/su14116493>
- Mashavira N, Guvuriro S, Chipunza C. Driving SMEs' Performance in South Africa: Investigating the Role of Performance Appraisal Practices and Managerial Competencies. *Journal of Risk and Financial Management*. 2022; 15(7):283.
- Matikiti, E. (2024). *Enhancing resilience in South African small and medium enterprises: a dynamic capabilities perspective*. (). University of Cape Town ,Faculty of Commerce ,Graduate School of Business (GSB). Retrieved from <http://hdl.handle.net/11427/41118>

Maximova, V. (2021). *Agile organisations – Features and agility enablers*. Съюз на учените - Варна. <https://www.cceol.com/search/article-detail?id=1002532>

Maziriri, E. T. (2020). Green Packaging and Green Advertising as Precursors of Competitive Advantage and Business Performance among Manufacturing Small and Medium Enterprises in South Africa. *Cogent Business & Management*, 7(1), Article ID: 1719586. <https://doi.org/10.1080/23311975.2020.1719586>

Mazorodze, N. (2020). The state of South African manufacturing SMEs: Key challenges and opportunities. *Manufacturing Business Review*, 15(2), 67-79.

Mbatha, N., & Ngibe, M. (2017). Factors affecting financial stability of small and medium enterprises: A case study of emerging markets. *Risk governance & control: financial markets & institutions*, 7(1).

McAdam, R., Hazlett, S., & McKeown, M. (2018). Digital transformation in SMEs: Enabling agile business strategies. *Technological Forecasting and Social Change*, 134, 1-10.

McKeever, M. (2024). Social stratification and inequality in South Africa. *Sociology Compass*, 18(2), e13173.

McMillan, J. H., & Schumacher, S. (2010). *Research in education: Evidence-based inquiry* (7th ed.). Pearson Education.

Mehta AM, Qazi SZ, Haque R, S Senathirajah ARb, Baig W, Sajjad R, et al. (2025) Strategic planning as a catalyst for sustainability: A mediated model of strategic intent and formulation in manufacturing SMEs. *PLoS One* 20(6): e0325887. <https://doi.org/10.1371/journal.pone.0325887>

Mena, C., Karatzas, A., & Hansen, T. (2022). Geopolitical disruptions in global supply chains: A systematic review. *Journal of Operations Management*, 68(4), 123-140.

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation* (2nd ed.). Jossey-Bass.

- Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative Research: A Guide to Design and Implementation* (4th ed.). San Francisco, CA: Jossey-Bass.
- MerSETA. (2017). Skills development and employment in South African manufacturing. *Manufacturing Skills Journal*, 29(5), 35–50.
- MerSETA. (2017). South African manufacturing: Challenges and solutions for job creation. *South African Manufacturing Journal*, 21(3), 125-138.
- Miceli, A., Hagen, B., Riccardi, M. P., Sotti, F., & Settembre-Blundo, D. (2021). Thriving, not just surviving in changing times: How sustainability, agility and digitalization intertwine with organizational resilience. *Sustainability*, 13(4), 2052.
- Mijiyawa, A. G. (2017). Drivers of structural transformation: The case of the manufacturing sector in Africa. *World Development*, 99, 141–159. <https://doi.org/10.1016/j.worlddev.2017.07.007>
- Miles, M. B., Huberman, A. M., & Saldana, J. (1994). *Qualitative data analysis: A methods sourcebook* (2nd ed.). SAGE Publications.
- Mingliang, X. (2024). Analysis Of Retrospective Trends In The Competitiveness Of Chinese Furniture Industry Enterprises. *Прогрессивная экономика*, (10), 242-250.
- Ministry of MSME, Government of India. (2023). Definition of small and medium enterprises in India. *Ministry of MSME Report, 2023*.
- Mishra, A., Abdalhamid, S., Mishra, D., Ostrovska, S. (2021). Organizational issues in embracing Agile methods: an empirical assessment. *Int J Syst Assur Eng Manag* 12, 1420–1433 (2021). <https://doi.org/10.1007/s13198-021-01350-1>
- Mishra, N., Sharma, V. (2025). Emerging and Disruptive Technologies in Entrepreneurship for Global Societies. In: Arezki, S., Ouaisa, M., Ouaisa, M., Krichen, M., Nayyar, A. (eds) *Emerging Disruptive Technologies for Society 5.0 in Developing Countries*. Advances in Science, Technology & Innovation. Springer, Cham. https://doi.org/10.1007/978-3-031-63701-8_5

Mkhize, M., & Dube, A. (2020). Advancing automotive production in South Africa: Technological innovation challenges. *Journal of South African Manufacturing*, 58(2), 127-139.

Mofokeng, S. A., Chinomona, E. and Mafini, C. (2023) “Internal Drivers of Innovation and Sustainability in South African Manufacturing Small and Medium Enterprises”, *African Journal of Inter/Multidisciplinary Studies*, 5(1), pp. 1–14. doi: <http://doi.org/10.51415/ajims.v5i1.1075>.

Mohamed, S., & Fine, B. (2025). Post-apartheid South Africa: A Neoliberal Disaster Made and in the Making. In *Trajectories of Declining and Destructive Capitalism* (pp. 141-167). Emerald Publishing Limited.

Molekoa, T. (2009). *Organisational agility: How business can survive and thrive in turbulent times* (sponsored by EMC). Economist Intelligence Unit. [Organisational agility How business can.pdf](#)

Morceiro¹, P. C. (2018). Evolution and sectoral competitiveness of the Brazilian manufacturing industry. *The Oxford handbook of the Brazilian economy*, 12.

Morgan, H. (2022). Conducting a Qualitative Document Analysis. *The Qualitative Report*, 27(1), 64-77. <https://doi.org/10.46743/2160-3715/2022.5044>

Moser, A., & Korstjens, I. (2018). Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. *European journal of general practice*, 24(1), 9-18.

Mousa, K. M., Ali, K. A. A., & Gurler, S. (2024). Strategic Planning and Organizational Performance: An Empirical Study on the Manufacturing Sector. *Sustainability*, 16(15), 6690. <https://doi.org/10.3390/su16156690>

Moyo, S., & Mpofu, F. (2024). Factors Determining Use Of International Financial Reporting Standards For Small To Medium Size Entities (IFRS For SMEs) In Zimbabwe. *Journal of Management: Small and Medium Enterprises (SMEs)*, 17(3), 901-916. <https://doi.org/10.35508/jom.v17i3.18506>

Moyo, T., Ndlovu, T., & Khumalo, L. (2022). Challenges facing the South African manufacturing sector: A focus on SMEs. *South African Journal of Business Economics*, 24(4), 72-85.

Msomi, M., Ngibe, L., & Nyide, J. (2019). Overcoming challenges in South African manufacturing SMEs. *South African Business Review*, 18(1), 56-67.

Msomi, T. S., & Olarewaju, O. M. (2021). Factors affecting small and medium enterprises' financial sustainability in South Africa. *African Journal of Inter/Multidisciplinary Studies*, 3(1), 103–117. <https://doi.org/10.51415/ajims.v3i1.893>

[Muduli, A.](#) (2016), "Exploring the facilitators and mediators of workforce agility: an empirical study", *Management Research Review*, Vol. 39 No. 12, pp. 1567-1586. <https://doi.org/10.1108/MRR-10-2015-0236>

Muduli, A., & Pandya, S. (2018). The impact of organizational agility on business performance in volatile markets. *Management Decision*, 56(4), 799-815.

Mukherjee, S., & Choudhury, P. (2022). Deepening BRICS collaboration in R&D and innovation. *Journal of International Business and Technology*, 31(3), 75-89.

Murithi (2020). Role of Venture Capital Funding on the Performance of Small and Medium-Sized Enterprises (SMEs) in Nigeria. *Journal of Business Strategy*, 9, 211-225

Musa, S., & Enggarsyah, D. T. (2025). Absorptive capacity, organizational creativity, organizational agility, organizational resilience and competitive advantage in disruptive environments. *Journal of Strategy and Management*, 18(2), 303-325.

Musheke, M., & Phiri, J. (2021). The Effects of Effective Communication on Organizational Performance Based on the Systems Theory. *Open Journal of Business and Management*, 9, 659-671. <https://doi.org/10.4236/ojbm.2021.92034>

Musiita, B., Turyareeba, D., Mugambe, K., Wamala, A., & Jeke, L. (2023). Governance and the Manufacturing Sector Growth among the BRICS Nations. *Journal of Economics and Behavioral Studies*, 15(3), 22-33. [https://doi.org/10.22610/jebs.v15i3\(J\).3633](https://doi.org/10.22610/jebs.v15i3(J).3633)

Nach, M., & Ncwadi, R. (2024). BRICS economic integration: Prospects and challenges. *South African Journal of International Affairs*, 31(2), 151–166.
<https://doi.org/10.1080/10220461.2024.2380676>

Nafei, W. A. (2016). Organizational agility: The key to organizational success. *International Journal of Business and Management*, 11(5), 296-309.

Naicker, V., Le Roux, S., Bruwer, J., & Bruwer, J. P. (2017). Knowledge sharing as a value-adding initiative for South African SMME sustainability: A literature review. *Expert Journal of Business and Management*, 5(2), 51-60.

Naisola-Ruiter, V. (2022). The Delphi technique: A tutorial. *Research in Hospitality Management, Taylor & Francis Group*. 12(1), 91–97.
<https://doi.org/10.1080/22243534.2022.2080942>

Naradda Gamage, S. K., Ekanayake, E., Abeyrathne, G., Prasanna, R., Jayasundara, J., & Rajapakshe, P. (2020). A Review of Global Challenges and Survival Strategies of Small and Medium Enterprises (SMEs). *Economies*, 8(4), 79.
<https://doi.org/10.3390/economies8040079>

National Bureau of Statistics of China. (2023). *China's SME Failure Rates in Manufacturing*. National Bureau of Statistics of China.

National Small Business Chamber (NSBC). (2022). *SME Failures in South Africa: 2022 Report*. National Small Business Chamber.

Ndlovu, E. (2019). *The role of entrepreneurial orientation and organisational learning capabilities on SME performance* (Mini Dissertation). Gordon Institute of Business Science, University of Pretoria.

Needham, B., & de Loë, R. (1990). Panel size in Delphi studies: A review and recommendations for best practices. *Journal of Research Methods*, 18(1), 10-20.

- Neubert, M. (2019). Funding innovations for sustainable growth in emerging markets. *International Journal of Economics and Finance*, 11(4).
- Ngibe, M., & Lekhanya, L. M. (2019). Innovative leadership in South African manufacturing small medium enterprises within KwaZulu-Natal. *Journal of Contemporary Management*, 16(2), 300-330.
- Ngibe, M., Lekhanya, L. M., & Garbharran, H. L. (2019). Innovative leadership characteristics of manufacturing SMEs in KwaZulu-Natal. *International Journal of Entrepreneurship*, 23(4), 1-12.
- Ngo Ndjama, J. D., & Van Der Westhuizen, J. (2024). The role of small, medium, and micro enterprises in contributing to the socioeconomic development of South Africa. *International Journal of Research in Business & Social Science*, 13(7).
- Nguyen, T., & Lee, K. (2021). Integrating sustainability into corporate strategy: A framework for growth. *International Journal of Business Strategy*, 39(2), 98-110.
- Nguyen, T., Le, C.V., Nguyen, M. *et al.* The organisational impact of agility: a systematic literature review. *Manag Rev Q* (2024).
- Ngwenya, M. (2022). The contribution of SMEs to South Africa's GDP and employment: An analysis of trends and challenges. *South African Journal of Economics*, 90(2), 219-233.
- Nieuwenhuizen, C. (2019) The effect of regulations and legislation on small, micro and medium enterprises in South Africa, *Development Southern Africa*, 36:5, 666-677, <https://doi.org/10.1080/0376835X.2019.1581053>
- Njenge, Y. L. (2021). *Influence of external funders on social enterprise business models: a causation-effectuation exploratory study* (Doctoral dissertation, University of the Witwatersrand, Johannesburg).
- Nkoana, I., & Mashamaite, K. A. (2025). Proliferation of SMEs in South Africa: modelling the challenges and outcomes of selling-to-finish. *International Journal of Business Ecosystem & Strategy* (2687-2293), 7(3), 69–78. <https://doi.org/10.36096/ijbes.v7i3.796>

- Nkurunziza, A. (2023, May 8). *Enhancing organizational agility to sustain firm competitiveness during turbulent times*. Westford University College. <https://www.westfordonline.com/blogs/enhancing-organizational-agility-to-sustain-firm-competitiveness/>
- Nnaji, U., Benjamin, L., Eyo-Udo, N., & Etukudoh, E. (2024). Effective cost management strategies in global supply chains. *International Journal of Applied Research in Social Sciences*, 6(5), 945–953. <https://doi.org/10.51594/ijarss.v6i5.1146>
- Noshad, M., Amjad, M., Shafiq, M. N., & Gillani, S. (2019). Performance and Obstacles of SMEs: An Empirical Evidence from BRICS Countries. *IRASD Journal of Economics*, 1(2), 113–131. <https://doi.org/10.52131/joe.2019.0101.0010>
- Noshad, S., Amjad, M. (2019). The role of small and medium-sized enterprises (SMEs) in BRICS economies. *International Journal of Emerging Markets*, 14(3), 324-338.
- Nowell, L. S., Norris, J. M., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, 16(1), 1-13. <https://doi.org/10.1177/1609406917733847>
- Nuttall, J., & Coppin, P. (2023). *Nurturing SMMEs: An evaluation of the SMME support landscape in South Africa* (No. 1/2023). SA Cities Network. <https://www.sacities.net/wp-content/uploads/2023/11/Nurturing-SMMEs-An-Evaluation-of-the-SMME-Support-Landscape-in-South-Africa.pdf>
- Nwankwo, C., & Chendo, N. A. (2023). Understanding entrepreneurship origin and process. *Scholars Journal of Economics, Business and Management*, 10, 29–38. <https://doi.org/10.36347/sjebm.2023.v10i02.001>
- O’Neil, J. (2023, August). BRICS economic outlook: 2023 update. *Global Economic Review*. <https://www.globaleconomicreview.com/BRICS2023>
- Odoh, Dr. M., & Chinedum E, Dr. I. (2014). Research Designs, Survey and Case Study. *IOSR Journal of VLSI and Signal Processing*, 4(6), 16–22. <https://doi.org/10.9790/4200-04611622>

OECD (2008), *Enhancing the Role of SMEs in Global Value Chains*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264051034-en>.

OECD (2020b), *SME and Entrepreneurship Policy in Brazil 2020*, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, Paris, <https://doi.org/10.1787/cc5feb81-en>.

OECD. (2018a). Financing challenges and opportunities for small and medium-sized enterprises. *OECD Economic Studies*, 54(2), 103-115.

https://doi.org/10.1787/fin_sme_ent-2018-en

OECD. (2018b). *SME and entrepreneurship policies in Brazil: An analysis of institutional frameworks and regulations*. OECD Economic Surveys: Brazil, 2018(6), 1-82.

OECD. (2020a). *SME and Entrepreneurship Policy in Brazil 2020*. OECD Studies on SMEs and Entrepreneurship. OECD Publishing, Paris.

OECD. (2022). Strengthening economic ties within BRICS countries through industrial cooperation. *OECD Report on Economic Integration*.

Ofori-Baafi, P. K., & Opoku, M. O. (2024). Resource-based view factors driving SME growth: A systematic review. *International Journal of Management and Organization (IJMO)*, 2(4), 56–77. <https://doi.org/10.30209/IJMO.202402.013>

Ogujiuba, K. K., Eggink, M., & Olamide, E. (2023). Impact of Elements of Finance and Business Support on the SME Business Ecosystem in South Africa: An Econometric Analysis. *Sustainability*, 15(11), 8461. <https://doi.org/10.3390/su15118461>

Olsen, A. A., Wolcott, M. D., Haines, S. T., Janke, K. K., & McLaughlin, J. E. (2021). *How to use the Delphi method to aid in decision making and build consensus in pharmacy education*. *Currents in Pharmacy Teaching and Learning*, 13(10), 1376–1385. <https://doi.org/10.1016/j.cptl.2021.07.018>

Ong, J. W., & Ismail, H. B. (2008). Sustainable competitive advantage through information technology competence: resource-based view on small and medium enterprises. *Communications of the IBIMA*, 1(7), 62-70.

Organisation for Economic Co-operation and Development (OECD). (2020b). *International Compendium of Entrepreneurship Policies*. OECD Studies on SMEs and Entrepreneurship. OECD Publishing, Paris.

Orhan, E. (2022). The effects of the Russia-Ukraine war on global trade. *Journal of International Trade, Logistics and Law*, 8(1), 141-146.

Osman, C., Twum, F. O., Owusu, J., & Boateng, P. A. (2025). System dynamics of organizational agility in response to technological disruptions. *IOSR Journal of Business and Management (IOSR-JBM)*, 27(3, Ser. 8), 32–40.

Oxley, E., Nash, H. M., & Weighall, A. R. (2025). Consensus building using the Delphi method in educational research: A case study with educational professionals. *International Journal of Research & Method in Education*, 48(1), 29–43

<https://doi.org/10.1080/1743727X.2024.2317851>

Oxyzo. (2024). *Funding and financial support for SMEs in the 2024 Budget*. Oxyzo. <https://www.oxyzo.in/blogs/funding-and-financial-support-for-smes-in-the-2024-budget/120220>

Pacor, G. (2025, February 17). What is the workforce agility advantage? Here's what you need to know. *Australian Industry Group*. <https://www.aigroup.com.au/resourcecentre/resourcecentre-blogs/hr-blogs/what-is-the-workforce-agility-advantage-heres-what-you-need-to-know/>

Padhi, A. (2022). The decline of the US manufacturing industry has contributed to rising inequality and hurt the country's global competitiveness—a revitalization could contribute to sustainable and inclusive growth. McKinsey & Company. <https://www.mckinsey.com/capabilities/operations/our-insights/want-to-drive-inclusive-economic-growth-start-with-manufacturing>

Pascual, A., Zhang, X., & Li, H. (2019). SMEs and their role in fostering sustainable growth. *Economic Development Journal*, 27(2), 88–102.

Patel, D., Sharma, N., & Kumar, V. (2023). Fostering collaboration in entrepreneurial ecosystems: The role of public-private partnerships. *International Journal of Entrepreneurial Behaviour & Research*, 29(5), 618-635.

Patel, R., & Kumar, S. (2022). Measuring sustainable growth: A multidimensional approach. *Journal of Sustainable Development*, 15(1), 45-59.

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). SAGE Publications.

Perwez, S. K., Vijayalakshmi, G., & Perwaiz, S. Z. (2016). Make in India initiative: Reigniting Indian manufacturing sector. *Global Journal of Management and Business Research: B Economics and Commerce*, 16(1), 1–7. Global Journals Inc. (USA).

Peteraf, M. (2018). Resource-based theories. *The Palgrave encyclopedia of strategic management* (pp. 1454-1457). Palgrave Macmillan, London.

Petrov, N., & Sokolov, M. (2020). Innovation and entrepreneurship in Russia: The Skolkovo initiative. *Journal of Eastern European Business*, 20(1), 91-104.

Plano-Clark, V. L., Ivankova, N. V., & Yang, N. (2023). Frameworks for conceptualizing mixed methods research. In R. J. Tierney, F. Rizvi, & K. Ercikan (Eds.), *International Encyclopedia of Education* (4th ed., 390-401). Elsevier. <https://doi.org/10.1016/B978-0-12-818630-5.11038-3>

Plotnikov, V., & Vertakova, J. (2014). Manufacturing industry in Russia: Problems, status, prospects. *Procedia Economics and Finance*, 14, 613–622. [https://doi.org/10.1016/S2212-5671\(14\)00739-4](https://doi.org/10.1016/S2212-5671(14)00739-4)

Poolton, J., Ismail, H. S., Reid, I. R., & Arokiam, I. C. (2006). Agile marketing for the manufacturing-based SME. *Marketing Intelligence & Planning*, 24(7), 681-693.

Prabhakar, A. C. (2024). India's manufacturing sector performance and job-oriented sustainable economic growth: a comprehensive analysis. *International Journal of Academic Research in Business and Social Sciences*, 14(8).

- Prajapati, P., Guo, R., Cai, A., & Prasad, R. (2025). Navigating the energy transition in India: Challenges and opportunities towards sustainable energy goal. *Water-Energy Nexus*. <https://doi.org/10.1016/j.wen.2025.07.004>
- Prasannath, V., Adhikari, R. P., Gronum, S., & Miles, M. P. (2024). Impact of government support policies on entrepreneurial orientation and SME performance. *International entrepreneurship and management journal*, 20(3), 1533-1595.
- Pundziene, A., & Geryba, L. (2023). Managing technological innovation: Dynamic capabilities, collaborative innovation, and born-digital SMEs' performance. *IEEE Transactions on Engineering Management*, 71, 6968-6981.
- PwC South Africa. (2024). *PwC's South Africa Manufacturing Analysis 2024*. PwC. <https://www.pwc.co.za/en/publications/manufacturing-analysis.html>
- PwC South Africa. (2024). *Manufacturing Analysis 2024: Resolute. Resilient. Adaptable*. <https://www.pwc.co.za/en/press-room/manufacturing-analysis.html>
- Qalati, S. A., Barbosa, B., & Iqbal, S. (2023). The effect of firms' environmentally sustainable practices on economic performance. *Economic Research-Ekonomska Istraživanja*, 36(3). <https://doi.org/10.1080/1331677X.2023.2199822>
- Qi, B., McCauley, E., Baxter, K., Poo, M. C.-P., & Lau, Y.-y. (2025). A Manufacturing Industry Perspective on Pandemic-Induced Supply Chain Disruptions. *Businesses*, 5(1), 8. <https://doi.org/10.3390/businesses5010008>
- Qi, Q., Tao, F., Hu, T., Anwer, N., Liu, A., Wei, Y., Wang, L., & Nee, A. Y. C. (2021). Enabling technologies and tools for digital twin. *Journal of Manufacturing Systems*, 58(Part B), 3–21. <https://doi.org/10.1016/j.jmsy.2019.10.001>
- Raghavan, A. (2023). BRICS contribution to global GDP: A closer look. *BRICS Economic Report*, 2023.

Rahman P, M., Akhtar, S., Babar Khan, S., Khan, M., & Afjal, M. (2025). Driving efficiency through innovation: exploring dynamic capabilities in Indian manufacturing small and medium scale enterprise. *Cogent Business & Management*, 12(1), 2485402.

Rahman, M. M., & Howlader, M. S. (2022). The impact of research and development expenditure on firm performance and firm value: Evidence from a South Asian emerging economy. *Journal of Applied Accounting Research*, 23(4), 825-845.

Raihan, A. (2024). A review of the potential opportunities and challenges of the digital economy for sustainability. *Innovation and Green Development*, 3(4), 100174. <https://doi.org/10.1016/j.igd.2024.100174>

Rajagopaul, A., Magwentshu, N. & Kalidas, S. (2020, July 10). How South African SMEs can survive and thrive post COVID-19. McKinsey & Company. <https://www.mckinsey.com/~/media/McKinsey/Featured%20Insights/Middle%20East%20and%20Africa/How%20South%20African%20SMEs%20can%20survive%20and%20thrive%20post%20COVID%2019/How-South-African-SMEs-can-survive-and-thrive-post-COVID-19.pdf>

Rao, P., & Sharma S. (2023). Comparative analysis of labor markets: India vs China. *Economic Modelling*, 115, Article 105906.

Rashidirad, M., & Salimian, H. (2020). SMEs' dynamic capabilities and value creation: The mediating role of competitive strategy. *European Business Review, Advance online publication*. <https://doi.org/10.1108/EBR-06-2019-0113>

Ratnasingam, J. (2022). *Furniture manufacturing*. Singapore: Springer Singapore.

Raut, R. D., Narkhede, B. E., & Deshmukh, S. G. (2021). Digital transformation and organizational agility in manufacturing SMEs. *Journal of Manufacturing Technology Management*, 32(3), 601-618.

Rawashdeh, A., Abdallah, A. B., Alfawaer, M., Al Dweiri, M., & Al-Jaghbeer, F. (2024). The Impact of Strategic Agility on Environmental Sustainability: The Mediating Role of Digital Transformation. *Sustainability*, 16(3), 1338. <https://doi.org/10.3390/su16031338>

- Razavi Hajiagha, S. H., Alaei, S., Sadraee, A., & Nazmi, P. (2024). A perspective of international performance improvement concentrating on innovation and digital resilience of SMEs: the case of an emerging economy. *Journal of Enterprise Information Management*, 37(5), 1709-1736.
- Reed, T. (2015). Infrastructure development challenges in BRICS countries. *Journal of Global*
- Richie, J., Lewis, J., & Elam, G. (2003). Designing and selecting samples. In J. Richie & J. Lewis (Eds.), *Qualitative research practice: A guide for social science students and researchers* (pp. 77-108). SAGE Publications.
- Rodriguez, M., & Carvalho, M. (2022). The impact of Brazilian SME policies on large firms. *Latin American Business Review*, 24(3), 112-127.
- Romanova, O. A., & Kuzmin, E. A. (2020). Industrial policy strategy: A case of changing national priorities in Russia. *WSEAS Transactions on business and economics*, 17, 879-888.
- Romero, T. (2024). The power of positive attitude. *ResearchGate*. <https://doi.org/10.13140/RG.2.2.27813.72169>
- Ross, J. China's economy in 2024 continued to far outgrow the US.
- Ross, P. T., & Bibler Zaidi, N. L. (2019). Limited by our limitations. *Perspectives on medical education*, 8(4), 261-264.
- Rosstat. (2023). *Russian SME Failures in 2022: Impacts on Manufacturing*. Federal State Statistics Service.
- Runtuk, J. K., Ng, P. K., Ooi, S. Y., Purwanto, R., Nur Chairat, A. S., & Ng, Y. J. (2023). Sustainable growth for small and medium-sized enterprises: interpretive structural modeling approach. *Sustainability*, 15(5), 4555.
- Ryabkov, S. (2025). BRICS and the Challenges of the International System Ahead. *Insight Turkey*, 27(1), 63-74.

SA news. (2023, November 19). Small business can stimulate economic growth, job creation. *SAnews.gov.za*. <https://www.sanews.gov.za/south-africa/small-business-can-stimulate-economic-growth-job-creation>

Saah, P., Mbohwa, C., & Madonsela, N. S. (2023). The contribution of innovations to the growth and competitiveness of South African small and medium-sized enterprises. *International Journal of Business & Management Studies*, 4(12). <https://doi.org/10.56734/ijbms.v4n12a7>

Sadikoglu, E., & Ozorhon, B. (2024). Modeling the Organizational Agility in the Architecture, Engineering, and Construction (AEC) Industry. *IEEE Transactions on Engineering Management*, 71, 3906-3919. <https://doi.org/10.1109/TEM.2022.3219365>.

Saldaña, J. (2021). *The coding manual for qualitative researchers* (4th ed.). SAGE Publications.

Salisu, Y., & Abu Bakar, L. J. (2020). Technological capability, relational capability and firms' performance: The role of learning capability. *Revista de Gestão (REGE)*, 27(1), 79–99. <https://doi.org/10.1108/REGE-03-2019-0040>

Salkin, C., Oner, M., Ustundag, A., Cevikcan, E. (2018). A Conceptual Framework for Industry 4.0. In: *Industry 4.0: Managing The Digital Transformation*. Springer Series in Advanced Manufacturing. Springer, Cham. https://doi.org/10.1007/978-3-319-57870-5_1

Salnikov, A. (2017). The state of Russia's manufacturing sector: A comprehensive report. *Global Competitiveness Review*, 21(1), 40-58.

Sarwar, A., Khan, M. A., Sarwar, Z., & Khan, W. (2021). Financial development, human capital and its impact on economic growth of emerging countries. *Asian Journal of Economics and Banking*, 5(1), 86-100.

Satpathy, A. S., Sahoo, S. K., Mohanty, A., & Mohanty, P. P. (2025). Strategies for enhancements of MSME resilience and sustainability in the post-COVID-19 era. *Social Sciences & Humanities Open*, 11, 101223. <https://doi.org/10.1016/j.ssaho.2024.101223>

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., & Jinks, C. (2018). Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & Quantity*, 52(4), 1893–1907. <https://doi.org/10.1007/s11135-017-0574-8>

Saunders, M., Lewis, P., & Thornhill, A. (2012). *Research Methods for Business Students* (6th Ed). Pearson Education.

Sawe, B. E. (2017, October 4). *The biggest industries in Brazil*. *WorldAtlas*. Retrieved June 26, 2025, from <https://www.worldatlas.com/articles/which-are-the-biggest-industries-in-brazil.html>

SBP Business Environment Specialists. (2015, July 22). SME sustainability and growth should be an obsession for job creation in South Africa. SBP Alert. http://www.sbp.org.za/uploads/media/SBP_Alert_-_SME_sustainability_and_growth_01.pdf

Schad, J. (2020). How internal networks can help employees reskill and upskill. Retrieved October 02, 2022, from <https://www.randstadrisemart.com/insights/blog/how-internal-networks-can-help-employees-reskill-upskill>

Schumacher, A., Sihm, W., & Erol, S. (2016, October). Automation, digitization and digitalization and their implications for manufacturing processes. In *Innovation and Sustainability Conference Bukarest* (1-5). Amsterdam, The Netherlands: Elsevier.

Schwengber, J. G. (2023). How do intra-organizational networks foster contextual resilience and prepare MNCs for the new normal? Insights from a case study. *International Journal of Business Research Management*, 14(3), 92-107.

SEDA (2020). Integrated report on SME support and training in South Africa. *Small Enterprise Development Agency Report*. Retrieved from <https://www.seda.org.za>

Seens, A. (2013). The financial foundations of sustainable growth: The role of firm earnings. *Journal of Corporate Finance*, 28(1), 72-88.

Serumaga-Zake, J. M., & van der Poll, J. A. (2021). Addressing the Impact of Fourth Industrial Revolution on South African Manufacturing Small and Medium Enterprises (SMEs). *Sustainability*, 13(21), 11703. <https://doi.org/10.3390/su132111703>

Shariff, N. (2015). Utilizing the Delphi Survey Approach: A Review. *J Nurs Care*, 4(3), 246-251. Available at: http://ecommons.aku.edu/eastafrica_fhs_sonam/38

Sharma, D. (2024). *FDI in Make in India: Transforming the manufacturing landscape*. Invest India. Retrieved July 13, 2025, from <https://www.investindia.gov.in/blogs/fdi-make-india-transforming-manufacturing-landscape>

Sharma, R., Adhikary, S., & Borah, A. (2020). The impact of COVID-19 on the global manufacturing sector. *World Journal of Industrial Engineering*, 8(4), 99-112.

Sharma, S., Oberoi, J., Gupta, R., Saini, S., Gupta, A., & Sharma, N. (2022). Effect of agility in different dimensions of manufacturing systems: A review. *Materials Today: Proceedings*. <https://doi.org/10.1016/j.matpr.2022.03.054>.

Sherehiy, B. and Karwowski, W. (2014) The Relationship between Work Organization and Workforce Agility in Small Manufacturing Enterprises. *International Journal of Industrial Ergonomics*, 44, 466-473. <https://doi.org/10.1016/j.ergon.2014.01.002>

Sherehiy, B., Karwowski, W., & Layer, J. K. (2007). A review of enterprise agility: Concepts, frameworks, and attributes. *International Journal of industrial ergonomics*, 37(5), 445-460. <https://doi.org/10.1016/j.ergon.2007.01.007>

Shi, J., & Zhu, X. (2021). Potential impacts of foreign divestment on China's high-tech manufacturing industry: a general equilibrium model-based analysis. *Applied Economics Letters*, 30(2), 205–209. <https://doi.org/10.1080/13504851.2021.1982127>

Shiferaw, R. M., & Amentie Kero, C. (2024). Dynamic capabilities view practices of business firms: a systematic literature review. *Cogent Business & Management*, 11(1). <https://doi.org/10.1080/23311975.2024.2336309>

Shonubi, A. O., & Akintaro, A. A. (2016). The impact of effective communication on organizational performance. *The International Journal of Social Sciences and Humanities*

Invention, 3(3), 1904–1914.

https://www.academia.edu/103712070/The_Impact_Of_Effective_Communication_On_Organizational_Performance

Sibiya, A., Van Der Westhuizen, J. & Sibiya, B., (2023), ‘Challenges experienced by SMMEs and interventions by the South African National and provincial government: A literature review’, *African Journal of Inter/Multidisciplinary Studies* 5(1), 1–11.
<https://doi.org/10.51415/ajims.v5i1.1224>

Sibiya, V., & Kele, T. (2019). Barriers and Public Policies Impeding SMEs International Market Expansion: A South African Perspective. *International Journal of Entrepreneurship*, 23, 1.

Signe, L. & Johnson, C., (2018). The potential of manufacturing and industrialization in Africa: Trends, opportunities, and strategies. *Stanford University Andrew Carnegie Fellow*, Carnegie Corporation. New York

Silva, D. J. C. D., Matos, G. P. D., Gibbon, A. R. D. O., Veiga, C. P. D., Teixeira, C. S., Lopes, L. F. D., & Pique, J. M. (2025). Barriers to innovation in Brazilian small-and medium-sized enterprises. *Journal of Small Business and Enterprise Development*, 32(2), 437-469.

Silva, J., Costa, L., & Pereira, F. (2020). Assessing Brazil's innovation capabilities: The role of SMEs in high-tech sectors including furniture manufacturing. *Technovation*, 92-93(102), 102168.

Silverman, D. (2013). *Doing qualitative research* (4th ed.). SAGE Publications.

Silverman, D. (2013). *Doing qualitative research* (4th ed.). SAGE Publications.

Simon, M. (2011). *Assumptions, limitations and delimitations*.

Singh, A., & Jaiswal, K. K. (2018). Ease of doing business in India: a vision of make in India. *Economic Affairs*, 63(1), 129-135.

Singh, B. (2023). *India's Informal Economy: Contractual Labour in the Formal Manufacturing Sector*. Routledge.

Singh, P., & Gupta, R. (2023). India's manufacturing sector: Key strengths and growth drivers. *Indian Economic Review*, 45(2), 121-136.

Singh, R., & Bhat, M. (2021). *Failure Rates of SMEs in India: Trends and Analysis*. *Journal of Indian Business Research*, 34(4), 151-169.

Singh, R., & Lee, D. (2022). *Economic Challenges Facing SMEs in BRICS Countries: A Comparative Study*. *International Journal of Emerging Markets*, 17(2), 105-125.

Singhal, K., & Singhal, J. (2019). Technology and Manufacturing in China before the Industrial Revolution and Glimpses of the Future. *Production and Operations Management*, 28(3), 505-515.

Sinha, A. K., Mishra, A. K., Manogna, R. L., & Prabhudesai, R. (2022). Examining the determinants of small firms' performance in India. *International Journal of Productivity and Performance Management*, 71(6), 2496–2533. <https://doi.org/10.1108/IJPPM-10-2020-0508>

Sinha, D., & Sinha, S. (2020). Managing in a VUCA world: Possibilities and pitfalls. *Journal of Technology Management for Growing Economies*, 11(1), 17-21. <https://doi.org/10.15415/jtmge.2020.111003>

Sitharam, S., & Hoque, M. (2016). Factors Affecting the Performance of Small and Medium Enterprises in KwaZulu-Natal, South Africa. *Problems and Perspectives in Management*, 14, 277-288. [https://doi.org/10.21511/ppm.14\(2-2\).2016.03](https://doi.org/10.21511/ppm.14(2-2).2016.03)

Skulmoski, G. J., Hartman, F. T. & Krahn, J. (2007). The Delphi method for graduate research. *Journal of Information Technology Education*, 6, 1–21. <https://doi.org/10.28945/199>

Small Business Institute (SBI). (2018). The number of formal micro, small & medium businesses in South Africa: Preliminary findings of stage 1 of the baseline study of small businesses in South Africa. <https://www.smallbusinessinstitute.co.za/wp-content/uploads/2019/01/SBIbaselineStudyAlertfinal.pdf>

Small Enterprise Development Agency (2019) *Small business development. 2018/19 report*, <http://www.seda.org.za/publications/publications/seda%20annual%20report%202019%20final%20document%20sent%20to%20parliament.pdf>.

Small Enterprise Development Agency. (2023). *Annual report 2022–2023*. Department of Small Business Development. <https://www.seda.org.za/Publications/Pages/Research-Publications.aspx>

SME South Africa. (2020). *The SME Landscape report 2018/2019*. South Africa, SME South Africa. <https://smesouthafrica.co.za/>

Smit, B., & Scherman, V. (2021). Computer-Assisted Qualitative Data Analysis Software for Scoping Reviews: A Case of ATLAS.ti. *International Journal of Qualitative Methods*, 20, 16094069211019140. <https://doi.org/10.1177/16094069211019140>

South African Furniture Initiative. (2022). <https://www.southafricanfurnitureinitiative.co.za/>

South African Government. (2020). *South African Economic Reconstruction and Recovery Plan*. Government Communications (GCIS). https://www.gov.za/sites/default/files/gcis_document/202010/south-african-economic-reconstruction-and-recovery-plan.pdf

South African Reserve Bank. (2020). *Occasional bulletin of economic notes* (OBEN/20/02). <https://www.resbank.co.za/Research/Occasional%20Bulletin%20of%20Economic%20Notes/Pages/EconomicNotes-Home.aspx>

South African Revenue Service. (2024). SARS' available tax incentives to boost small and medium-sized enterprises. *South African Revenue Service*. <https://www.hobbsinc.co.za/sars-available-tax-incentives-to-boost-small-and-medium-sized-enterprises/>

Stake, R. E. (2010). *Qualitative research: Studying how things work*. The Guilford Press.

Stake, R.E. (2006) Multiple case study analysis. The Guilford Press, New York.

Stam, E. (2015). Entrepreneurial ecosystems and the geography of innovation. In *The Oxford Handbook of Local Competitiveness* (pp. 47-76). Oxford University Press.

Statista. (2024). *Science and research in China*. Statista. <https://www.statista.com/topics/12399/science-and-research-in-china/#topicOverview>

Statistica. (2023). Export statistics for BRICS countries. *Statistica Report*, 2023.

Statistics South Africa. (2018). South Africa's manufacturing sector: An overview. *South African Statistical Review*, 22(3), 50-61.

Statistics South Africa. (2021). Economic performance of South African industries. *Economic Bulletin*, 45(2), 112-123.

Statistics South Africa. (2023). MEDIA RELEASE: Census 2022 Population Count Results. Statistics South Africa. <https://www.statssa.gov.za/?p=16716>

Sun, M., Cao, X., Liu, X., Cao, T., & Zhu, Q. (2024). The Russia-Ukraine conflict, soaring international energy prices, and implications for global economic policies. *Heliyon*, 10(16), e34712. <https://doi.org/10.1016/j.heliyon.2024.e34712>

Surya, B., Menne, F., Sabhan, H., Suriani, S., Abubakar, H., & Idris, M. (2021). Economic growth, increasing productivity of SMEs, and open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(1), 20. <https://doi.org/10.3390/joitmc7010020>

Suvvari, S. (2020). The Impact of Agile on Customer Satisfaction and Business Value. *Innovative Research Thoughts*. <https://doi.org/10.36676/irt.v6.i5.1413>.

Swaen, B., & George, T. (2022). *What is a conceptual framework? Tips & examples* (Revised September 5, 2024). Scribbr. <https://www.scribbr.com/methodology/conceptual-framework/>

Szerb, L., Lafuente, E., Horváth, K., & Páger, B. (2019). The relevance of quantity and quality entrepreneurship for regional performance: The moderating role of the entrepreneurial ecosystem. *Regional Studies*, 53(9), 1308-1320.

Taj, S., Dufour, J., & Zaman, H. (2018). Lean manufacturing practices and organizational agility: A conceptual framework. *Journal of Manufacturing Technology Management*, 29(2), 316-334.

Tanujaya, B., Prahmana, R. C. I., & Mumu, J. (2022). Likert scale in social sciences research: Problems and difficulties. *FWU Journal of Social Sciences*, 16(4), 89-101.

Taylor, S. M., Smith, C., & Roberts, G. (2021). Defining explicit criteria for consensus in Delphi studies: A methodological approach. *International Journal of Qualitative Research*, 28(2), 59-72.

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and micro foundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319-1350. <https://doi.org/10.1002/smj.640>

Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning*, 51(1), 40-49. <https://doi.org/10.1016/j.lrp.2017.06.007>

Teece, D. J. (2020). Toward a theory of the firm in the digital economy: The impact of digital technologies on firm dynamics. *Strategic Management Journal*, 41(8), 1323-1350. <https://doi.org/10.1002/smj.3144>

Teece, D. J., & Pisano, G. (1994). The dynamic capabilities of firms: An introduction. *Industrial and Corporate Change*, 3(3), 537-556.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal*, 18(7), 509-533.

Tesch, R. (2013). *Qualitative research: Analysis types and software tools* (2nd ed.). Routledge.

Tesch, R. (2013). *Qualitative research: Analysis types and software tools* (2nd ed.). Routledge. <https://doi.org/10.4324/9781315067339>

Tessarini, G. & Saltorato, P. (2021) Workforce Agility: A systematic Literature Review and a Research Agenda Proposal. *Innovar*, 31(81). In press. <https://doi.org/10.15446/innovar.v31n81.95582>

The Presidency of South Africa. (2021). *Industrialisation and local production*. In *State of the Nation Address (SONA) 2021: Economic reconstruction and recovery plan*. Government of South Africa. <https://www.stateofthenation.gov.za/sona-2021/economic-reconstruction-and-recovery-plan/industrialisation-and-local-production>

Thekkoote, R. (2022). A framework for the integration of lean, green and sustainability practices for operation performance in South African SMEs. *International Journal of Sustainable Engineering*, 15(1), 47–58. <https://doi.org/10.1080/19397038.2022.2042619>

Theodoraki, C., Dana, L.-P., & Caputo, A. (2022). Building sustainable entrepreneurial ecosystems: A holistic approach. *Journal of Business Research*, 140, 346–360. <https://doi.org/10.1016/j.jbusres.2021.11.005>

Thomas, G. H., & Douglas, E. J. (2024). Resource reconfiguration by surviving SMEs in a disrupted industry. *Journal of Small Business Management*, 62(1), 140-174.

Thomas, H., & Lee, C. (2024). Profitability and sustainable growth in SMEs: Long-term implications and strategies. *Journal of Business Research*, 77(4), 25-40.

TIPS. (2022). Sustainable practices in South Africa's agro-processing sector. TIPS Policy Papers. <https://www.tips.org.za>

Tokarev, Y. A., & Litvinova, A. G. (2021). Impact Analysis And Prospects For Innovation Development In Russia. In S. I. Ashmarina, V. V. Mantulenko, M. I. Inozemtsev, & E. L. Sidorenko (Eds.), *Global Challenges and Prospects of The Modern Economic Development*, vol 106. European Proceedings of Social and Behavioural Sciences (1766-1773). European Publisher. <https://doi.org/10.15405/epsbs.2021.04.02.210>

Touboulic, A., & Walker, H. (2015). Theories in sustainable supply chain management: a structured literature review. *International Journal of Physical Distribution & Logistics Management*, 45(1/2), 16-42

Tracy, S. J. (2024). *Qualitative research methods: Collecting evidence, crafting analysis, communicating impact*. John Wiley & Sons.

TRALAC. (2018). *South Africa's economic and industrial sector: Policy implications and strategies for growth*. Trade and Industry Policy Review, 12(3), 140-159.

Trinh-Phuong, T., Molla, A., & Peszynski, K. (2012). *Enterprise systems and organizational agility: A review of the literature and conceptual framework*. Communications of the Association for Information Systems, 31, 167–193. <https://doi.org/10.17705/1CAIS.03108>

Tripathy, A., & Dastrala, S. M. (2023). Make in India: So far and going ahead. *IIM Bangalore Research Paper*, (674).

Tsujimoto, M., Kajikawa, Y., Tomita, J., & Matsumoto, Y. (2018). A review of the ecosystem concept—Towards coherent ecosystem design. *Technological Forecasting and Social Change*, 136, 49–58. <https://doi.org/10.1016/j.techfore.2017.06.032>

Tucker, M. A. (2025). *The Impacts of Software Development Methodologies on New Model Success Rates in the US Automotive Industry* (Doctoral dissertation, Walden University).

Udeagha, M. C., & Ngepah, N. (2023). The drivers of environmental sustainability in BRICS economies: Do green finance and fintech matter? *World Development Sustainability*, 3, 100096. <https://doi.org/10.1016/j.wds.2023.100096>

Ududechinyere, C., Eze, O. M., & Nweke, A. M. (2018). An analysis of the effect of manufacturing sector on the growth of the Nigerian economy. *IOSR Journal of Business and Management*, 20(4, Ver. VI), 34–46.

UN Comtrade Database. (2023). Trade statistics for international business development.

UNCTAD. (2023). *World investment report 2023: Foreign direct investment in a new global economic era*. United Nations Conference on Trade and Development. <https://unctad.org/webflyer/world-investment-report-2023>

UNDP. (2021). Sustainable manufacturing and its role in economic recovery. *United Nations Development Programme*, 15, 88-99.

UNIDO. (2019a). The role of SMEs in sustainable development. United Nations Industrial Development Organization. https://www.unido.org/sites/default/files/files/2019-12/UNIDO_SME_SDGs_Report.pdf

UNIDO. (2021a). Promoting agile manufacturing in developing countries. *UNIDO Working Papers*, 14, 12-30.

United Nations Industrial Development Organization (UNIDO). (2020). Industrializing in the digital age.

Uskova, T. V. E., Lukin, E. V., o'Nikov, A. E. E., & Leonidova, E. G. (2017). Industrial development issues in the economy of the old industrial regions of Russia. *Economic and Social Changes: Facts, Trends, Forecast*, 10(4), 62-77.

Usuka, K. (2019). An analysis of the determinants of poverty in India and South Africa. *Global Majority E-Journal*, 10(2), 100–115.

https://www.american.edu/cas/economics/ejournal/upload/global_majority_e_journal_10_2_accessible.pdf

Valdez-Juárez, L. E., Ramos-Escobar, E. A., Hernández-Ponce, O. E., & Ruiz-Zamora, J. A. (2024). Digital transformation and innovation, dynamic capabilities to strengthen the financial performance of Mexican SMEs: a sustainable approach. *Cogent Business & Management*, 11(1), 2318635.

Vasileiou, K., Barnett, J., Thorpe, S., & Young, T. (2018). Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period. *BMC medical research methodology*, 18(1), 148.

Veiga, C., Veiga, C., De Souza Silva Michel, J., Di Iorio, L., & Su, Z. (2024). E-Commerce in Brazil: An In-Depth Analysis of Digital Growth and Strategic Approaches for Online Retail. *J. Theor. Appl. Electron. Commer. Res.*, 19, 1559-1579. <https://doi.org/10.3390/jtaer19020076>.

Veiga, M., & McCahery, J. (2019). The Financing of Small and Medium-Sized Enterprises: An Analysis of the Financing Gap in Brazil. *European Business Organization Law Review*, 20, 633 - 664. <https://doi.org/10.1007/s40804-019-00167-7>.

Vernon, C. M. (2009). Using Delphi methodology to identify strategic issues for small business enterprises in emerging markets. *Strategic Change*, 18(5), 271-282.

Volz, F., Münch, C., Küffner, C., & Hartmann, E. (2025) Digital ecosystems and their impact on organizations—A dynamic capabilities approach. *International Journal of Management Reviews*, 27, 398–419. <https://doi.org/10.1111/ijmr.12396>

Vox Briefs. (2024). What does an agile business model even mean? *Vox Briefs*. <https://voxbriefs.com/what-does-an-agile-business-model-even-mean/>

Vu, H. M. (2020). A review of dynamic capabilities, innovation capabilities, entrepreneurial capabilities and their consequences. *The Journal of Asian Finance, Economics and Business*, 7(8), 485-494.

Vuba, S. (2019). *The missed opportunity: SMMEs in the South African economy*. *Mail & Guardian*. <https://mg.co.za/article/2019-04-12-00-the-missed-opportunity-smmes-in-the-south-african-economy/>

Wakkee, I., Van Der Veen, M., & Eurlings, W. (2015). Effective Growth Paths for SMEs. *The Journal of Entrepreneurship*, 24(2), 169–185.

Walter, A. (2021). Organizational agility: ill-defined and somewhat confusing? A systematic literature review and conceptualization. *Manag Rev Q* 71, 343–391. <https://doi.org/10.1007/s11301-020-00186-6>

Waltz, T. J., Powell, B. J., Matthieu, M. M., Chinman, M. J., Smith, J. L., Proctor, E. K., Damschroder, L. J., & Kirchner, J. E. (2015). Innovative methods for using expert panels in identifying implementation strategies and obtaining recommendations for their use. *Implementation Science : IS*, 10(Suppl 1), A44. <https://doi.org/10.1186/1748-5908-10-S1-A44>

Wambugu, P., Karanja, K., & Rambo, D. (2020). Market sensing, dynamic capabilities and firm performance: Evidence from Kenyan SMEs. *African Journal of Economic Review*, 8(2), 52-73.

Wang, Y. (2016). What are the biggest obstacles to growth of SMEs in developing countries? – An empirical evidence from an enterprise survey. *Borsa Istanbul Review*, 16(3), 167–176. <https://doi.org/10.1016/j.bir.2016.06.001>

Wani, N. U. H., & Dhami, J. K. (2017). India's trade linkage with BRCS economies: trends, patterns and future potentialities. *Journal of International Economics*, 8(1), 55-80.

Wendler, R. (2013). The Structure of Agility from Different Perspectives. Proceedings of the 2013 Federated Conference on Computer Science and Information Systems, 1165-1172.

WESGRO. (2023). *Annual report 2022/23*. <https://www.wesgro.co.za/corporate/about>

Williams, A., & Liu, Z. (2021). Financial pressures and growth in SMEs: A critical review. *Financial Management Review*, 6(3), 32-47.

Williams, G. Cunningham, S. De Beer D. (2014) Advanced Manufacturing and Jobs in South Africa: An Examination of Perceptions and Trends.

Williams, R. I., Smith, A., Aaron, J. R., Manley, S. C., & McDowell, W. C. (2019). Small business strategic management practices and performance: A configurational approach. *Economic Research-Ekonomska Istraživanja*, 33(1), 2378–2396. <https://doi.org/10.1080/1331677X.2019.1677488>

Wolff, B., Mahoney, F., Lohiniva, A. L., & Corkum, M. (2019). Collecting and Analyzing Qualitative Data. In S. A. Rasmussen & R. A. Goodman (Eds.), *The CDC Field Epidemiology Manual* (1st ed., pp. 213–228). Oxford University Press New York. <https://doi.org/10.1093/oso/9780190933692.003.0010>

World Bank. (2018). Overcoming poverty and inequality in South Africa: An assessment of drivers, constraints and opportunities. The World Bank

World Bank. (2020). *Sustainability in the global manufacturing sector: Trends and challenges for emerging economies*. World Bank Policy Research Paper, 9876.

World Bank. (2020). *The role of government incentives in supporting small and medium enterprises*. World Bank Group. <https://www.worldbank.org/en/topic/sme-development>

World Bank. (2020). The role of SMEs in global economic development. *World Bank Report*.

World Bank. (2021). Global economic prospects: A strong but uneven recovery. Washington, DC: World Bank. <https://www.worldbank.org/en/publication/global-economic-prospects>

World Bank. (2022). Financing small and medium enterprises: A \$5 trillion gap. *World Bank Insights*, 1-5.

World Bank. (2023). *World Bank Annual Report 2023: A new era in development*. World Bank. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099092823161580577/bosib055c2cb6c006090a90150e512e6beb>

World Economic Forum. (2020). South Africa's economic recovery: Challenges and opportunities. *World Economic Forum Report*, 29, 11-15.

World Economic Forum. (2020). These are the top 10 job skills of tomorrow – and how long it takes to learn them. <https://www.weforum.org/agenda/2020/10/top-10-work-skills-of-tomorrow-how-long-it-takes-to-learn-them/>

World Economic Forum. (2020a). The Future of Jobs report 2020. <https://www.weforum.org/reports/the-future-of-jobs-report-2020/in-full>

World Manufacturing Foundation. (2022). *The 2022 World Manufacturing Report: Redesigning supply chains in the new era of manufacturing* [E-book]. World Manufacturing Foundation. https://worldmanufacturing.org/wp-content/uploads/17/6-2022_World-Manufacturing-Report_E-Book.pdf

Worldometer. (2025). *South Africa Population (LIVE)*. <https://www.worldometers.info/world-population/south-africa-population/>

Wyne, N., & Hafeen, S. (2019). Small and medium enterprises and their contribution to economic development. *Development Economics Journal*, 36(4), 236–249.

- Xiong, X., Yue, X., & Wu, Z. (2022). Current status and development trends of Chinese intelligent furniture industry. *Journal of Renewable Materials*, 11(3), 1353–1366. <https://doi.org/10.32604/jrm.2022.023447>
- Xue, F., Zhao, X., & Tan, Y. (2022). Digital transformation of manufacturing enterprises: An empirical study on the relationships between digital transformation, boundary spanning, and sustainable competitive advantage. *Discrete Dynamics in Nature and Society*, 2022, Article 4104314. <https://doi.org/10.1155/2022/4104314>
- Yahaya, H. D., & Nadarajah, G. (2023). Determining key factors influencing SMEs' performance: A systematic literature review and experts' verification. *Cogent Business & Management*, 10(3). <https://doi.org/10.1080/23311975.2023.2251195>
- Yikilmaz, İ., & Cekmecelioğlu, H. G. (2023). Organizational agility as a key driver of innovation performance in SMEs and large enterprises. In *New Perspectives and Possibilities in Strategic Management in the 21st Century: Between Tradition and Modernity* (pp. 209–238). IGI Global. <https://doi.org/10.4018/978-1-6684-9261-1.ch012>
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Sage.
- Yoo, W. J., Choo, H. H., & Lee, S. J. (2018). A Study on the sustainable growth of SMEs: The mediating role of organizational metacognition. *Sustainability*, 10(8), 2829.
- Young, D. S., & Casey, E. A. (2018). An Examination of the Sufficiency of Small Qualitative Samples. *Social Work Research*. <https://doi.org/10.1093/swr/svy026>
- Young, R. (2024, July 3). *How onshoring is transforming the global supply chain*. Protolabs. <https://www.protolabs.com/resources/blog/how-onshoring-is-transforming-the-global-supply-chain/>.
- Yukhanaev, A., Fallon, G., Baranchenko, Y., & Anisimova, A. (2015). An investigation into the formal institutional constraints that restrict entrepreneurship and SME growth in Russia. *Journal of East-West Business*, 21(4), 313-341.

Zahan, M. (2017). The economic sustainability of small business: an empirical analysis on the mobile phone banking in Dhaka City. *International Journal of Sustainable Strategic Management*, 5(3), 231-244.

Zahra, S. A., & George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension. *Academy of Management Review*, 27(2), 185-203.

Zhang J., Liu X., & Wang Q.(2023) The evolving role of BRICS nations in global governance. *Global Governance* ,29(2), Article 201-220.

Zhang, Q. (2022). Sectoral and Country-Origin Dynamics of FDI in China in 1997-2020. *The Chinese Economy*, 56(2), 89–103. <https://doi.org/10.1080/10971475.2022.2096808>

Zhang, X., Xu, Y., & Ma, L. (2022). Research on Successful Factors and Influencing Mechanism of the Digital Transformation in SMEs. *Sustainability*, 14(5), 2549. <https://doi.org/10.3390/su14052549>

Zhang, Z. & Sharifi, H. (2007). "Towards Theory Building in Agile Manufacturing Strategy—A Taxonomical Approach," in *IEEE Transactions on Engineering Management*, vol. 54, no. 2, pp. 351-370.

Zhang, Z., & Sharifi, H. (2000). A methodology for achieving agility in manufacturing organisations. *International journal of operations & production management*, 20(4), 496-513.

Zhang, Z., & Sharifi, H. (2007). Organisational agility in manufacturing: A framework for enhancing operational flexibility. *International Journal of Production Research*, 45(3), 761-775.

Zhao, S. (2021). Rhetoric and reality of China's global leadership in the context of COVID-19: implications for the US-led world order and liberal globalization. In *China's Big Power Ambition under Xi Jinping* (pp. 3-18). Routledge.

Zhao, X., Sokolov, A., Cassiolato, J. E., & Li, M. (Eds.). (2025). *The Innovation Competitiveness of BRICS Countries*. Springer Nature Singapore, Imprint: Springer.

- Zhao, X., Sum, C. C., Qi, Y., Zhang, H., & Lee, T. S. (2006). A taxonomy of manufacturing strategies in China. *Journal of Operations Management*, 24(5), 621-636.
- Zhou, H., & Li, L. (2020). The impact of supply chain practices and quality management on firm performance: Evidence from China's small and medium manufacturing enterprises. *International Journal of Production Economics*, 230, 107816. <https://doi.org/10.1016/j.ijpe.2020.107816>
- Zhuravskaya, E., Guriev, S., & Markevich, A. (2024). New Russian economic history. *Journal of Economic Literature*, 62(1), 47-114.
- Ziakis, C., Vlachopoulou, M., & Petridis, K. (2022). Start-Up Ecosystem (StUpEco): A conceptual framework and empirical research. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(1), 35. <https://doi.org/10.3390/joitmc8010035>
- Zighan, S. M., & Dwaikat, N. Y. (2023). Exploring organisational agility in SMEs. *International Journal of Entrepreneurship and Small Business*, 49(4), 561–576. <https://doi.org/10.1504/IJESB.2023.132854>
- Žitkienė, R., & Deksnys, M. (2018). Organizational agility conceptual model. *Montenegrin journal of economics*, 14(2), 115-129.
- Zopounidis, C., & Lemonakis, C. (2024). The company of the future: Integrating sustainability, growth, and profitability in contemporary business models. *Development and Sustainability in Economics and Finance*, 1, 100003. <https://doi.org/10.1016/j.dsef.2024.100003>
- Zorlu, K., & Korkmaz, F. (2021). Organizational communication as an effective communication strategy in organizations and the role of the leader. In A. Durmuş & Ö. Çelebi (Eds.), *Handbook of research on contemporary approaches to organizational communication* (pp. 305–320). Springer. https://doi.org/10.1007/978-3-030-72288-3_21
- Zucoloto, G., Raffo, J., & Leão, S. (2017). Technological appropriability and export performance of Brazilian firms. *African Journal of Science, Technology, Innovation and Development*, 9, 587 - 606. <https://doi.org/10.1080/20421338.2017.1355433>.

Zuraw, B. (2024). Balancing cost pressures and quality assurance in global manufacturing: Strategies for resilience. *Manufacturing Strategy Journal*, 20(3), 111-125.

9. APPENDICES

- a) Gatekeeper letter
- b) Ethics approval
- c) Research interview Questionnaire (SMEs)
- d) Research interview Questionnaire (Supporting institutions)
- e) Delphi Expert Review letter
- f) Delphi data collection tool:

Round 1 Expert reviews

https://docs.google.com/forms/d/1XyK95WO073m111Ghk2CjeG_J96H6skdgUAMzIL6jn4o/edit#responses

Round 2 Expert reviews

<https://docs.google.com/forms/d/1VOk2L4SHEaiAEvaOGRzVD5wLL4A1VbBuAiDagg6m-G0/edit>

22 January 2025

Mrs Nokonwaba Mbongwe

Email: g21m2211@campus.ru.ac.za

Review Reference: 2024-7514-8817

Dear Mrs Mbongwe,

Title: Developing a framework to strengthen South African Manufacturing SMEs' Agility with Best Practices from BRICS countries.

Researcher: Mrs Nokonwaba Mbongwe

Supervisor(s): Professor Matshediso Mohapelo

This letter confirms that the above research proposal has been reviewed and **APPROVED** by the Rhodes University Human Research Ethics Committee (RU-HREC). Your Approval number is: 2024-7514-8817

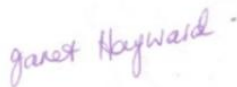
Approval has been granted for 1 year. An annual progress report will be required in order to renew approval for an additional period. You will receive an email notifying you when the annual report is due.

Please apply for a protocol amendment should any substantive change(s) be made, for whatever reason, during the research process. This includes changes in investigators. Email your request to ethics-committee@ru.ac.za.

Please submit a brief report to the ethics committee on the completion of the research. The purpose of this report is to indicate whether the research was conducted successfully, if any aspects could not be completed, or if any problems arose that the ethical standards committee should be aware of.

If a thesis or dissertation arising from this research is submitted to the library's electronic theses and dissertations (ETD) repository, please notify the committee of the date of submission and/or any reference or cataloguing number allocated.

Sincerely,



Dr Janet Hayward

Chair: Rhodes University Human Research Ethics Committee (RU-HREC)



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Developing a framework to strengthen South African Manufacturing SMEs' Agility with Best Practices from BRICS countries

Background to the study:

The proposed study examines the significant role of small and medium-sized enterprises (SMEs) in the manufacturing sector within the BRICS (Brazil, Russia, India, China, and South Africa) countries. Manufacturing is a vital sector in these economies, substantially contributing to Gross Domestic Product (GDP), employment, and overall economic growth. Despite its importance, the manufacturing sectors in BRICS countries have encountered challenges, including declining production and GDP.

Recognizing the importance of organizational agility in enabling manufacturing firms to respond swiftly to environmental changes and emerging challenges, the study identifies a gap in clearly defined, sector-specific frameworks for organizational agility. The adoption of best practices in agility as standard operating procedures can facilitate cross-learning and improvement across the BRICS nations.

The study aims to create an industry-specific framework of organizational agility, based on best practices within the BRICS countries. It will investigate the role of key variables, such as resources and agility theory, in enhancing the agility of SMEs in the manufacturing sector. Additionally, it will evaluate the impact of policies, regulations, and legislation on the organizational agility, growth, and resilience of the manufacturing sector in these countries.

Drawing on the resource-based view theory, which posits that a firm's resources and capabilities are critical to its performance and competitive advantage, and agility theory, which emphasizes the ability of organizations to rapidly and effectively respond to environmental changes, the study will employ a qualitative research approach. Data collection will involve document review and semi-structured interviews, with thematic analysis and pattern matching supported by AtlasTi software and hermeneutics. The resulting framework will be validated through a Delphi process involving expert reviews.

Ultimately, the developed framework will serve as a tool for policymakers, industry leaders, and researchers to enhance the competitiveness and sustainability of the manufacturing sector in BRICS economies



RESEARCH INTERVIEW QUESTIONNAIRE: SUPPORTING INSTITUTIONS

These questions aim to explore the perspectives, practices, and impact of funding institutions, policy makers, and supporting institutions in fostering organisational agility within the furniture manufacturing SME sector.

Personal Information

- (i) Are you 18 years or older?
- (ii) Number of years in the organisation & this industry specifically:
- (iii) Specification of the position you hold:
- (iv) Specific area of expertise:.....
- (v) Do you voluntarily consent to participation in the study?

1. **Question 1** : In terms of being a Supporting Institution: From these areas what is your main focus?

- o Incubator
- o Bring market linkages to international markets
- o Building capacity of the SMEs
- o Funding Institution
- o Research and development
- o Other (please specify).....
.....

1. **Question 2:** How do your organization's policies, regulatory frameworks, and legislative initiatives influence organizational agility, resilience, and growth within the manufacturing SME sector?

2. **Question 3:** May you provide an overview of your organisation’s history, activities, support programmes to manufacturing SMEs operating in the furniture manufacturing industry.

Probe (i): Please share your conditions or requirements these SMEs to meet in order to receive support (*Financial, training, practices, compliance etcetera*)?

Probe (ii): What structural aspects of your organisation do you think encourage organisational agility in the firms you support?

Probe (iii): *What structural aspects do you think affect these manufacturing SME firms' agility?*

Funding

3. What organizational practices and processes does your organization employ to accelerate and enhance agility among manufacturing SMEs?
4. How would you describe your institution's approach to promoting organisational agility within the manufacturing SME sector (Practices)?

Probe (i) Can you provide insights into the specific funding decision making process your institution employs to organisational agility initiatives in manufacturing?

Probe (ii) To what extent is agility a factor considered during the decision-making process when your institution is evaluating funding proposals for the manufacturing sector?

Policy Making:

5. In your role as a policy maker, how do you contribute to the development or review of policies aimed at monitoring and evaluating the effectiveness of mechanisms promoting agility in the manufacturing industry?



Probe (i) Can you share examples of specific policy frameworks that have been implemented to enhance agility in the manufacturing sector, and how do you assess their effectiveness?

Probe (ii) What challenges and opportunities do you encounter in facilitating policies that promote agility, and how do you navigate these in your policymaking processes?

Probe (iii) How do you involve stakeholders in the manufacturing SME industry in the development or review of policies related to agility, and what impact does this collaboration have?

Support:

6. How does your organization facilitate sense-response mechanisms within manufacturing SMEs to enable them to swiftly adapt to external environmental turbulences?
7. How does your institution respond to the evolving needs of Manufacturing SMEs in terms of organisational agility, and how does this responsiveness contribute to their overall sustainable growth and performance?
8. Can you elaborate on how your institution facilitates market linkages to international markets and responds to specific agility elements within the manufacturing SME sector?

Probe: What mechanisms do you have to test the effectiveness on that strategy?

9. In what ways do you build the capacity of SMEs to be agile organizations, and what outcomes have you observed?

Probe (i) Have you identified any gaps in relation to your organisation's support towards enhancing OA in the manufacturing SME sector? If yes, what do you think are the barriers to attainment of OA?



10. Given the successes and shortcomings in supporting these organisations towards being agile, what in your view do you think can be done differently?

.....
.....

11. To strengthen OA in manufacturing SMEs, what elements do you think should be included in an Organisational agility framework for manufacturing SMEs?

.....
.....

12. Can you share some of what you would regard as best practices or initiatives your organization has developed or implemented to strengthen organizational agility within the manufacturing SME sector?

.....
.....

Thank you, I wish to reiterate the confidentiality of your responses and access to the results. Sharing of the results will assist all BRICS member countries learn.

Nokonwaba Andiswa Mbongwe
PhD Candidate
Cell number: +27 82 765 3852
Email: g21m2211@campus.ru.ac.za



RESEARCH INTERVIEW QUESTIONNAIRE – MANUFACTURING SMEs

- (i) Are you 18 years or older?
- (ii) Number of years in the manufacturing SME firm & this industry specifically:
- (iii) Specification of the position you hold:
- (iv) Do you voluntarily consent to participation in the study? Yes No

Objective 1: Determine Enablers And Capabilities, Including how Policies, Regulatory, and Legislative Frameworks in the Manufacturing Industry influence Organizational Agility.

1. **Question 1:** May you provide an overview of your company's history, activities, markets and state of agility?

Probe (i): May you share examples of situations where your SME had to demonstrate agility in response to changes in the market or industry?

Probe (ii): What structural aspects of your organisation do you think enable its agility?

Probe (iii): What structural aspects do you think affect its agility?

2. **Question 2:** What national/local policies, regulatory, and legislative frameworks exist to influence OA, resilience, competitiveness and growth?

Probe (i): Would you say the legal environment is restrictive and affects agility?, if yes, in what way?

Probe (ii): Do you have any suggestions on policies that can enhance your organisation's agility?

3. **Question 3:** What would you say are your capabilities as an SME regarding agility?

Probe (i): How would you describe your company's cognitive, physical and structural capabilities?



Probe (ii): How would you describe its competency, flexibility, responsiveness, and quickness in the event of an external environment turbulence?

4. **Question 4:** What support mechanisms do you have access to, that assist your organisation towards being agile?

Probe (i) Who are the key stakeholders in the manufacturing SME supporting structure? (Entrepreneurial ecosystem)

Probe (ii) Which stakeholders do you think can be brought on board to strengthen the support system (EE)?

Objective 2: Investigate how practices and processes in manufacturing SMEs accelerate and influence agility.

5. **Question 4:** What practices and processes in your company do you think help in influencing organisational agility?

Probe (i): What practices do you have in place to enrich the customer experience?

Probe (ii): What cooperative practices do you implement?

Probe (iii): How do you organise/ plan for change in the environment?

Probe (iv): How do you leverage the impact of people & information?

Probe (v) : How would you describe the sustainability of the practices and processes that positively contribute to organisational agility?

6. **Question 5:** What external stakeholders play a role in enhancing your company's agility?

Probe (i): Please explain their activities and processes that enhance your company's agility.

Probe (ii) What role does the government play in your company's agility? Please specify how they have helped in the past.



Objective 3: Investigate how sense-response in manufacturing SMEs accelerate and influence agility

7. **Question 6:** Would you describe how “sense and respond” ability in manufacturing influence your company’s agility?

Probe (i): Do you have a mechanism for forecasting external environment turbulence and develop response mechanisms in time? Please describe it.

Probe (ii): What abilities and experience do you have as a decision maker to sense external challenges?

Probe (iii): How do you internally manoeuvre to respond quickly to changes? (The ability to see external changes).

Probe (iv): To what extent are you able to collect & process internal and external information in preparation for external turbulence / change.

Probe (v): What response strategies do you usually use in the event of a foreseen or existing stimuli?

Objective 4: Develop a theory-led best practices framework to strengthen OA in the manufacturing sector.

8. **Question 7:** What best practices, policies and processes do you think should be implemented to ensure efficient and effective SME agility in South Africa?

9. **Question 8:** What role do you think other stakeholders, including the government, should play in enhancing SMEs agility in South Africa?

10. **Question 9:** What internal abilities does the organization have to respond to environmental changes? (operational adjustments agility)



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Probe (i): How do you internally manoeuvre to respond quickly to changes in the environment?

Probe (ii): How flexible is your structure to allow shifting of human resources?

(Probe (iii): To what extent does your organisational culture encourage change and to what extent does it empower employees to adopt new strategies?

Probe (iv): Does your external network support OA, if yes how, if no, what do you think is the cause?

Probe (v): Are your suppliers, outsourced services if any, partners & other members of the external organisational network able to adapt to the changing demands and promote agility?

Probe (vi): Is there a platform that facilitates information sharing for collaboration and cooperation partnerships in manufacturing technology development and import of export opportunities?

Thank you, I wish to reiterate the confidentiality of your responses and access to the results. Sharing of the results will assist all BRICS member countries learn.

Nokonwaba Andiswa Mbongwe
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Rhodes Business School

Leadership for Sustainability

34 Somerset St, Grahamstown, SOUTH AFRICA, 6139

Website. <http://www.ru.ac.za>
t.mohapelo@ru.ac.za

Email : andy.gume@gmail.com OR

10 December 2024

ATTENTION:

██████████
██

East London
South Africa
5600

RE: REQUEST FOR EXPERT REVIEW OF ORGANISATIONAL AGILITY
FRAMEWORK FOR MANUFACTURING SMES IN SOUTH AFRICA

Title: Developing a framework to strengthen South African Manufacturing
SMEs' Agility with Best Practices from BRICS countries

Dear Dr ██████████

I am conducting a Doctor of Philosophy (PhD) study through Rhodes Business School in South Africa.

The study is aimed at developing a framework for Organisational agility in manufacturing SMEs of South Africa. This framework seeks to support these SMEs withstand external environment turbulence. The manufacturing sector has been selected based on its job multiplier effect and being among the highest contributors to GDP and employment creation. The above is mentioned giving cognisance of the fact that again, the sector 's performance and contribution has been decreasing.

The proposed framework will be developed in three phases, phase one will involve literature review on organisational agility in the manufacturing sector, Organisational Agility (OA) enablers and capabilities, practices and processes as well as sense-response frameworks of OA in BRICS countries. Phase two will involve semi-structured interviews with manufacturing SMEs across BRICS countries, supporting institutions, funding institutions and policy makers. The

third part will be Expert Reviews. It will be after this phase that the draft Organisational Agility framework will be subjected to expert reviews for validation.

This will result in the final OA framework, as the evaluation through expert reviews will further improve it as it develops into the final version.

It is against this background that I request your support and assistance in this regard. The draft framework elements are a result of document reviews and interviews with furniture manufacturing SMEs and participants from SME supporting organisations at an executive level.

Please find the attached draft framework.

Your support will be highly appreciated.

Kind Regards



Ms Nokonwaba Andiswa Mbongwe
PhD Candidate
Grahamstown, South Africa

10 December 2024

19 July 2024

[REDACTED]

Dear Dr [REDACTED]

RE: 申請在貴機構進行學術研究的許可。NHREC 註冊號碼： RC-241114-045

我寫這封信是要介紹一個重要的研究專案，題為「以金磚五國的最佳實務為南非製造業中小企業發展一個加強組織敏捷性的框架」，由羅德商學院的 Nokonwaba Andiswa Mbongwe 負責。

本專案的目的是深入探討金磚五國現有的組織敏捷性促進因素、實踐和流程，以及組織敏捷性的感應-反應框架。本研究旨在為南非的製造業中小企業量身定制一個特定行業的組織敏捷性框架。鑑於南非家具製造子產業所面臨的挑戰（該產業在製造業子產業中的增長率最低），本研究旨在提供寶貴的見解，以增強競爭力和可持續增長。

本研究採用定性研究方法，包括文件檢閱、半結構式訪談和專家檢閱，以驗證所提出的組織敏捷性架構。最終框架將基於金磚國家的最佳實踐，為其可持續成長、績效、競爭力和敏捷性提供資訊。此外，該框架將協助中小企業支援機構根據敏捷性調整其政策，並根據清晰的最佳實踐框架為中小企業提供支援，以確保這些中小企業的可持續成長、績效和競爭力。最多將從 3 位機構內的管理階層參與者收集資料。具體來說，身為中小企業支援機構，本研究將探討貴機構在提供財務和指導支援的同時，為支援中小企業的活力所採取的措施。

此外，貴機構如何建立感知和應對可能影響其發展的外部環境挑戰的能力。主要焦點為資助機構、決策機構、支援機構以及家具製造子行業的中小企業。

本研究的參與者將受益於製造業的政策改進和對最佳敏捷性實踐的深入瞭解。研究成果將有助於改善決策流程、促進競爭力、推動製造業中小企業的持續成長和績效。參與本研究屬自願性質，所有回覆將絕對保密。參與者可在任何階段選擇退出研究。

如需更多資訊，我的研究督導、來自羅德商學院的 Tshidi Mohapelo 教授可以提供回應。您可以撥打 046 603 8617 / t.mohapelo@ru.ac.za 與她聯繫，或透過腳注中的詳細資訊聯絡羅德大學人類研究道德委員會。為方便參考，隨函附上一份研究問卷，需時 20 至 40 分鐘。



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感謝您考慮授權貴組織參與這項重要的研究工作。

敬上、

Nokonwaba Andiswa Mbongwe
研究員
Andy.gume@gmail.com
082 765 3852

批准 / 不批准 (請圈出您的選擇)

Comments: _____

姓名: _____ 簽名: _____ 日期: _____

透過 DeepL.com (免費版) 翻譯

DELPHI DATA COLLECTION TOOL

DELPHI ROUND ONE REVIEW

Table: Round One Organisational agility framework elements

5-Strongly Agree 4 - Agree 3 - Neutral 2 - Disagree 1-Strongly Disagree	Expert opinion Rating: Elements scoring between 5 & 3 will form part of the final round (Round 2); Alphabetical letters represent expert names	Expert*									Ranked Score*
		Expert-A	Expert-B	Expert-C	Expert-D	Expert-E	Expert-F	Expert-G	Expert-H	Expert-I	
<i>Objective a): Enablers and capabilities of Organisational Agility</i>											
Ecosystem enablement & networks	Ecosystem enablement	4	3	4	4	5	5	5	5	4	4.3
	Establishing networks	5	4	4	5	5	4	5	5	5	4.7
	Facilitating international market access	4	4	4	4	5	5	4	5	3	4.2
	Focus on reindustrialization and transformation	4	4	4	4	5	4	5	4	4	4.3
	Representation of the industry	4	4	5	5	5	4	3	4	5	4.3
Flexible financial support	Loan restructuring	3	3	4	4	5	4	5	5	4	4.1
	Support through grants	4	4	4	5	5	5	2	3	5	4.1
	Innovative funding models	4	5	4	4	5	5	3	5	4	4.3
	Flexibility in funding programs	4	5	4	5	5	5	4	5	5	4.7
Policy support and targeted interventions	Financial incentives for innovation	5	4	5	4	4	5	5	5	5	4.7
	Simplified tax compliance for SMEs	4	5	4	4	5	5	5	4	4	4.4
	Focus on reindustrialization and transformation	5	3	4	4	5	5	1	5	4	4.0
Regulatory compliance and challenges	Compliance as a prerequisite	3	4	4	4	5	5	5	5	3	4.2

	Policy reforms for regulatory and market access	4	3	5	4	4	5	5	5	4	4.4
	Regulatory streamlining and credit access	5	4	5	5	5	5	3	5	4	4.6
Regional integration and sectoral linkages	Regional partnerships and market linkages	5	3	4	5	5	5	4	5	5	4.6
	Regional collaboration	5	3	4	4	5	5	3	5	4	4.2
	Inter-sectoral collaboration	5	3	4	5	5	5	4	5	4	4.4
Organisational culture	Training and development	4	4	4	5	4	5	5	5	5	4.6
	Learning and information sharing	4	4	5	4	5	5	2	4	5	4.2
Organisational structure	Flat structure	3	2	4	5	5	5	4	5	4	4.1
	Effective communication	5	4	5	5	5	5	5	5	5	4.9
	Quick decision-making	4	2	4	4	5	5	3	5	5	4.1
Objective b). Organisational Practices & processes of OA											
Adaptive organizational practices	Cross-functional departments	4	2	5	4	4	5	3	5	5	4.1
	Collaboration with academia	4	3	5	5	5	5	1	5	4	4.1
	Flexible organizational structure	4	4	5	4	4	5	1	5	5	4.1
	Flexible operational processes	4	4	5	4	5	5	1	5	5	4.2
	Flexible production systems	4	4	5	5	5	5	4	5	4	4.6
	Workforce flexibility	5	4	5	5	5	4	5	5	5	4.8
Capacity building and skill development	Mentorship	4	4	5	4	5	5	2	5	4	4.2
	Leadership development	5	4	4	4	5	5	4	5	5	4.6
	Knowledge exchange and best practice sharing	5	4	5	4	5	5	2	5	5	4.4
	Skills development and training	5	5	5	5	5	5	4	5	5	4.9
	Information sharing	4	4	5	4	4	5	1	4	5	4.0

Integration of technology and innovation	Innovative non-standard solutions	5	5	5	4	5	5	3	4	4	4.4
	Data-driven insights	5	3	5	4	5	5	1	5	5	4.2
	Limited expertise in key innovation areas	3	2	5	4	5	5	3	2	3	3.6
	Support for business development and innovation	4	4	5	5	5	5	1	5	5	4.3
Collaborative ecosystem and networking	Collaboration with industrial associations	5	4	5	4	5	5	5	3	5	4.6
	Streamlined ecosystem support	5	3	5	5	5	5	2	5	4	4.3
	Innovative funding models	4	4	5	4	5	4	2	5	4	4.1
	Regional partnerships and collaboration	4	3	4	4	5	5	3	5	5	4.2
	Skills interventions and partnerships	4	4	4	4	5	5	4	5	5	4.4
Objective c). Sense-response frameworks of OA											
Mechanisms for external sensing and feedback integration	Access to market intelligence and industry trends	5	4	4	4	5	5	3	5	5	4.4
	Maintaining close contact with value chain members	5	4	4	5	5	5	2	5	5	4.4
	Development of adaptive support mechanisms	4	4	4	4	5	5	3	5	4	4.2
	Customer feedback	4	5	5	4	5	5	4	5	5	4.7
Operational flexibility and quick response mechanisms	Workforce flexibility	4	5	5	4	4	5	5	5	5	4.7
	Flexible organizational structure	4	4	4	4	5	5	3	5	5	4.3
	Flat organizational structure	3	3	5	4	5	5	4	5	5	4.3
	Flexible production systems	4	4	5	5	5	5	5	5	4	4.7
Leadership and decision-making	Experienced leadership	5	5	5	4	5	5	5	3	5	4.7
	Importance of leadership and basic business principles	4	5	4	5	5	5	4	4	4	4.4

	Leadership and guidance	5	5	4	5	5	5	3	4	5	4.6
	Risk appetite in leadership	4	5	5	4	5	5	2	5	4	4.3
Technology-driven sensing capabilities	Agility in technology and processes	5	4	5	5	5	5	3	5	5	4.7
	Reengineering technology-driven processes	5	4	4	5	5	5	3	3	4	4.4
	Market dynamics and technological advancement	5	4	5	4	5	5	3	5	5	4.6
Stakeholder engagement in sense-response mechanisms	Collaboration and stakeholder mobilization	4	3	5	5	5	5	4	4	5	4.4
	Representation in chambers	5	3	5	4	5	5	1	4	5	4.1
	Stakeholder feedback	4	5	4	5	5	5	4	5	5	4.7
	Stakeholder relationship management	5	5	5	4	5	5	5	5	5	4.9
	Regional partnerships and market linkages opportunities	5	4	5	4	5	5	3	5	5	4.6

Objective d). Best Practices across BRICS countries

Building a collaborative ecosystem for agility	Ecosystem and networks	4	5	4	4	5	4	4	5	5	4.4
	Collaboration and stakeholder mobilization	4	5	4	4	5	4	3	4	5	4.2
	Regional partnerships	4	5	5	4	5	4	5	4	5	4.6
Empowering SMEs through skill development and leadership	Training and development	4	5	5	5	5	4	5	4	5	4.7
	Capacity building	4	4	4	5	5	4	4	5	4	4.3
	Leadership development	4	5	5	4	5	5	2	5	4	4.3
Integration of technology and innovation	Data-driven decision-making	4	5	5	4	5	5	3	5	5	4.6
	Reengineering technology driven processes	4	5	4	4	5	5	3	5	4	4.3

Establishing feedback and sense-response mechanisms	Access to market intelligence and industry trends	4	5	5	5	5	4	3	5	5	4.6
Simplifying financial access and incentive mechanisms	Innovative funding models	4	5	5	5	5	4	3	5	4	4.4
	Loan restructuring options	4	3	5	4	5	5	4	5	4	4.3

Appendix X: Excerpt from the Qualitative Codebook (RO1)

Purpose of the Excerpt

This appendix below provides a representative sample (excerpt) of the codebook used in the study. The excerpt focuses on the subset of codes relevant to Research Objective 1 (RO1) though only one subtheme. The full codebook includes additional codes that informed the analysis but are not reproduced here in full.

Structure of the Codebook

The full coding framework for the study comprised 158 inductively generated codes derived from interview data across all research objectives (RO1–RO4).

The excerpt presented below reflects the subset of codes that directly informed Research Objective 1 and illustrates how the master codes were organised into higher-order subthemes and themes for reporting and analytical clarity.

All research objectives were analysed using this single integrated coding framework, with different subsets of codes contributing to each objective.

Theme: Organisational Policies, Regulatory Environment and Structure as Enablers for SME Agility and Growth

Subtheme: Ecosystem Enablement and Networks

Table 20: Appendix X Excerpt from the Qualitative Codebook (RO1)

Code	Definition	Representative quotation
Ecosystem enablement	Institutional structures enabling SME development	<i>“...need to be designed so that the environment enables the development ...”</i>
Establishing networks	Formation of manufacturing or industry networks	<i>“We must look at establishing a network ...”</i>
Facilitating international market access	Institutional support for export/internationalisation	<i>“...promoting the insertion of MSEs into the international market ...”</i>
Representation of the industry	Industry advocacy and formal representation bodies	<i>“SAFI would be the vehicle...”</i>
Focus on reindustrialization and transformation	National industrial strategy alignment	<i>“Linked to DTIC mandate...”</i>

Notes on Code Selection

The codes included in this excerpt:

- contributed directly to the RO1 findings;
- illustrate how codes were defined and applied consistently; and
- show how related codes were grouped into broader subthemes and themes.

Additional codes were retained in the full codebook for transparency but were not central to the reported RO1 findings.