

**The moderating effect of emerging digital technologies on strategic agility as an
antecedent to strategic resilience in an uncertain and volatile business
environment**

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ABSTRACT

The dissertation evaluates the possible moderating effects of emerging digital technologies such as artificial intelligence, big data, and IoT on the relationship between strategic agility and strategic resilience. In the era of globalisation, technological advancements, volatility, and uncertainty, change is rapid and happens at unprecedented speeds. Business models and established businesses get disrupted at best, and at times, disintermediated. Organisations should be able to continuously adapt to these changes and frictions, evolve and transform their business models to retain sustained competitive advantages.

The study employed a quantitative research approach, where the statistical results revealed a strong positive relationship between strategic agility and strategic resilience, which may be influenced positively when moderated by emerging technologies.

This study contributes to the existing literature on strategic management by integrating theoretical frameworks that emphasise the importance of resource utilisation and technology adoption in the development of dynamic capabilities. The findings derived from this study offer practical implications for leaders considering leveraging digital technologies to enhance their organisations' agility and resilience. Ultimately, this study aimed to amplify the critical interplay between agility, resilience, and the disruptive capabilities of emerging technologies in navigating the complexities of today's business landscape.

KEYWORDS: Strategic agility, resilience, emerging technologies, dynamic capabilities, resource-based view, uncertainty, volatility.

DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the Master of Philosophy in Business Management degree, specialising in Corporate Strategy at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other university. I further declare that I have obtained the necessary authorisation and consent to carry out this research study.

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CHAPTER 1: INTRODUCTION

1.1 Introduction

The contemporary business landscape is characterised by increased globalisation and interconnectivity, causing volatility, uncertainty, ambiguity, hyper-competitiveness and complexity (Forrest et al., 2024). This business environment necessitates organisations to develop and configure unique strategic capabilities to create or sustain competitive advantage (Teece et al., 2016b). Strategic agility and resilience are some of the capabilities that organisations require at a strategic level (Gölgeci et al., 2020). Strategic agility refers to the nimbleness of an organisation to readily adapt and respond to market changes (Tallon et al., 2022). Concurrently, strategic resilience is said to be the characteristic ability of an organisation to not only withstand and recover from disruptive events but to evolve in the face of constant adversity (Morais-Storz et al., 2018; Verreyne et al., 2023). Autonomously, neither strategic agility nor resilience is effective in an erratic and complex operating environment (Gölgeci et al., 2020), these capabilities need to be ambidextrously complementary. Further, modern and emerging technologies are sophisticated and have the potential to influence both strategic agility and strategic resilience significantly (Eisele & Brettel, 2021; Tallon et al., 2022). The importance of organisations and leaders understanding the value of leveraging emerging technologies cannot be underestimated. Scholars like (Ahmed et al., 2022; Tallon et al., 2019) submit that digital technologies could enable organisations to navigate uncertainty and volatility in the operating environment. This view is supported by (Matalamäki & Joensuu-Salo, 2022), who posit that digitalisation positively impacts strategic flexibility, a capability fundamental for competing in an unpredictable and turbulent environment (Conz & Magnani, 2020).

This research aims to evaluate and scrutinise the role of emerging technologies in the interplay between strategic agility and strategic resilience. The research leverages the dynamic capabilities (DC), the resource-based view (RBV), and the technology adoption model (TAM) as the theoretical foundations and frameworks for the study. The research study contributes to the existing literature on strategic management, providing a new insight into the implications in the strategic integration of emerging technologies into business capabilities.

1.2 Background to the research problem

Fundamental uncertainty is pervasive in today's business world. The competitive landscape has become significantly more unstable and complex due to globalisation, highly disruptive business models, and rapid technological progress (Haarhaus & Liening, 2020). The scope of the uncertainties and complexity varies, at times, unswerving, and at times turbulent (Altig et al., 2022). This new normal compels organisational leaders to rethink approaches and practices of sustaining competitive advantage in the face of uncertainty, volatility, unpredictability and turbulent operating environments. Hitt et al. (2021) submit that the “new normal” (Hitt et al., 2021, p. 259) requires a different kind of thinking that will ensure that organisations are equipped for perpetual volatilities.

This modern world requires organisations to be both agile and resilient. Agile, to enable swift response to shocks in the market environment (Doz, 2020), and resilient to adapt to change (Hepfer & Lawrence, 2022). There is an increasing acknowledgement that, whilst agility and resilience may have previously been considered “point-in-time” reactions, the pervasive shocks and instability requires inherent and strategic capabilities that are continuous and in the core fabric of an organisation (Morais-Storz et al., 2018; Xing et al., 2020). Mithani (2020) refers to this continuous and intrinsic resilience as dynamic resilience. These inherent organisational traits do not miraculously appear, they require for organisations to build and refine them over time. Foundational to building these traits are what Teece et al. (1997) referred to as dynamic capabilities. Dynamic capabilities enable organisation to sense, seize and reconfigure their resources. Organisations that have the strategic awareness, and flexibility (Doz & Kosonen, 2010) on how to deploy their resources are better equipped to compete in environments that are munificent with uncertainty and volatility. This level of heightened awareness, flexibility and speed shifts organisations away from adaptation and response to continuous renewal and transformation (Morais-Storz et al., 2018).

Emerging digital technologies such as can play a pivotal role in strengthening the dynamic capabilities that organisations require to be strategically agile and resilient to sustain competitive advantage in a volatile environment (Dayioglu et al., 2024). Whilst previous research exists on the importance of strategic agility in fostering strategic organisational resilience, there is a need for research on the role that modern and emergent digital technologies play in the interplay between strategic agility and strategic resilience.

1.2.1 The importance of strategic resilience in uncertainty

Strategic resilience refers to an organisation's ability to not only recover and bounce back after disruptive environmental events, but to thrive in the face of adversity (Morais-Storz et al., 2018). Ordinarily, resilience, at an organisational level, is synonymous with adapting and returning to a prior state (Grego et al., 2024). In high levels of unpredictability however, the prior state may no longer exist for an organisation to return to (Williams et al. 2017). Therefore, scholars (Morais-Storz et al., 2018; Mithani, 2020) posit that resilience, in a strategic form should be dynamic to enable organisations to thrive and sustain competitive advantage in volatility. The importance of strategic resilience lies in that, organisation with sensing and complementary capabilities, are able to seize opportunities in the midst of volatility, thereby transforming their business models and sustain competitive advantage.

1.2.2 Strategic agility capability

Strategic resilience is characterised by flexibility (Bartuseviciene et al., 2023); similarly, in a recent study that sampled over 4000 organisations, Bughin (2024) found that agility was one of the "crucial capabilities" (Bughin, 2024, p. 128) that contributed to high performance and resilience. Strategic agility is defined as a capability that contains three important paths: (a) strategic sensitivity', (b) resource fluidity', and (c) leadership unity' (Nyamrunda & Freeman, 2021). These assist organisations in being highly aware and able to perceive external strategic changes, and with that knowledge, they can speedily reconfigure their resources to the new perceived opportunities. The third path enables the leadership team to make uniform and speedy decisions to implement new solutions (Clauss et al., 2021). While there are studies on capabilities that contribute positively to strategic resilience, there is limited inquiry on the relationship between strategic agility and strategic resilience. In an unpredictable and uncertain environments strategic agility cannot be favoured over strategic resilience, and inversely, strategic resilience over strategic agility. The two superior capabilities should work together in tandem, where strategic sensitivity and sensing leads an organisation on an innovative path to reconfigure internal and external resources that transform business model and set the organisation on path to sustained competitive advantage (Gölgeci et al., 2020).

1.2.3 The role of emerging digital technologies

Emerging digital technologies are categorised as the fourth industrial technologies; these include technologies like artificial intelligence (AI), Internet of Things (IoT), Blockchain, 3D printing, Big Data Analytics (BDA), Nanotechnology, social technologies, and cutting-edge robotics (Agrawal et al., 2023). The latter technologies have been observed to have a positive role in firming the strategic agility of an organisation and its strategic resilience (Škare & Soriano, 2021). These emerging technologies can be leveraged by organisations to enhance the dynamic capabilities of sensing, seizing and reconfiguring. Technologies like big data analytics, can be leveraged as an underpinning capability to strengthen an organisation's ability to scan and sense the environment for threats ahead of competition Teece (2023). Armed with such information, top management are able to make strategic decisions to reconfigure an organisation's resource to respond to the threat or create growth opportunities. This study examines the moderating role of emerging digital technologies in the relationship between strategic agility and strategic resilience. Given the background issues, the following section describes the research problem.

1.3 Research problem

Consistent with the background issues raised in the previous section, businesses in South Africa are constantly confronted with challenges because of economic volatility, technological disruptions, fluctuating market situations, and socio-political uncertainties (Altig et al., 2022; Nyamrunda & Freeman, 2021). The country's volatile and uncertain conditions, in the form of recurrent power cuts (load shedding), currency variations, regulatory changes, and irregular labour subtleties, make it challenging for organisations to adapt and be resilient constantly (Agrawal et al., 2023). Notwithstanding the increasing significance of strategic agility and strategic resilience, the interaction of these constructs in the context of South Africa has not amply received research attention. Moreover, while digital technologies can potentially strengthen agility and resilience worldwide (Škare & Soriano, 2021), organisations in South Africa struggle with limitations in digital structures and skills deficits, which impede the capacity to leverage these technologies effectively.

This study addresses the critical gap in understanding how emerging digital technologies moderate the relationship between strategic agility and resilience in the specific context of South African organisations. The study seeks to evaluate the extent to which the relationship between strategic agility and strategic resilience improves when emerging technologies are adopted or embraced by an organisation.

1.4 Research Purpose

The previous section highlights the importance of organisation to continuously respond threats, market and environmental turbulent, not by adapting and bouncing back, rather by a continued culture of renewal and reconfiguration (Morais-Storz et al., 2018). To achieve this inherent characteristic, scholars propose that organisations build strategic agility and strategic resilience capabilities (Teece et al.,2016; Mithani,2020; Doz, 2020). Strategic agility is an established field of work, strategic resilience however, is not as established (Morais-Storz et al., 2018), the bounty of business resilience studies is focused on organisational resilience. The gap in literature, is the interplay between strategic agility and strategic resilience in an uncertain and volatile environment. Further, in modern day, the importance of leveraging digital technologies for competitive advantage cannot be overemphasised. As such, the study aims to understand the extent to which leveraging emerging technologies improves the effectiveness of the interplay between strategic agility and strategic resilience.

The overall objective of this research is to quantitatively evaluate the moderating effect of emerging technologies on the relationship between strategic agility and strategic resilience.

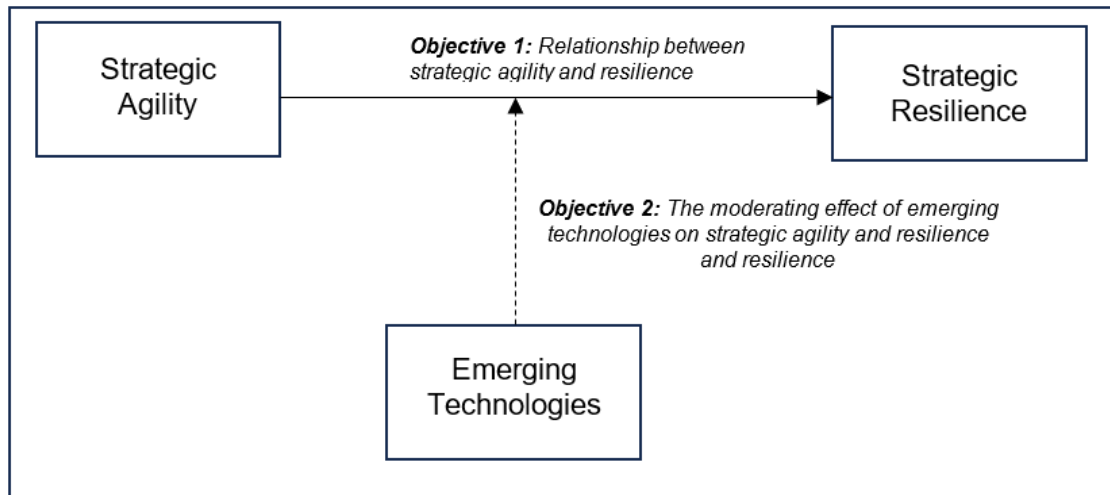


Figure 1: Proposed conceptual framework

The objective of the study will be to fulfil the following sub-objectives:

- **Objective 1:** To assess the relationship between strategic agility and strategic resilience.
- **Objective 2:** To evaluate the moderating effect of emerging technologies on the relationship between strategic agility and strategic resilience.

1.5 Theoretical contribution and business relevance

From a theoretical perspective, the study contributes to overall strategic management discipline, the dynamic capabilities theory, which is an extension of the resource-based theory, as well as the technology adoption theory. The research aims to assess the interplay between strategic agility and strategic resilience, and the extent to which leveraging emerging digital technologies positively or negatively moderates that interplay. This will enrich the body of knowledge in bridging the strategic management with the emerging technology management disciplines.

Most organisations have strong operational resilience capabilities but not strategic ones (Reeves Martin et al., 2022). However, organisations must build and maintain strong strategic and operational resilience capabilities to compete and remain relevant in unprecedented volatility and uncertainty (Bughin, 2024). The study tests the hypotheses that strategic agility is requisite for strategic resilience and how leveraging emerging digital technologies moderates the relationship. The outcomes help organisations build towards strategic resilience and seed the long-term growth and sustained competitive advantage.

1.6 Document structure

The study reported has been structured as follows to provide a logical structure and flow:

- **Chapter 1 Introduction to the research problem**
This section outlines the study's basis, by outlining the research problem and the objectives of the research.
- **Chapter 2 Literature review**
This report section reviews the literature relevant to the study's theoretical constructs and objectives. It also reviews existing research on the constructs as outlined on the conceptual framework.

- **Chapter 3 Research Hypotheses**

The research hypothesis section will develop the study's conceptual framework, objectives, and hypotheses that will be tested.

- **Chapter 4 Research Methodology and Design:**

This section describes the research methodology chosen to execute the study's objectives and aims. It includes the research design, the scope of the research, the measurement instrument, data analysis, limitations, quality and validity, and ethical considerations for the study.

- **Chapter 5 Results**

This section presents the statistical analysis derived from the survey questionnaire.

- **Chapter 6 Discussion**

This section will assess the results of the statistical analysis against the hypotheses mentioned above.

- **Chapter 7 Conclusion and Recommendations**

The concluding chapter of this study will discuss the conclusions, limitations, recommendations for business, and future research opportunities in the scholarship.

1.7 Conclusion

This chapter outlined the context and significance of the research, which focuses on the relationship between strategic agility, strategic resilience, and the moderating role of emerging digital technologies in organisations in South Africa. The research problem was formulated based on the increasing challenges businesses face, faced by organisations, due to technological distractions, economic variability, and resource limitations. Based on the cursory survey of the literature, the chapter identified the gaps in the literature on the interaction between strategic agility and strategic resilience, particularly in emerging markets. Moreover, the research objectives and significance of the study were stated. Overall, this chapter laid the foundation for the purpose of this study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction to chapter

The literature review chapter is designed to explore this study's theoretical and empirical foundations comprehensively. By critically analysing the existing literature, this chapter establishes the footing for understanding how the concepts of strategic agility, strategic resilience, and emerging digital technologies interrelate within the organisational context. Moreover, the chapter provides an understanding of the existing body of knowledge, identifying key concepts, theories, and gaps that inform the conception of the research framework. The chapter also explores the relationships between the latter constructs, particularly how emerging digital technologies moderate the influence of strategic agility on strategic resilience, an essential aspect in dynamic and volatile business settings.

The chapter reviews prior research on how and the extent to which organisations adapt to changes in the business environment through strategic agility and resilience. It explores the importance of dynamic capabilities, the resource-based view, and technology acceptance theories in defining how businesses respond to external forces. The chapter ends with a review of the theoretical background to rationalise the research hypotheses and emphasise the originality of this research, particularly in emerging markets like South Africa. The following section briefly identifies and justifies strategic management as the parent discipline in which the study is located.

2.2 Strategic Management

Strategic management is the overarching discipline under which this research is situated. This is because strategic management accentuates the long-term direction and performance of organisations (Morais-Storz et al., 2018; Teece & Leih, 2016)). Strategic management entails formulating, executing, and evaluating cross-functional decisions and actions that determine how organisations respond to external forces, optimise internal resources, and build and maintain competitiveness, particularly in dynamic and uncertain contexts (Kennedy & Linnenluecke, 2022). It provides guidance for assessing how organisations attain agility and resilience in response to technological innovations and unpredictable market settings (Hepfer & Lawrence, 2022), the focal aspects of this study. Meanwhile, strategic agility and resilience are critical to addressing environmental uncertainties, and this study aligns well with the core principles of strategic management.

Three theories, namely, the Dynamic Capabilities Theory, Resource-Based View (RBV), and Technology Acceptance Model (TAM), have been identified as necessary to provide a robust and complete theoretical basis for understanding these strategic management concepts. These theories guide the literature review and inform the research hypotheses. Thus, the following section analyses the three theoretical frameworks underpinning this study.

2.3 Strategic Resilience

2.3.1 Resilience – A conceptual background

Resilience has been studied extensively over time, whilst the origins of resilience are found in ecological studies (DesJardine et al., 2019), the word resilience has its roots in the Latin language, with its English meaning being “bounce”(Williams et al., 2017). The concept of resilience is interdisciplinary and has, over the years, been studied in several fields of disciplines, including psychology, business management, economics and others (Iftikhar et al., 2021).

Across disciplines, resilience commonly refers to the ability of individuals, organisations or systems to absorb shock and restore to their previous state prior to the shock (Williams et al., 2017). In business and management, the study on resilience has been associated with an organisation’s adaptability and response against disruption or shock (Grego et al., 2024). Kennedy & Linnenluecke (2022), defined resilience as the ability of systems to “absorb disturbance and reorganise despite change” (Kennedy & Linnenluecke, 2022, p. 2757).

These definitions suggest that resilience symbolises stability, where a system can maintain its equilibrium after a disturbance to its norm (Hepfer & Lawrence, 2022), that the purpose of resilience is to maintain the “integrity and cohesion of an organisation” (Gölgeci et al., 2020, p.101) after an adverse circumstance. The definitions of resilience being a system’s absorption and restorative capability, also largely assume that environmental ‘shocks’ are periodic, at a point in time events rather than continuous (Hepfer & Lawrence, 2022), which extends to imply that survival and endurance are synonymous with resilience and are the goal (Morais-Storz et al., 2018).

The resilience concept has become pervasive in business because of the increasingly turbulent, complex, volatile and uncertain operating landscape (Morais-Storz et al., 2018). Repeat shocks and disruptions in the economy and the environment continue to threaten the continuity and very existence of some if not most, organisations (Grego et al., 2024), and organisations face honest confrontations to ensure sufficient and robust resilience capacity. Turbulence and uncertainty are prevalent in the economy and the business environment (Teece & Leih, 2016); organisations should have a solid ability to reinvent themselves; therefore, resilience should be organisations' goal (Morais-Storz et al., 2018). Organisations should be able to absorb shock and proactively adapt to the changing environment (Grego et al., 2024).

2.3.2 Defining Strategic Resilience

Most literature definitions on resilience and organisational resilience predominantly suggest a reactionary response position towards adverse external environmental disruptive events (Bhamra Ran et al., 2011). Where an organisation is forced to bend based on the adverse events and rebounding to its former state prior to the adverse event after having reconfigured the organisation's internal resources according to the adverse effects of the event (Morais-Storz et al., 2018). The issue with this reactive approach, as argued by Morais-Storz et al. (2018), is that, often, organisations cannot quantify the extent of complexity or volatility accurately and, as such, cannot appropriately adjust and configure internal resources to respond accordingly. Secondly, this position suggests that organisations cannot, themselves, proactively be part of shaping the volatility and complexity of the environment through solid sensing capabilities (Williams et al., 2017).

Verreynne et al. (2023), support the argument by (Morais-Storz et al., 2018). These scholars posit that resilience literature tends to be biased towards a reactionary short-term recovery to immediate shocks. A view which overlooks the importance of proactive and strategic responses to disruptions, volatility and turbulence (Verreynne et al., 2023). Mithani (2020), in his work on adaptation, introduces the concepts of recovery and static and dynamic resilience, where static resilience is about reconfiguring internal resources.

The definition of strategic resilience adopted in this paper is premised on the idea that the extent of volatility, turbulence, complexity and uncertainty is consistently high, and therefore, strategically, it is unsensible for organisations to attempt to determine it (Morais-Storz et al., 2018). As such, organisations should not react to sudden adverse

environmental changes but rather reinvent themselves before the environmental changes force them to (Valikangas & Romme, 2013). In presenting the concept of static and dynamic resilience, Mithani (2020) argues that restoration of original equilibrium may not be optimal for an organisation in the face of turbulence. The only possibility for the organisation is to bounce forward, dynamically adapt, and evolve in the face of a changing environment (Mithani, 2020). As per Mithani (2020)'s categorisation, strategic resilience is dynamic.

Strategic resilience continuously anticipates and innovates around trends that threaten an organisation's business model (Valikangas, 2020). Whereas organisational resilience refers to adapting and bouncing back after a crisis, strategic resilience "entails proactively and deliberately endangering change via innovation" (Morais-Storz et al., 2018, p.1184). Anticipation and sensing threats and opportunities are essential for strategic resilience (Hepfer & Lawrence, 2022).

2.3.3 Characteristics of Strategic Resilience

Competitive advantages are evanescent in a volatile, turbulent, complex, and uncertain operating environment. The interconnectedness of the global economy often exhibits these systemic complexities, the "unknown unknowns" (Teece & Leih, 2016); it is, therefore, essential that organisations have the innate ability to cope within the context (Haarhaus & Liening, 2020), or even be creators of such contexts (Morais-Storz et al., 2018). Strategic resilience is characterised by anticipation, adaptability (Mithani, 2020), absorption (Grego et al., 2024), flexibility (Iborra et al., 2020), sensing, seizing and reconfiguration (Teece et al., 2016) capabilities that an organisation possesses and uses to maintain or better its competitive advantage.

2.3.3.1 Adaptability and flexibility

The pursuit of resilience by the organisation can come through significant business model transformation and adaptation to the external environment (Grego et al., 2024). In their work, Grego et al. (2024) cite that an organisation can gravitate toward one of two paths of resilience: the adaptive and the absorptive path. The adaptive path refers to the dynamic resilience outlined by Mithani (2020), where an organisation dynamically adapts to the external environment and evolves or transforms its business model. Mithani (2020) succinctly defined 'adaptation' as an organisation's "capacity to overcome unprecedented changes in the external environment" (Mithani, 2020, p.508).

Similar to the work of Morais-Storz et al. (2018), Grego et al. (2024) qualify that the adaptive path to resilience is anchored by innovation and flexibility capabilities (Grego et

al., 2024). Conz & Magnani (2020), cite resourcefulness, adaptability and flexibility as being essential capabilities on the adaptive path (Conz & Magnani, 2020). *Resourcefulness* refers to an organisation's ability to aggregate diverse resources; *adaptability* is its capability to shift its internal structures and processes in response to external environment threats; and *flexibility* is its ability to pivot quickly, learn rapidly, and make decisions quickly to adapt to changing conditions (Conz & Magnani, 2020).

2.3.3.2 Proactive Innovation

Strategically resilient organisations are proactively innovative; these organisations understand that sustained competitive advantage is cultivated by innovation (Teece, 2023). Morais-Storz et al. (2018) cites a similar view to Teece, in that strategic resilience entails “proactively and deliberately engendering change via innovation” (Morais-Storz et al., 2018, p.1184). Both Morais-Storz et al. (2018) and Teece (2023) postulate that change is the precursor to resilience in an environment normalised with volatility, turbulence, uncertainty, and complexity. Further, Morais-Storz et al. (2018) submits that strategic resilience symbolises the ‘shapeshifting’ required to compete in volatile environments where competitive advantage is short-lived. Innovatively proactive organisations outpace complacency in their established boundaries; these organisations re-discover their future potential value through hyper-experimentation and prototyping (Verreynne et al., 2023).

2.3.3.3 Sensing and anticipation

Like the strategic sensitivity (Doz, 2020;), a proposed meta-capability of strategic agility, sensing is an essential organisational capability. Sensing is one of the dynamic capabilities which Teece et al. (1997), and most recently (Teece et al., 2020), proposed as an essential guide for leaders to navigate complex, uncertain, and volatile environments. Organisations must identify threats and opportunities in a volatile environment before they occur (Teece et al., 2016) .

In their review of the adoption of a blockchain (emerging digital technology) as a dynamic capability, Quayson et al. (2023), stated sensing as being a solid enabler for organisations to gather, analyse and interpret critical market information for crucial trends that allow the organisation to recognise threats and opportunities (Quayson Matthew et al., 2023). Teece et al. (2016) posed a similar view on sensing being an enabler for organisations to collect nuanced information about the environment and have the capacity to analyse and interpret the information to gain insights into the unseen future. In this way, organisations can create the ‘disruption’ as earlier proposed by (Morais-Storz

et al., 2018). Big data analytics, although in the infancy stages (Mikalef et al., 2019), there is empirical evidence that organisations that robustly employ enterprise-wide big data analytics capabilities record good performance and show better resilience through the sensing abilities delivered (Mikalef et al., 2019). Similar to (Mikalef et al., 2019), Teece et al. (2020) also suggested that big data is a vital capability for sensing as it provides organisations with insights from internal and external data channels (Teece et al., 2020).

2.3.3.4 Seizing

Seizing is articulated by Teece (2018) as the capacity of an organisation to organise internal resources to exploit opportunities and respond to emerging threats (Helfat & Peteraf, 2014) in the face of changing and turbulent market conditions. Seizing precisely captures the organisations' capability to exploit opportunities that they have sensed, thus facilitating innovation and strategic responsiveness in a volatile market (Mousavi & Bossink, 2017). Innovation, which Teece (2023) defined as a "primary driver for competitive advantage" (Teece, 2023, p.4), is vital to the 'seizing' dimension of dynamic capabilities. As mentioned earlier, organisations that invest in hype experimentation and prototyping, some of the antecedents of innovation, have a better chance of remaining competitive in a volatile environment (Verreynne et al., 2023). Further, innovative organisations are said to be strategically agile and, therefore, able to reorganise internal resources to respond to changing market conditions.

With these complementary definitions of strategic agility and seizing capabilities, organisations with strong seizing capabilities are strategically agile. This is meaningful to the study because the study hypothesises that there is a strong relationship between strategic agility and strategic resilience.

2.3.3.5 Reconfiguring/ Transforming

Strategic resilience is also said to be characterised by reconfiguration or transformation dynamic capabilities (Teece et al., 2016b). Reconfiguration or transformation capabilities are necessary for the adaptability of an organisation in unpredictable environments; this dynamic capability enables the organisation to renew its resources (Teece et al., 2020). Resource deployment, orchestration and renewal cannot be understated in complex environments (Teece et al., 2020). With strong sensing abilities, top management teams may be strategically prompted to renew their business models and challenge the status quo in their organisations. Sjödin et al. (2023), refers to this renewal capability as a "value optimisation" (Sjödin et al., 2023, p.2) capability which enables organisations and

top management teams to realise sustainable economic growth. Reconfiguration capability works in tandem with the sensing and seizing capabilities (Fainshmidt et al., 2019), where the insights from the sensing capability lead to innovative leverage of internal and external resources to enable business renewal for sustainable competitive advantage in the turbulent and perpetually volatile business environment (Fainshmidt et al., 2019). In their work reviewing artificial intelligence (AI) capabilities for business model innovation, Sjödin et al. (2023) complement the view that a data-driven culture used for monitoring and sensing the environment cultivates innovation, subsequently leading to the renewal of business models in organisations.

2.4 Theoretical Frameworks

2.4.1 Dynamic Capabilities Theory

Volatile, turbulent and rapidly changing business environments require organisations to possess sophisticated, hard-to-replicate capabilities, capabilities which are required to adapt to changing competitive terrains and customer demands (Teece, 2007, 2010).

The dynamic capability theory is seen to be an extension of the resource-based view (RBV) theory (Eisenhardt & Martin, 2000; Lin & Wu, 2014), which was developed by Barney (1991). The theory of dynamic capabilities, as proposed by Teece (2007), addresses the role of capabilities in building, integrating, and reconfiguring resources to cope with turbulent, highly volatile and uncertain operating environments.

Dynamic capabilities in an organisation are said to “govern how an organisation integrates, builds and reconfigures its internal and external competencies to address a changing business environment” (Teece & Leih, 2016, p.18). These capabilities can be leveraged to create, implement and protect intangible assets that support their competitive advantage over time (Fainshmidt et al., 2019), and especially in highly volatile environments (Lin & Wu, 2014). The dynamic capabilities framework is provided by Teece (2007) as being underpinned by three core activities or what Teece (2018) also refers to as highest-order capabilities (Teece, 2018) that is: (i) sensing, (ii) seizing, and (iii) reconfiguring (Teece, 2007).

Sensing capabilities refer to an organisation’s capacity to scan and derive insights from its external environment continuously (Fainshmidt et al., 2019), the seizing capabilities refer to the organisation’s ability to evaluate and mobilise internal capabilities and resources to respond to opportunities (Teece & Leih, 2016), an organisation often needs

to make investments in order to seize opportunities (Fainshmidt et al., 2019). The third activity of reconfiguration refers to an organisation's continual renewal and ability to recombine and reorganise resources and capabilities to optimise synergies within and externally in its operating environment (Fainshmidt et al., 2019). Teece et al. (2016a) refer to this as asset orchestration and integration, which is vital for dynamic capabilities (Teece et al., 2016b). The underpinning components of dynamic capabilities are not interchangeable and act harmoniously with each other. For example, an organisation cannot reconfigure its capabilities and resources without sensing, as this effort could be directionless and not address the challenges birthed by a volatile environment (Fainshmidt et al., 2019). These three components are the cornerstone of the dynamic capabilities theory and differentiate them (dynamic capabilities) from ordinary capabilities.

2.4.2 Resource-Based View (RBV) Theory

(The firm's Resource-Based view (RBV) theory has a long history of adoption in the discipline of strategic management (Chahal et al., 2020). The RBV theory conceptualises organisations as being bundles of resources; the theory has been studied over many decades, and scholars submit that to gain and sustain competitive advantage, an organisation needs to possess Valuable, Rare, Inimitable, and Non-substitutable (VRIN) resources (Lin & Wu, 2014). When firms own these kinds of resources, competitive advantage is said to be inevitable (Chahal et al., 2020). VRIN resources were initially considered by Barney (1991) as the main ingredients for competitiveness. The concept of RBV was developed in the 1990s and has had some significant refinements and extensions over the years; the dynamic capabilities theory was one such extension of the RBV theory (Lin & Wu, 2014).

RBV was extended because of its perceived limitations, particularly when addressing or applying to dynamic and uncertain environments. Whilst it is necessary to own VRIN resources, the RBV theory tends to be static and neglects the need for agility and adaptability in an operating environment that is replete with volatility, uncertainty, turbulence and dynamism (Sun et al., 2024). Another limitation of the RBV theory is its perceived lack of consideration for a firm's external environment, which can diminish the value of a firm's resources, if not sufficiently addressed (Sun et al., 2024).

Scholars over time, however, have argued that solely relying on a firm's existing resources may lead an organisation to be overtaken by competitors; this is where the dynamic capabilities theory becomes a necessary extension of the RBV theory (Lin &

Wu, 2014). Dynamic capabilities theory allows an organisation to leverage its VRIN resources with a deliberate consideration for flexibility and agility to adapt to external changes, uncertainty, volatility and turbulence (Sun et al., 2024). Dynamic capabilities emphasise that an organisation should sense external threats and opportunities, seize the opportunities, and reconfigure its resources to adapt and maintain competitive advantage in an uncertain, turbulent and volatile environment (Sun et al., 2024).

To conclude, the dynamic capabilities theory and RBV are similar in their core assumptions, both these theories qualify that organisations are made up of bundles of resources and that those resources allow the organisation to create sustainable competitive advantage (Ambrosini & Bowman, 2009). Whilst RBV emphasises on the static ownership of VRIN resources (Sun et al., 2024), the dynamic capabilities theory emphasises that, in changing and dynamic environments, competitive advantage comes from the ability of an organisation to deploy and use the resources it possesses, not from the static ownership of the resources (Ambrosini & Bowman, 2009; Lin & Wu, 2014).

2.4.3 Technology Acceptance Model (TAM)

This study will use the Technology Acceptance Model (TAM) to evaluate participants' adoption of emerging technologies. The primary purpose of the TAM is to provide a structured framework within which to understand why and how people and organisations utilise technology (Yadegari et al., 2024). Several adoption models exist, including the TAM, which was introduced in 1989; this model is rooted in two theories, one of reasoned action and another of planned behaviour (Yadegari et al., 2024). The TAM model is the most widely used to evaluate technology adoption (Venkatesh & Bala, 2008). The model is most widely used because it has proved to be a good predictor of IT adoption and use; the model proposes two predictors of use, namely, perceived ease of use and perceived usefulness (Venkatesh & Bala, 2008). The TAM model was extended to TAM2, which further theorised the predictors of perceived usefulness and perceived ease of use (Venkatesh & Bala, 2008).

Subsequently, TAM3 was developed to be more comprehensive than TAM and TAM2. TAM3 offers a complete logical network of factors determining an individual's adoption of information technologies (Venkatesh & Bala, 2008). The model suggests three relationships that were not covered in TAM and TAM2; these are (i) perceived ease of use and perceived usefulness, (ii) computer anxiety and perceived ease of use, and (iii) perceived ease of use and behavioural intention (Venkatesh & Bala, 2008). Venkatesh & Bala, (2008) posited that experience moderates the perceived usefulness, computer

anxiety, and perceived ease of use. The pair believe that it is only with hands-on experience that users of a technology can determine the usefulness, the anxiety and the perceived ease of use for that technology. The TAM3 model's perceived usefulness and ease of use will be adopted to test the adoption of emerging technologies (a construct in the study) in South African corporate organisations. Figure 1 below depicts the TAM3 model, determinants and their relationships.

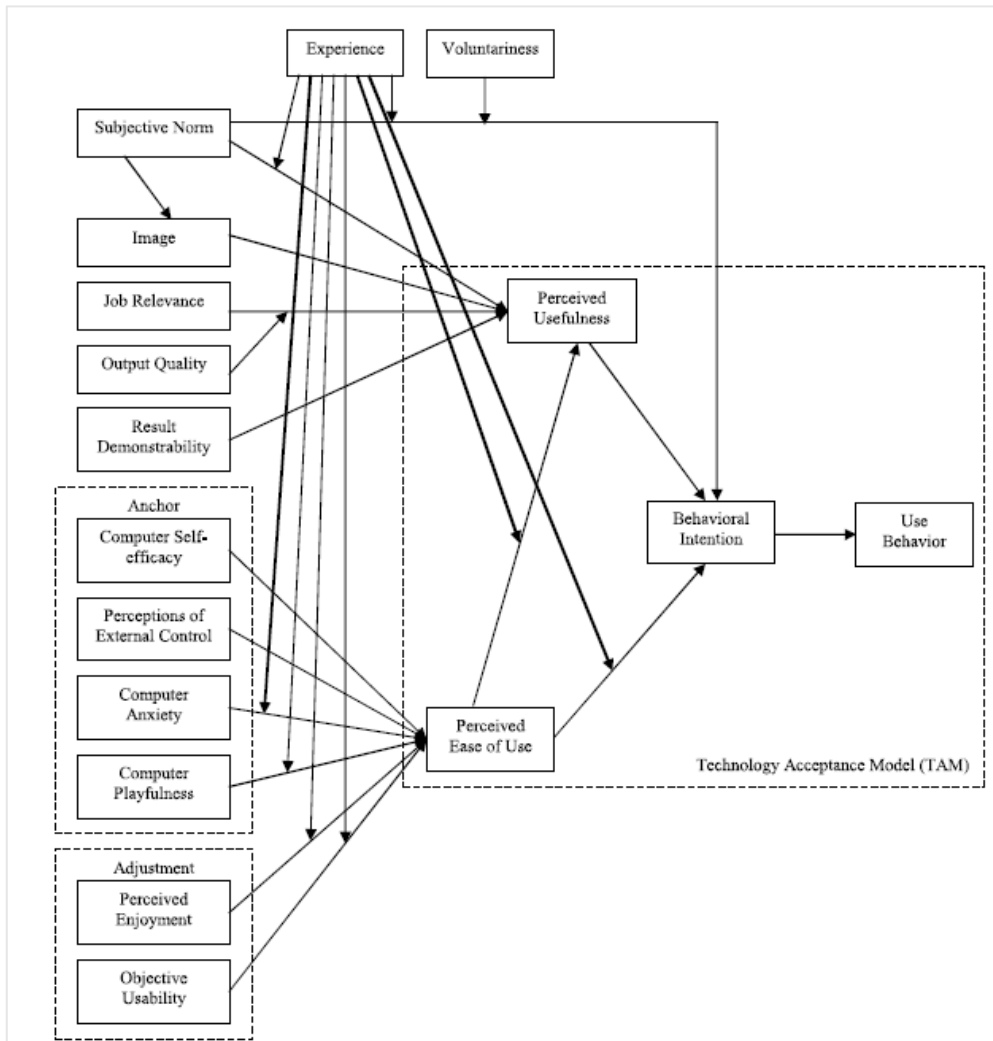


Figure 2: TAM3

2.5 Strategic Agility

Certain concepts and theories in strategic management and planning have been inadequate and vague in addressing what and how organisations need to navigate uncertain, complex, volatile and ever-changing operating environments; the resource-based view (RBV) of the firm is one example of such vagueness (Weber & Tarba, 2014). To resolve for this inadequacy, scholars have suggested business transformation,

development of dynamic capabilities, learning, business model renewal, organisational ambidexterity and flexibility as some of the strategies that organisations can employ to cope with and retain competitive advantage in uncertain and highly volatile environments (Weber & Tarba, 2014). Employing these strategies requires organisations to exercise or possess strategic agility capabilities.

Strategic agility is said to be the bedrock of an organisation's ability to renew, transform and reconfigure its business model (Doz & Kosonen, 2010), this is because highly agile organisations can move and allocate resources where it matters most to swiftly seize opportunities or change direction without compromising on the stability of an organisation (Tallon et al., 2022). Strategic agility was defined by Tallon et al. (2022) as the degree to which an organisation can respond to "sudden, disruptive, and unanticipated market events with ease, speed and dexterity" (Tallon et al., 2022, p.641). The capacity for an organisation to consistently adapt to uncertain, turbulent and ever-changing environments is what defines strategic agility (Xing et al., 2020). Pinsonneault & Choi, (2022) cite that strategic agility is not a static "point in time capability"; it is a constant and consistent character trait of an organisation (Pinsonneault & Choi, 2022). Ahammad et al. (2021) described strategic agility as a high-order capability that enables an organisation to adapt to and handle unpredictable and "unknown events" (Ahammad et al., 2021, p.2).

In assessing strategic agility, Adomako et al. (2022), cites that the new normal, characterised by a complex, uncertain and dynamic environment, requires firms to respond "effectively and quickly" (Adomako et al., 2022, p.1) to unprecedented market and environmental changes to sustain competitive advantage. Scholars argue that firms should develop high-order capabilities to seize opportunities presented by uncertainty and volatility. Similarly, Teece et al. (2016) suggest that developing strong capabilities is essential for developing strategic agility, which is vital for operating in a volatile, uncertain and turbulent environment (Teece et al., 2016). Strategic agility illustrates an organisation's ability to orchestrate and configure internal resources to respond to unprecedented environmental changes.

2.5.1 Strategic agility and capabilities

As strategic agility is vital for organisations to navigate uncertainty and volatility, it is essential to understand the relationship between strategic agility and capabilities (Adomako et al., 2022). Scholars posit that strategic agility is not an ordinary capability

but a high-order and meta-capability (Ahammad et al., 2021; Weber & Tarba, 2014). Conceptually, strategic agility is the capability that enables proactiveness in changing organisational direction to seize new opportunities presented by a volatile, turbulent and uncertain market environment. Contrastingly, Teece et al. (2016) suggest that strategic agility is not a dynamic capability, but rather, it (strategic agility) is yielded by strong underlying dynamic capabilities in an organisation. This contrasting argument was similarly shared by Doz & Kosonen (2008) who described strategic agility as a collective of underpinning meta-capabilities, the scholars highlight strategic sensitivity and awareness, resource flexibility and leadership commitment and unity as the three requisite capabilities or dimensions for strategic agility (Ahammad et al., 2021; Nyamrunda & Freeman, 2021). *Strategic sensitivity & awareness* refers to an organisation's ability to appreciate the changes in the environment and to have a sense of the threats and opportunities presented by the volatile and turbulent business environment (Clauss et al., 2021). Like the reconfiguration capacity in the dynamic capabilities' theory, *resource flexibility* is the ability of the organisation to reconfigure and reorganise resources to find new ways of creating value and sustaining competitive advantage (Clauss et al., 2021). *Leadership commitment & unity* refers to the top management team's ability to unite in making rapid and bold decisions that best serve the organisation, rather than serving individual interests and organisational politics (Clauss et al., 2021).

Drawing from the perspectives of the dynamic capabilities' theory, an organisation ought to develop capabilities across the business to enhance the organisation's ability to sense environmental changes, seize opportunities and reconfigure resources (Teece & Leih, 2016). The notion of an organisation developing capabilities, often intangible, to support the meta-capability, strategic agility in this case, was also coined by (Brannen & Doz, 2012) and later referenced by (Ahammad et al., 2021). The founding scholar of the dynamic capabilities' theory, Teece (2018) advances that, firms with weak dynamic capabilities risk not recognising opportunities that are presented by volatility, as such, these organisations tend to internalise their transformations. On the other hand, those organisations possess stronger capabilities, the top management teams have the capability and the autonomy to radically transform their business models to seize opportunities (Teece, 2018).

Recent studies have considered the role of emerging digital technologies in enhancing strategic agility, suggesting that these technologies can serve as critical enablers of organizational flexibility and adaptability (Adomako et al., 2022). When correctly

deployed, strategic agility that is enabled by emerging technology capabilities can enable strategic sensitivity and resource fluidity (Tallon et al., 2022). In their work, Adomako et al. (2022) concluded that organisations that possess essential technology capabilities will be rapid in seizing opportunities in uncertain and dynamic operating environments. This study will therefore qualify emerging technologies as capabilities that underpin strategic agility (Adomako et al., 2022).

2.5.2 Characteristics and importance of strategic agility

The importance of strategic agility is underscored by the acknowledgement of the consistency and rapid rate of change in the business operating environment (Adomako et al., 2022).

Across literature, strategic agility is synonymous with high flexibility that stimulates rapid responsiveness (Weber & Tarba, 2014). Strategically agile organisations have an ability to rapidly respond to opportunities and threats that are presented by a consistently changing market environment (Clauss et al., 2021). Secondly, strategic agility is characterised by ambidexterity (Tallon et al., 2022). Strategically agile organisations are both agile and stable (Tallon et al., 2022). These organisations can exercise flexibility, responsiveness and adaptiveness whilst maintaining the organisation's resilience, efficiency and reliability (Tallon et al., 2022). This view is supported by Ahammad et al. (2021) who argue that achieving strategic agility is complex because an organisation must traverse two contexts. The ambidexterity of strategic agility is achieved through what (Ahammad et al., 2021) refers to as antecedents to strategic agility, that is, exploitation and exploration capabilities. The exploitation capabilities allow the firm to respond to current market and customer needs by adapting existing products and services (Ahammad et al., 2021). On the other hand, an organisation's exploration capabilities enable the organisation to implement new business models, products and services (Ahammad et al., 2021). Both exploitation and exploration capabilities are essential enablers for an organisation's flexibility in responding to uncertain, ambiguous and dynamic market environments.

Thirdly, strategic agility is characterised by the possession of superior capabilities (Adomako et al., 2022), which enable an organisation to sense the environment, reconfigure its resources to seize the opportunities presented by the environment, and help the top management team make swift and strategic decisions (Ahammad et al., 2021). This view is supported by (Doz & Kosonen, 2008), who suggest that organisations need three meta-capabilities to sustain strategic agility, they mention strategic sensitivity,

resource fluidity and leadership unity as the three meta-capabilities requisite for strategic agility. Similarly, Teece & Leih (2016) have concluded that in environments with extreme uncertainty (and volatility), an organisation needs to build strong entrepreneurial capabilities to overcome or respond to ambiguous futures (Teece & Leih, 2016). The scholars listed sensing, seizing and transformation as such capabilities that organisations need to harness strategic agility. The literature on the characteristics and capabilities of strategic agility are relevant to this study as the study aims to test the hypotheses of emerging technologies as key dynamic or superior capabilities (Irfan et al., 2019) requisite for strategic agility in an uncertain, volatile and turbulent operating environment. The study proposes that, emerging technologies, when deployed correctly, can strengthen the strategic agility of an organisation, which, the study proposes, is an antecedent for the strategic resilience of an organisation, in the context of dynamic environments.

2.5.3 Interplay between strategic agility and strategic resilience

Strategic resilience is about continual and constant adaptation to a changing, uncertain and turbulent market environment (Morais-Storz et al., 2018), and Xing et al. (2020) defines strategic agility as an organisation's capacity to adapt to unanticipated changes in an operating environment rapidly. Tallon & Pinsonneault (2011) when referring to strategic agility, it mentions rapid response to unanticipated and disruptive market events. The interplay between strategic agility and resilience is increasingly recognised as essential for organisations to thrive in consistently volatile and unpredictable environments.

Literature by (Gölgeci et al., 2020; Mithani et al., 2021) indicates that strategic agility and resilience are vital strategic capabilities for organisations to thrive in an environment characterised by volatility, uncertainty, ambiguity, and turbulence. In such environments, consistent evolution and renewal led by innovation and insight is the name of the game for building and sustaining competitive advantage (Teece & Leih, 2016). As such, strategic agility and strategic capabilities should be developed in tandem (Grego et al., 2024), as they both play a significant role in enabling organisations to respond to and adapt to changes in the environment inherently (Gölgeci et al., 2020).

2.6 The moderating effect of emerging technologies

In a recent study focusing on big tech and strategic management, Teece (2023) uncovered emerging technologies such as big data, data analytics, machine learning

(ML) and artificial intelligence (AI) as organisational capabilities (Teece, 2023). The research on uncertainty, volatility, and intricacies of the operating environment suggests that organisations of different sizes and industries appreciate that competitive advantage is temporary and that results are unpredictable. As such, the degree to which organisations can be agile and resilient to the speed of turbulence and punches is the vital differentiator between the success and failure of organisations (Teece et al., 2016; Teece, 2018; Adomako et al., 2022). Digital technologies, the latest and emerging, were found to be one of the core competencies or lower-order capabilities that are a bedrock for 'strong' dynamic capabilities (Škare & Soriano, 2021), the sensing, seizing and reconfiguring dynamic capabilities. As per the literature reviewed in the sections above, these dynamic capabilities are core to strategic agility and resilience.

The other core competencies are identified also to include innovation, knowledge management, networking, decision-making, speed, responsiveness, and speed capabilities (Jafari-Sadeghi et al., 2022). This research study hypothesises that adopting emerging digital technologies strengthens an organisation's ability to be more agile and, thereby, resilient. Using statistical analysis, the study will test how adopting emerging technologies affects the relationship between strategic agility and strategic resilience.

2.6.1 Definition of emerging technologies

Rotolo et al. (2015) Have defined emerging technologies as “*a relatively fast growing and radically novel technology characterised by a certain degree of coherence persisting over time and with the potential to exert socio-economic domains which are observed in terms of the composition of actors, institutions and patterns of interactions among those, along with the associated knowledge production processes*” (Rotolo et al., 2015, p. 1840). In the exact definition, the scholars add that the impact of emerging technologies is only realisable in future and remains “somewhat uncertain and ambiguous” (Rotolo et al., 2015, p.1840) in the emerging phase (Rotolo et al., 2015).

Emerging digital technologies refer to technologies such as artificial intelligence (AI), big data analysis (BDA), advanced robotics, Internet of Things (IoT), blockchain, web3 and others (Ceipek et al., 2021).

2.6.2 Emerging digital technologies as capabilities

Literature on dynamic capabilities and resource-based view theories reviewed in earlier sections suggests that organisations with strong dynamic capabilities are better positioned to adapt and respond to turbulent and volatile operating environments (Teece, 2018). Sensing, seizing, and transformation are the dynamic capabilities referred to by (Teece, 2018). Teece (2018) further stated that these dynamic capabilities underpin strategic resilience and agility. Similarly, Doz (2020) submit strategic sensitivity, resource fluidity and leadership unity as the meta-capabilities that underpin strategic agility (Doz, 2020).

Underpinning the dynamic and meta-capabilities are the low-order capabilities, as posited by research from scholars such as (Pinsonneault & Choi, 2022; Škare & Soriano, 2021; Tallon et al., 2022) indicates that digital technologies positively affect dynamic and meta-capabilities and, consequently, strategic agility and resilience (Ahmed et al., 2022). Similarly, Sjödin et al. (2023) argues that artificial intelligence (emerging technology) is a capability or capacity that enables organisations to improve resource efficiency. Tallon et al. (2022) similarly argues that sensing (a dynamic capability) needs low-order technology capabilities to navigate an uncertain environment and discern weak and ambiguous market cues (Tallon et al., 2022).

The complementary arguments by the scholars preclude that emerging digital technologies are low-order capabilities vital for supporting and influencing the meta and dynamic capabilities that underpin strategic agility and strategic resilience (Tallon et al., 2019). The scholars (Tallon et al., 2019, Tallon et al., 2022) have done significant work researching the role of information technology capabilities on organisational agility.

2.6.3 The effects of emerging digital technologies on strategic agility

Several scholars discuss that emerging digital technologies play a vital role in enabling strategic agility (Eisele & Brettel, 2021; Tallon et al., 2022). Organisations are increasingly leveraging the adaptability and efficiency of emerging technologies such as big data analytics, artificial intelligence, the Internet of things, cloud computing, and digital platforms to navigate a constantly volatile environment better (Ahmed et al., 2022). Eisele & Brettel (2021) found through their research that emerging digital technologies have a positive contribution to sensing agility and responding agility (Eisele & Brettel, 2021). This construct and its moderating role for the relationship between strategic agility and strategic resilience will be unpacked further during the research study.

2.7 Conclusion

Organisations are plagued with structural uncertainties, forcing them to explore maturing their strategic resilience capabilities. Flexibility and agility characterize the resilience of an organisation. Leveraging (D. Teece et al., 2016b) dynamic capabilities, strategic agility is a dynamic capability, and a strong anchor for competitive advantage (Adomako et al., 2022). Dynamic capabilities are underpinned by strong organizational core competencies, these can range from leadership structures to sophisticated emerging digital technology solutions, as such, (Eisele & Brettel, 2021) found that these technologies have a positive effect on sensing and responding agility, as underlying dimensions for strategic resilience.

digital technology solutions, as such, (Eisele & Brettel, 2021) found that these technologies have a positive effect on sensing capabilities that are underlying for strategic agility and strategic resilience.

The review of the literature outlines the foundational theoretical work presented by scholars like Teece (2007). The dynamic capabilities theory sets a strong foundation onto which the literature on strategic agility and strategic resilience can build, as the theory posits that sensing, seizing and reconfiguring dynamic capabilities are foundational to strategic resilience (Fainshmidt et al., 2019). Similarly, Doz (2020) proposes that to maintain sustained competitive advantage, organisations need to have strong foundational capabilities that are foundational to strategic agility, the scholars list strategic sensitivity, resource fluidity and leadership unity as such foundations (Doz., 2020).

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CHAPTER 3: RESEARCH HYPOTHESES

3.1 Introduction to the Chapter

This chapter will outline the objectives and hypotheses for the study.

3.2 Conceptual Framework

This study aims to evaluate the moderating effect of emerging technologies on strategic agility as an antecedent to strategic resilience in uncertain and volatile environments. Using a quantitative research method, the study aims to understand the relationship between strategic agility and strategic resilience when moderated by the adoption of emerging technologies. The objective of the study will be operationalised into the following two research objectives, and these will be used for testing the hypothesis:

- i. **Objective 1:** To assess the relationship between strategic agility and resilience in an uncertain and volatile operating environment.
- ii. **Objective 2:** To evaluate the moderating effect of emerging technologies on the relationship between strategic agility and resilience.

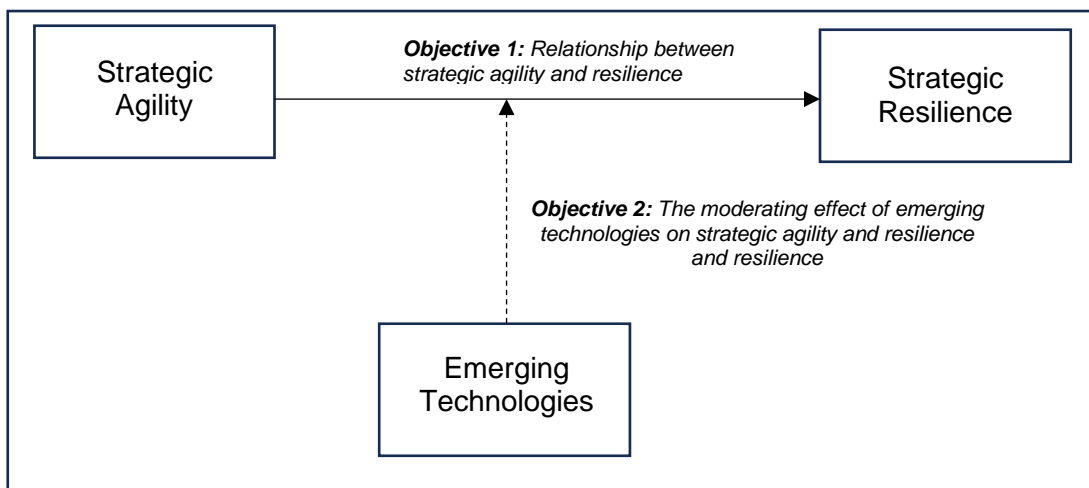


Figure 3: Proposed conceptual framework

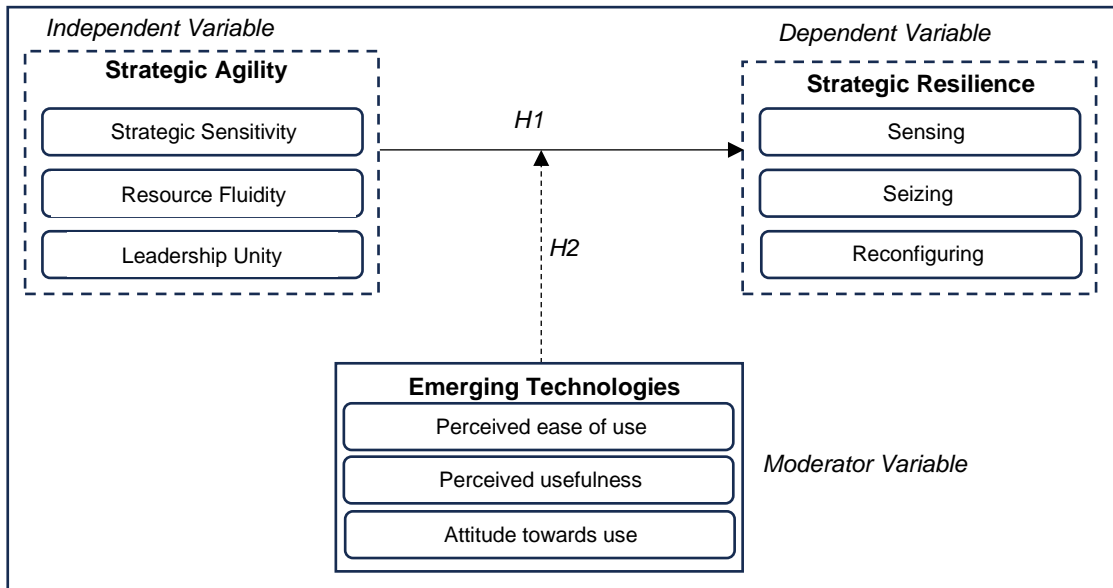


Figure 4: Proposed theoretical framework

A theoretical framework was developed from the conceptual framework outlined in Figure 1 above, as depicted in Figure 2 above. The theoretical framework depicts the relationship between theoretical constructs. Strategic agility is an independent variable; strategic resilience is a dependent variable, whilst adopting emerging technologies is a moderator variable. The theoretical frameworks of dynamic capabilities (DC), resource-based view (RBV), and the technology adoption model (TAM) were used as the foundational frameworks to understand the constructs of the study.

3.3 Hypotheses

Hypothesis defines quantitative research study statements that propose relationships between constructs (Bell et al., 2019). The research study's objectives can be operationalised through these hypotheses that can be tested statistically (Bell et al., 2019) and, based on the testing, can either be supported or rejected. The following hypotheses will be used to evaluate the study's research objectives:

Objective 1: To assess the relationship between strategic agility and resilience in an uncertain and volatile operating environment.

H₁: There is a positive relationship between strategic agility and strategic resilience.

Objective 2: To evaluate the moderating effect of emerging technologies on the relationship between strategic agility and resilience.

H₂: Emerging digital technologies positively moderate the relationship between strategic agility and resilience

CHAPTER 4: RESEARCH METHODOLOGY AND DESIGN

4.1 Introduction to research methodology

Given the objectives of this study, a positivist and explanatory research design were employed. For data collection, a quantitative method, using a survey questionnaire, was used. This chapter will outline the research methodology that was adopted for the study. It will include the rationale for the research design, population, sampling method, unit of analysis, measurement instrument, and data collection process. The approach to data analysis will also be discussed, including the statistical analysis techniques used to analyse the collected data. This chapter will also detail these techniques' assumptions, validity, reliability, and limitations.

4.2 Research design

4.2.1 Purpose of the design

The literature was evaluated based on the business problem to develop a theoretical basis for the study. The literature evaluation enabled the understanding and identification of the research gaps in different theories that frame the business problem. The study's objective was operationalised into testable hypotheses that were tested through the collection and analysis of data. These hypotheses theorised a relationship between the identified constructs, strategic agility and strategic resilience. Based on the analysis, the hypothesised relationships between constructs were supported or not supported. These results were compared to the existing literature to draw conclusions and recommend further research to contribute to the scholarly. The choice of research design is consistent with the literature on the theoretical constructs, where the aim was to evaluate the extent to which these constructs relate to each other. Accordingly, Creswell (2015), explaining the characteristics of explanatory research, cites the design, which includes data collection and statistical testing of the hypothesised relationships between constructs, hence the consistency.

4.2.2 Philosophy

The positivist philosophy was adopted for the study and aligned with the explanatory research design. The positivist philosophy is an epistemological position that is informed by objectivity (Bell et al., 2019). The philosophy assumes that answers can be found by measuring and analysing quantitative data. For this study, existing theories were used to develop hypotheses, which were tested using a structured method of analysing data collected through a survey questionnaire.

4.2.3 Approach to theory development

The approach used for theory development was deductive, which aligns with the positivist philosophy, whose logic is deductive (Bell et al., 2019). The approach also aligns with the explanatory research design selected for this study. This approach was selected because the constructs for the study were deduced from the existing literature to enable research on a business problem (Bell et al., 2019). The identified constructs were operationalised into research hypotheses that could be tested. A survey questionnaire was developed and used to collect data, the results of which were used to test the hypotheses statistically.

4.2.4 Research Strategy and Methodological Choice

The study uses a quantitative methodology. Due to the limited study period, a mono-quantitative approach was used, with a single data collection technique and single instance (Molina-Azorin et al., 2010). This choice was further supported by the need to collect consistent quantitative data to enable reliable statistical analysis to test the hypotheses set out in the objectives section (Creswell, 2015).

4.2.5 Time Horizon

The study utilised a cross-sectional time horizon; data was collected at a single point in time, representing a snapshot view (Saunders et al., 2012). The time horizon choice was aligned with the research design, and the study's main objective was to evaluate how variables are related. The survey data collected during the data gathering process regarding agility, resilience, and moderating effect of emerging technologies was a snapshot of the respondents' organisations while participating in the survey.

4.3 Population

A population refers to a complete set of units or people with specific characteristics; out of a population, a sample is derived (Saunders et al., 2012). The population of relevance for this study consisted of executives and senior managers of corporate and for-profit organisations across business sectors in South Africa. The population was appropriate to the study's objectives, outlined as a quantitative evaluation of the relationship between strategic agility and strategic resilience when moderated by emerging technologies. Organisational executives and senior managers are responsible for the strategic direction and execution of the organisation. As such, the population selected should be well-equipped to understand the organisations' approaches to leveraging emergent digital technologies. The approach was to evaluate a diverse range of organisations in

different sectors/industries of different sizes and tenures to bring broader perspectives into the study. This study's analysis was at a micro level, focusing on individual executive leaders and senior managers.

4.4 Unit of analysis

The unit of analysis was at the individual level through survey questionnaires to a sample of executive leaders and senior managers of corporate and for-profit organisations across sectors in South Africa. This was used as a criterion for participation in the study.

4.5 Sampling Method

A sample is a segment selected from a population that is being studied (Saunders et al., 2012). The proposed sampling method for this research study is the non-probability sampling. The choice of the sampling method was guided by the fact that the researcher did not have access to the total population (Bell et al., 2019), as such, the selection process for the sample was not randomised. Non-probability sampling is also appropriate as it is recommended for cases with limited time and resources; the method covers a wide range of sampling strategies (Bell et al., 2019). This method is not without limitations; some of the challenges with the non-probability method include selection bias, where, as Bell et al. (2019) states, "human judgement will affect the selection process" (Bell et al., 2019, p.240).

Regarding the study's sample size, Saunders et al. (2012) suggest that a sample size of 30 or more will result in a distribution that is close to normal. In quantitative research, however, a bigger sample size is desirable as it enables the reliability of the statistical analysis. A sample size that is too small can compromise the reliability of the study's statistical results. For this study, the sample size formula defined by Green (1991, as cited in Memon et al., 2020) was used to determine the sample size required for the study and its statistical reliability. The formula is $N > 50 + 8m$, where N represents the number of samples for statistical analysis, and m denotes the number of constructs in the study (Memon et al., 2020). The formula calculates the minimum sample size required for this study, based on the study's three constructs ($N > 50 + 8(3)$), at 75. A minimum sample of 150 was targeted to ensure alignment with the required sample sizes for the various statistical tests.

4.6 Measurement instrument

The measurement instrument for this study was a structured and self-administered questionnaire executed through an online survey tool and coded accordingly. The advantage of this approach was the ability to access participants in a systematic and standardised way (Saunders et al., 2012).

The survey questionnaire included a participation criteria question to ensure that the participants could be filtered based on the requisite sample, senior managers and executives of for-profit (corporate) organisations. The survey questionnaire consisted of two sections; the first consisted of categorical questions to assess the sample's demographics at individual and organisational levels. The categorical questions included the tenure of the participants at their current role and organisation, the age of the organisation, the industry in which the organisation operates, the number of employees in the organisation, and the function for which the participant is responsible. This information will be used to profile the industry types, organisation type and size, and leadership tenure, all of which may influence strategic agility (independent variable) and strategic resilience (dependent variable). These control variables (Saunders et al., 2012) were kept constant in the study. The participants' anonymity was stated in the first part of the survey.

The second section of the questionnaire consisted of questions on the theoretical constructs. These will be measured using a Likert scale, which helps reflect the strength or weakness of the respondent's attitude to a question relative to another respondent.

The study's survey questionnaire included an introduction which detailed the objective of the study, the time commitment required from the participants to do the survey, and the voluntary and anonymous nature of their participation. The survey questionnaire has been submitted in Appendix A for reference.

4.6.1 Strategic agility

Strategic agility is defined by Tallon et al. (2022) as an organisation's ability to respond to disruptive and often unanticipated events in the operating environment (Tallon et al., 2022). Similarly, (Xing et al., 2020), captured strategic agility to be the capacity of an organisation to adapt to uncertain, volatile and constantly changing environments (Xing et al., 2020). To measure strategic agility, the study adopted the extant scale developed by Tallon & Pinsonneault (2011), who operationalised strategic agility into eight (8) items

related to some basic questions, such as " How quickly can your organisation respond to changes in aggregate consumer demand?" This study measured these on a seven-point Likert scale, with 1 = *Strongly agree* and 7 = *Strongly disagree*. A subsequent study affirmed the scale's reliability to be a Cronbach Alpha of between 0.7 and 0.8 (Ferraris et al., 2022).

4.6.2 Strategic resilience

Strategic resilience refers to an organisation's ability to sense or learn of changes in the environment whilst the changes are still emerging (Valikangas & Romme, 2013). Hepfer & Lawrence (2022), defined strategic resilience as the capability of an organisation to "anticipate and respond to threats" (Hepfer & Lawrence, 2022, p.15) that impact its strategy. The scholars in both definitions characterise strategic resilience as the ability to anticipate threats (or opportunities). The study utilised the work of (Chen et al., 2021) to measure strategic resilience. The scholar posits that organisational resilience has five (5) dimensions, which include strategic (Chen et al., 2021), These were measured on a seven (7) Likert scale in the study, where 1 = *Strongly agree* and 7 = *Strongly disagree*.

4.6.3 Emerging technologies

Emerging technologies are defined as technologies that are fast growing and whose potentials are still unfolding (Rotolo et al., 2015). These technologies include artificial intelligence (AI), big data analytics (BDA), advanced robotics, Internet of Things (IoT), blockchain, web3 and others (Ceipek et al., 2021). The section of the questionnaire on emerging technologies was preceded by a question asking whether participants' organisations adopted any emerging technologies; this was a Yes/No question. The question was extended to the types of emerging technologies adopted; these were provided as a selection list.

The study used the third technology adoption model (TAM) to measure the adoption of emerging technologies in the participants' organisations. The TAM3 model is used to study why and how people and organisations use technology (Yadegari et al., 2024). The model consists of three main measurement themes, operationalised into sub-themes. The models aim to measure the perceived ease of use (PEU), the perceived usefulness (PU), and the behavioural intention (BI). The study adopted 17 items from the model and measured them on a seven (7) Likert scale, where 1 = *Strongly agree* and 7 = *Strongly disagree*. The reliability for the scale is a Cronbach Alpha of 0.7 – 0.8.

4.7 Data collection process

The data collection process followed a two-pronged approach. Firstly, a convenience sampling approach was used to select the sample using the researcher's professional social media platform (LinkedIn) and professional network to identify the appropriate individuals who met the participation criteria. The criteria for participants were executives, senior managers or heads of departments across various business sectors in South Africa.

Secondly, a snowball technique was followed. With this technique, the participants who were approached to participate in step one was requested to distribute the survey to their social and professional networks. The snowball method, whilst preferred for this study, does have some shortcomings. One of the shortcomings of the method is sample bias and the risk of the sample being more homogenous than the population (Bell et al., 2019).

4.8 Pilot testing of the survey

Ethical clearance for the study was obtained on August 8, 2024, following which the study's survey pilot was distributed to 8 participants for testing. The test assessed the survey questionnaire for gaps, ambiguities, and potential improvements. The respondents provided feedback and suggestions on the questionnaire and its completion time. No questions were added to the questionnaire; however, two words were swapped with their synonyms for clarity on one of the questions, and a selection option for "other" was added to the question "Which function are you leading?". Because the structure of the survey questionnaire was not changed, no further ethical clearance was requested. The ethical clearance approval is provided in Appendix B. The survey questionnaire was then distributed to the targeted participants.

4.9 Data Analysis

4.9.1 Data preparation

4.9.1.1 Editing

Following the data collection, statistical analysis was followed to analyse the data. In their chapter on quantitative data analysis, Bell et al. (2019) state editing, coding, and treatment of outliers as the process that precedes the data analysis. The responses to the survey were analysed during the editing stage. A total of 119 responses were saved, 92 of the responses were completed to 100%. Further, 7 of the 92 qualified responses As such, 85 valid questionnaire responses comprised the sample size for analysis. This data was imported into Excel for coding and preparation for import into SPSS. Two of

the 85 responses carried forward for analysis were found to have missing data. This missing data was handled using the listwise deletion method on SPSS. The listwise method excludes the responses with missing data (Bell et al., 2019), and as such, only 83 of the responses were valid for the analysis. Table 1 summarises the sample data collected.

4.9.1.2 Assessment of outliers

There was no detection of outliers on the sample data.

4.9.1.3 Coding

The response data was coded in IBM SPSS Statistics 29. A codebook was developed and is provided in Appendix E.

4.9.2 Data analysis

4.9.2.1 Descriptive analysis

Descriptive data analysis was conducted on the categorical questions that were included to frame and contextualise the sample and its characteristics, in alignment with the research objectives and the hypothesis. The categorical questions included the respondents' industry, size of their organisation, their business function and years of experience in a senior role.

4.9.2.2 Reliability

The Cronbach's alpha test was conducted on the sample data to ascertain the internal consistency of the measurement scales operationalised through the constructs. Pallant (2016) recommended a minimum of 0.7 as a score for a Cronbach's alpha test. All constructs for this study were tested and certified reliable based on the proposed minimum score.

4.9.2.3 Validity

The KMO and Bartlett's test was done to test the validity of the constructs. The KMO measures the adequacy of the sample. The result of this test is displayed in Table 10. A KMO value of 0.6 is recommended for factor analysis to be performed on the constructs. The recommendation for the Bartlett's test is 0.05 ($p < 0.05$) level of significance to indicate that a factor analysis can be performed on the constructs. All the KMO values were above 0.6 and the p-values were ($p < 0.05$) as shown in Table 10. This indicated that the Exploratory Factor Analysis (EFA) was suitable.

4.9.2.4 Assumptions of single linear regression

To test for normality in the sample distribution, the skewness and kurtosis tests were performed. Additionally, the Kolmogorov-Smirnov normality test was done, including the Q-Q plots and histograms, which are more a visual representation of the sample distribution. The results for the Kolmogorov-Smirnov, all three constructs reflected a p-value of less than 0.05, indicating that the constructs all deviate from normal distribution. The skewness and kurtosis z-scores however, generated results that represented normal distribution of the sample. The tests were contradictory.

4.10 Limitations

- The measurement scale for strategic resilience was adopted from the work of (Chen et al., 2021), the scale is a derivative of an organisational resilience measurement scale. The literature narrowed on strategic resilience is still lacking, and there are limited measurement scales that are specifically focused on strategic resilience construct (Verreynne et al., 2023). This limitation might hinder the study from fully capturing the perceived dimensions of strategic resilience.
- The study's data collection method was limited to the survey instrument. Emerging technologies are a new field of study (Rotolo et al., 2015), and strategic resilience literature is limited. Therefore, the study may have benefited from a mixed-method approach to ensure further probing of the constructs' nuanced aspects.
- The non-probability sampling method is known to introduce biases (Bell et al., 2019) potentially, as such, the sample might not comprehensively represent the total population.

4.11 Conclusion

This chapter detailed the research design and methodology used for this study. As illustrated in Figure 4 below, the design employed a positivist philosophy with a deductive approach. The study is quantitative, and data was collected through a standardised survey questionnaire, the responses for which enabled the testing of the hypotheses proposed in Chapter 3 of this report. The results of the hypotheses testing will be discussed in Chapter 5 of this report. The survey questionnaire was first pilot-tested before being distributed to a broader sample. The questionnaire was based on extant measurement scales. The IBM SPSS Statics 29 tool was used to statistically analyse the

collected data. The analysis included descriptive statistics, reliability and validity assessments, an approach to hypotheses testing, and the limitations of the research design for this study.

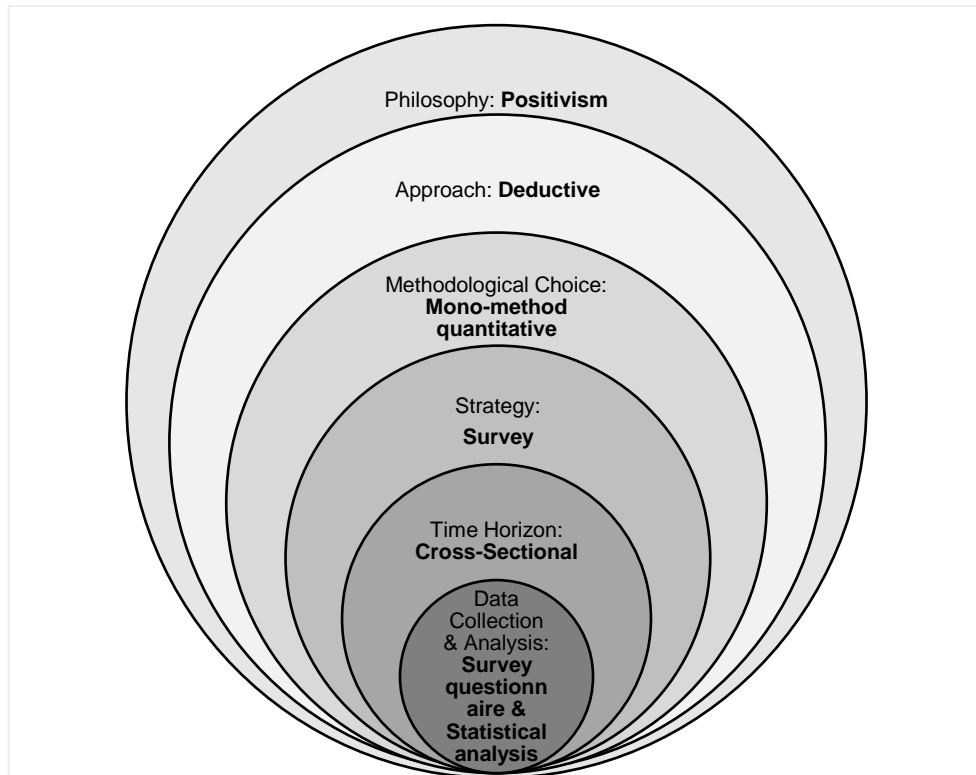


Figure 5: The 'research onion' adapted from (M. N. Saunders, 2019)

CHAPTER 5: RESULTS

5.1 Introduction to Chapter

This chapter summarises the results of the sample data collected through a survey questionnaire. It first presents an outline of the sample data, followed by the descriptive statistics of the categorical data associated with the valid responses. The chapter then presents the results of reliability, validity, EFA, normality, and homoscedasticity and concludes with the results of the hypotheses defined earlier in Chapter 3. The results of the different tests will be summarised within the body of the Chapter.

5.2 Research Sample Data

A total of 119 survey responses were received, of which only 92 were fully completed, and 27 were found to be partially completed. The incomplete responses were discarded from the data set. The questionnaire consisted of a screening criteria question (Q1). As discussed in Chapter 4, the study sample criteria were senior and executive employees of for-profit (corporate) organisations. Where the response was negative for the question, “Are you in an executive or senior management role (Yes/No)?” the responses were excluded from the analysis. This data set accounted for seven responses.

As such, 85 valid questionnaire responses were considered for further analysis. This data was imported into Excel for coding and preparation for import into SPSS. Two of the 85 responses carried forward for analysis were found to have missing data. This missing data was handled using the listwise deletion method on SPSS. The listwise method excludes the responses with missing data (Bell et al., 2019), and as such, only 83 of the responses were valid for the analysis. Table 1 summarises the sample data collected.

Table 1: Summary of sample data collected

Description	Value
Total number of responses received	119
Responses discarded for partial completion	-27
Responses discarded based on population criteria	-7
Handled through listwise deletion on SPSS	-2
Total number of valid responses	83

Source: Generated by the researcher

5.3 Descriptive statistics

The questionnaire had five demographic-related questions to segment the respondents. The questions related to respondents' tenure in a senior decision-making role, the function for which the respondent was responsible, and the industry, size, and age of the organisation where the respondents were employed. The questionnaire also included two questions relating to the adoption of emerging technologies in the respondents' organisations, as well as the types of emerging technologies that were being adopted by the organisations.

5.3.1 Categorical data

Table 2 below represents a crosstabulation of the respondents' roles and tenure. The results show that most 57,83% (n=48) respondents had five or fewer years of experience in a senior or executive role. This is followed by 24,09% (n=20) of the respondents having 5-10 years of working experience. Only 7% (n=6) of the respondents had 15 or more years of senior or executive experience.

Table 2: Length of tenure crosstabulation

	How long have you been in a senior management or executive role?					Total
	0-5 years	5-10 years	10-15 years	15-20 years	20+ years	
Are you in a senior management or executive role? Yes	48	20	9	3	3	83
Percentage (%)	57,83	24,09	10,84	3,61	3,61	100

Source: SPSS Output

Table 3 below shows the frequency distribution of the industry in which the respondents worked. The results indicate that 26,5% (n=22) were employed in the banking industry, followed by 22,84% (n=19) in the information and communications technology industry. 27,1% (n=29) of the respondents were collectively employed in the mining, engineering, automotive and manufacturing industries. It is observed that the wholesale and retail trade industries and the social and community services sectors had an equal number of respondents (n=5) each, collectively making up 11,8% of the respondents on the survey. The remaining 12,8% of the responses were distributed across the other five sectors, namely, agriculture and forestry, construction, energy (incl. oil, gas, and electricity), hospitality and tourism. The results represent a healthy distribution of respondents across sectors/industries, with a significant focus on the banking, information and communication, mining and manufacturing.

Table 3: Industries

Industry type	Frequency(N)	Percentage (%)
Agriculture, forestry and fishing	1	1,2
Banking, financial services, insurance, real estate and business services	22	26,5
Construction	3	3,6
Energy such as oil, gas, electricity	2	2,4
Hospitality, tourism incl. hotels and restaurants	3	3,6
Information and communication technology	19	22,8
Manufacturing, automotive industry, food manufacturing	10	12,0
Mining and engineering	13	15,6
Social and community services	3	3,6
Pharmaceuticals and healthcare	2	2,4
Wholesale and retail trade	5	6,0
Total	83	100

Source: Generated by the researcher

Table 4 provides the frequency distribution of the number of employees the respondents' incumbent organisations employ. This will assist the researcher in understanding the sizes of the respondents' organisations. This will assist the researcher to understand if there is a correlation between the size of the organisation and the use or adoption of emerging technologies.

Table 4: Size of organisation

Number of employees	Frequency	Percentage (%)
1-10	3	3,6
11-50	5	6,0
51-250	16	19,3
More than 250	59	71,1
Total	83	100

Source: Generated by the researcher

Table 5 shows the frequency distribution of the age of the organisation. 30,1% of the respondents' organisations of employment were established organisations with over 60 years of existence, 22,9% were between 15-30 years old, and 16,9% were in 30-45 years

of existence. 15,7% of the respondents worked for organisations with existence age of between 1 - 15 years, and 14,5% worked for organisations with 45-60 years of existence.

Table 5: Age of organisation

Age of organisation	Frequency	Percentage (%)
1-15	13	15,7
15-30	19	22,9
30-45	14	16,9
45-60	12	14,5
>60	25	30,1
Total	83	100

Table 6 shows the respondents' functional responsibilities. These are the responses to the question, *Which function are you leading?* The results show that most respondents are responsible for IT (information technology) management. This population is represented by 28.9% (n=24) of the sample population. The other option was represented by 19.3% (n=16) of the population. This option was designed as a free text option for respondents whose functions were not represented in the questionnaire. The responses provided in text format for this response included fraud prevention, projects, non-financial risk management, innovation and strategy, compliance, quality, socio-economic development, engineering, product management and new business development.

Sales and marketing were the third highest-represented function, at 15.7% (n=13). The distribution across functions correlates with the diverse industry distribution, as represented in Table 4 above.

Table 6: Respondent's functional responsibility

Function	Frequency (N)	Percentage (%)	Cumulative Percentage (%)
Sales and marketing	13	15,7	15,7
Operations	8	9,6	25,3
Finance	8	9,6	34,9
RnD	6	7,2	42,2
Customer services	2	2,4	44,6
Human Resources	4	4,8	49,4
Information technology management	24	28,9	78,3

Legal, corporate governance, and regulatory services	2	2,4	80,7
Other	16	19,3	100
Total	83	100	

Source: SPSS

Regarding the adoption of emerging technologies, as summarised in Figure 5 below, 64,4% of the respondents indicated that they are adopting emerging technologies in their organisations, 19,5% were not sure if their organisations adopted any emerging technologies, and 15,9% said they did not adopt any emerging technologies.

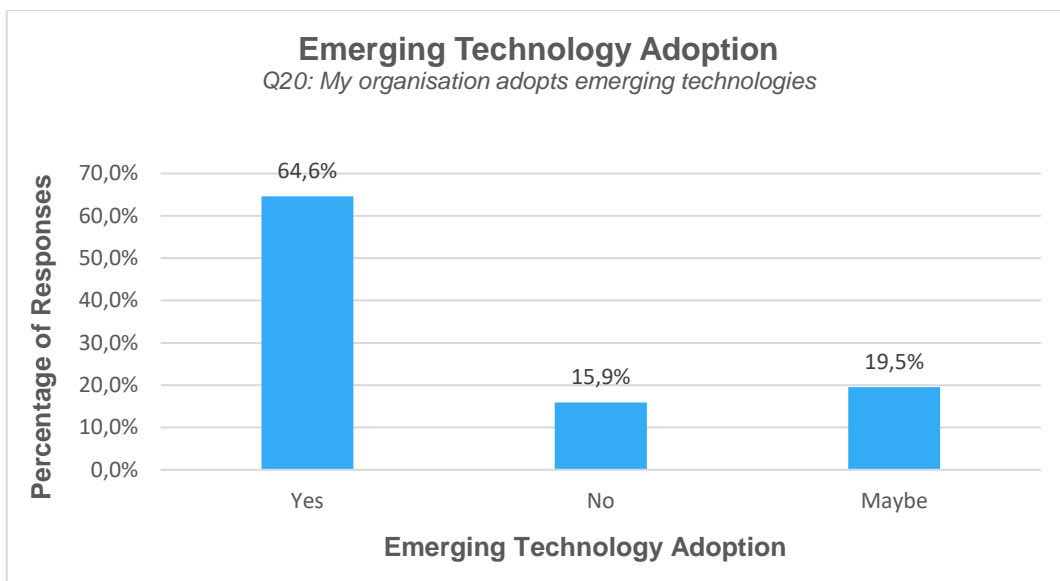


Figure 6: Emerging technologies adoption
Source: Generated by the researcher

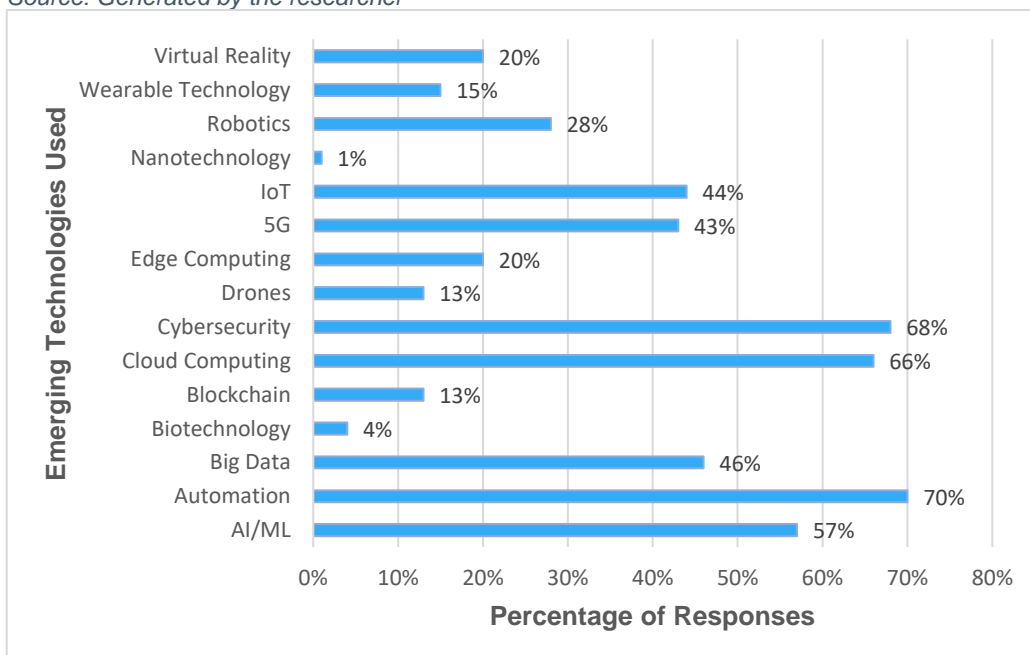


Figure 7: types of emerging technologies used
Source: Generated by the researcher

5.3.2 Likert-scale data

Table 7 represents the descriptive statistics for the Likert-scale questions: Q7-11 related to the strategic resilience construct, Q12-19 related to the strategic agility construct, and Q22-37 related to the emerging technologies construct. The result considers the number of responses, the minimum and maximum responses received, the mean score per item and the standard deviation per item. The highest mean score was 3,94, and the lowest mean was 1,35. The highest mean was received for Q18; the question was related to the speed at which an organisation can adopt newer technologies (such as AI, blockchain, and big data) to produce better, faster, and cheaper products and services. The lowest mean was received for Q24, which asked about the increased level of productivity that an organisation would gain from using emerging technologies.

Table 7: Descriptive statistics for Likert-scale data

		Number	Minimum	Maximum	Mean	Std. Deviation
Strategic resilience	Q7	82	1	6	2,49	1,468
	Q8	82	1	7	2,57	1,414
	Q9	82	1	7	2,59	1,396
	Q10	82	1	6	2,72	1,476
	Q11	82	1	5	2,16	1,060
Strategic agility	Q12	82	1	7	3,02	1,670
	Q13	82	1	7	3,23	1,814
	Q14	82	1	7	3,54	1,744
	Q15	82	1	7	3,05	1,609
	Q16	82	1	7	3,78	1,892
	Q17	82	1	7	3,68	1,602
	Q18	82	1	7	3,94	1,940
	Q19	82	1	7	3,72	1,702
Emerging technologies	Q22	82	1	5	1,38	,660
	Q23	82	1	6	1,46	,849
	Q24	82	1	3	1,35	,530
	Q26	82	1	3	1,46	,652
	Q27	82	1	7	1,72	1,158
	Q28	82	1	5	1,61	,913
	Q29	82	1	6	2,48	1,390
	Q30	82	1	6	2,61	1,312
	Q31	82	1	6	2,54	1,178
	Q32	82	1	6	2,66	1,335
	Q33	82	1	6	2,22	1,207
	Q34	82	1	4	1,74	,858

	Q35	81	1	5	2,05	,960
	Q36	82	1	7	1,77	1,022
	Q37	82	1	5	1,65	,935
	Valid N (listwise)	81				

Source: SPSS Output

Table 8 depicts the descriptive statistics for research constructs. Like the result in Table 7 above, the minimum and maximum responses were recorded, as well as the mean and the standard deviation. Strategic agility as a construct scored the highest mean at 3,49, whilst emerging technologies construct had the lowest mean of 1,91.

Table 8: Descriptive statistics for research constructs

Construct	Number	Minimum	Maximum	Mean	Std. Deviation
Strat_Res	82	1,00	5,60	2,50	1,03481
Strat_Agil	82	1,13	6,88	3,49	1,42798
Emerg_Tech	82	1,00	3,67	1,91	,64215
Valid N (listwise)	82				

Source: SPSS Output

5.4 Reliability and validity testing

5.4.1 Reliability

A Cronbach's alpha was conducted to assess the stability and consistency (Bell et al., 2019) of the measurement scales. Reliability measures the degree to which survey questions for each construct measure the same construct (Pallant, 2020). Table 9 below presents the results of the test per construct. The ideal score for a Cronbach's alpha is said to be .7 (Pallant, 2020; Bell et al., 2019). Each of the constructs was tested for reliability, the results of which were above .8. These suggest a "very good internal consistency reliability" (Pallant, 2020, p.105).

Table 9: Cronbach's Alpha for constructs

Construct	Number of items	Cronbach's Alpha
Strategic Resilience (Strat_Res)	5	.811
Strategic Agility (Strat_Agil)	8	.928

Emerging Technologies (Emerg_Tech)	16	.886
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Source: SPSS Output

As discussed in the preceding chapter, extant measurement scales were used for the constructs. For strategic resilience (*Strat_Res*), a measurement scale from the work of (Chen et al., 2021) was used. According to Chen et al. (2021), the strategic resilience scale has good internal consistency with a Cronbach's alpha of 0.8; this study has a Cronbach's alpha of 0.81. The strategic agility (*Strat_Agil*) measurement scale was affirmed reliable by (Ferraris et al., 2022) at a Cronbach's Alpha of 0.7 and 0.8. This study's Cronbach's Alpha for the strategic agility measurement scale was 0.928. The emerging technologies (*Emerg_Tech*) scale was adopted from the technology acceptance model (TAM3). The measurement scale is reliable at a minimum Cronbach's Alpha of 0.7. In this study, the Cronbach's Alpha for emerging technologies is calculated at 0.886, indicating good internal consistency.

5.4.2 Validity

5.4.2.1 Factor analysis

The sample data was insufficient for a confirmatory factor analysis (CFA), thus the exploratory factor analysis (EFA) was conducted on each construct's respective question items in this study. The EFA was conducted to determine if the study should or should not reduce numbers of construct items into smaller composite constructs which can be used for further analysis (Pallant, 2020).

The data first had to be assessed for suitability to proceed with the EFA. This suitability was assessed through the evaluation of the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. A KMO value of 0.6 or higher, and Bartlett's Test of Sphericity of 0.05 level of significance (Pallant, 2020) indicates that an EFA can be performed on the constructs. As displayed in Table 11 below, the results of all three constructs exceed the minimum thresholds of 0.6 for the Kaiser-Meyer-Olkin (KMO), the results support the suitability of the data for factor analysis.

Table 10: KMO and Bartlett's test results

KMO and Bartlett's Test			
	Strat_Res	Strat_Agil	Emerg_Tech
Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy.	0,706	0,917	0,793

Bartlett's Test of Sphericity	Approx. Chi-Square	149,813	447,812	768,213
	df	10	28	105
	Sig.	<0.001	<0.001	<0.001

Source: Generated by the researcher based on SPSS output

Once the suitability was confirmed, the total variance and rotated matrix output were considered to determine if the construct data should be reduced to related components. Based on the Eigenvalue one rule, it was found that the **Strat_Res** and the **Strat_Agil** constructs are loaded onto one component each (see Tables 12 and 13). The **Emerg_Tech** construct, however, loaded on three components and had to be rotated. Table 14 below shows the total variance explained for this construct.

Table 11: Component matrix: Strat_Res

Component Matrix	
	Component
Strategic Resilience	1
Our company can focus on its core business.	0,623
Our company can anticipate unfavourable factors in development promptly.	0,804
We pursue a robust strategic growth model.	0,845
We can balance endogenous and exogenous growth patterns	0,792
We can match strategic objectives and operational capabilities very well	0,718
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

Table 12: Component matrix: Strat_Agil

Component Matrix	
	Component
Strategic Agility	2
Respond to changes in aggregate consumer demand.	0,820
Customise a product or service to suit an individual customer	0,797
React to new product or service launches by competitors	0,883
Introduce new pricing	0,774
Expand into new regional or international markets.	0,864
Change (expand or reduce) the variety of products available for sale	0,859
Adopt new technologies (for example, Blockchain, AI, Big Data) to produce better, faster, cheaper products and services	0,827
Switch suppliers to avail of lower costs, better quality or improved delivery times	0,709
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

Considering the eigenvalue rule of one, three components in Table 14 below were identified to be accounting for 69,19% of the cumulative variance, for the Emerg_Tech variable. Component 1 accounted for most of the variance of 42,84% and an Eigenvalue of 5,999.

Table 13: Total variance explained Emerg_Tech

Total Variance Explained			
Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	5,999	42,849	42,849
2	2,308	16,486	59,336
3	1,357	9,695	69,031
4	0,865	6,176	75,207
5	0,677	4,834	80,041

Source: Generated by the researcher based on output from SPSS

The results of the factor analysis for the Emerg_Tech construct are displayed in Table 15 below. The results identify three factors that indicate the loading of the construct items to the respective factors. In three instances, an item is loaded onto more than one component. This is also supported by the Scree Plot in Figure 7 below.

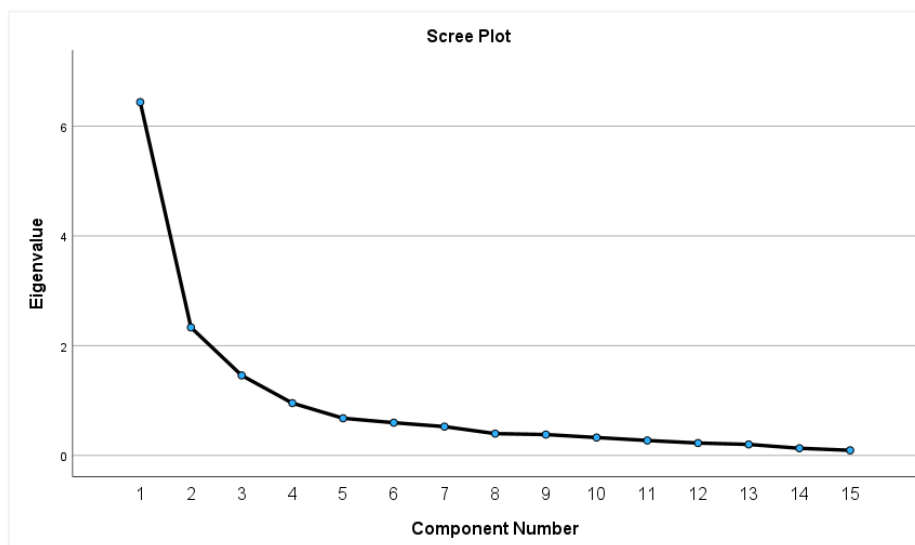


Figure 8: Scree Plot
Source: SPSS Output

The Emerg_Tech construct adapted the technology adoption model measurement instrument. As such, in the factor analysis, Component 1 relates to perceived usefulness (PU), Component 2 relates to perceived ease of use (PEU), and Component 3 relates to *behavioural intention to use (BI)*. There was an item loading onto two components with low factors; this item was removed from the scale as they did not load at a minimum of 0.5 as recommended by (Hair et al.,2019), who recommends a minimum of 0.40 for a factor loading. Once the item was removed, the factor analysis was re-produced on the construct items. Table 15 below shows the rotated component matrix. One item is still cross-loading; however, the outer loading is at the factor of ± 0.4 , and the item loads on Component 1 with a satisfactory loading of above 0.6. For this study, this construct will not be reduced.

Table 15: Rotated component matrix (Emerg_Tech)

Rotated Component Matrix^a			
	Component		
	1	2	3
Using Emerging Technologies in our organisation would enable us to accomplish tasks more quickly	0,611		
Using Emerging Technologies would improve our organisation's performance	0,887		
Using Emerging Technologies in our organisation would increase our productivity	0,808		
Using Emerging Technologies would enhance the effectiveness of work in our organisation	0,775		
Using Emerging Technologies would make it easier for my teams to perform their jobs	0,786		
Learning to operate Emerging Technologies would be easy for our teams		0,835	
Our teams would find it easy to get Emerging Technologies to do what the teams need them to do		0,898	
My teams' interaction with Emerging Technologies would be clear and understandable		0,784	
It would be easy for our teams to become skilful at using these Emerging Technologies		0,741	
Our teams would find Emerging Technologies easy to use			0,804
Our organisation intends to use Emerging Technologies more in the future			0,772
Emerging Technologies are important for our organisation to use			0,654
Emerging Technologies are important in our organisation	0,640		0,498
The benefits of using Emerging Technologies are apparent to me and our organisation	0,756		

Source: SPSS

5.5 Statistical assumptions tests

The normality and homoscedasticity tests were performed prior to performing the statistical tests for this study. These will guide the researcher to select the most suitable statistical test for testing the hypotheses. The normality test will provide a view into the

distribution of the data, including the data's skewness and kurtosis, this will guide if there is any necessity for data transformation to enable analysis (Cohen et al.,2019).

5.5.1 Normality test

Normality of the sample distribution was assessed by calculating the z-values for skewness and kurtosis, Kolmogorov-Smirnov test for normality and by assessing the Q-Q plots for each construct.

Table 15 below indicate the results of the skewness and kurtosis test which show that the skewness and kurtosis of all three constructs have z-values less than ± 1.96 , which represents approximate normal distributions. None of the constructs show significant asymmetry or excessive peakiness. These results suggest that the data can be analysed using parametric statistical techniques, as there are no concerns regarding non-normality.

Table 14: Skewness and Kurtosis z-value

Descriptives							
Construct	N	Mean	Std. Deviation	Skewness		Kurtosis	
				Std.Error	z-skewness	Std.Error	z-kurtosis
Strat_Res	82	2.50	1.03	0.26	0.80	0.52	0.54
Strat_Agil	82	3.49	1.42	0.26	0.50	0.52	0.54
EmergTech	82	1.9357	0.64	0.26	0.80	0.52	0.223

Source: Generated by the researcher from SPSS output

Secondary to the skewness and kurtosis tests, the Kolmogorov-Smirnov and Shapiro-Wilk normality tests to validate the normality result produced by the Skewness and Kurtosis test. Table 16 below shows the results for the constructs on this study. The results for all three constructs reflect p-value of less than 0.05, indicating that the constructs all deviate from normal distribution.

Table 15: Kolmogorov-Smirnov and Shapiro-Wilk normality results

Tests of Normality						
Construct	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Strat_Res	0.189	82	<,001	0,926	82	<,001
Strat_Agil	0.119	82	0.006	0.958	82	0.009
EmergTech	0,114	82	0,01	0.944	82	0.001

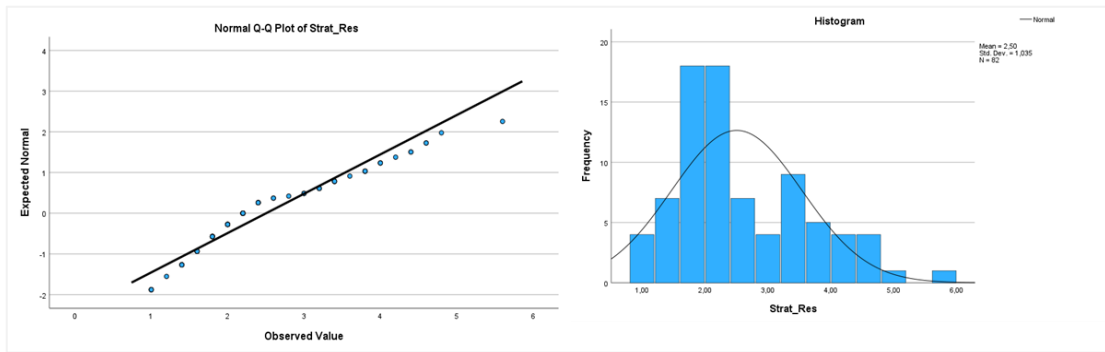


Figure 9: Q:Q Plot and Histogram for Strat_Res
Source: SPSS Output

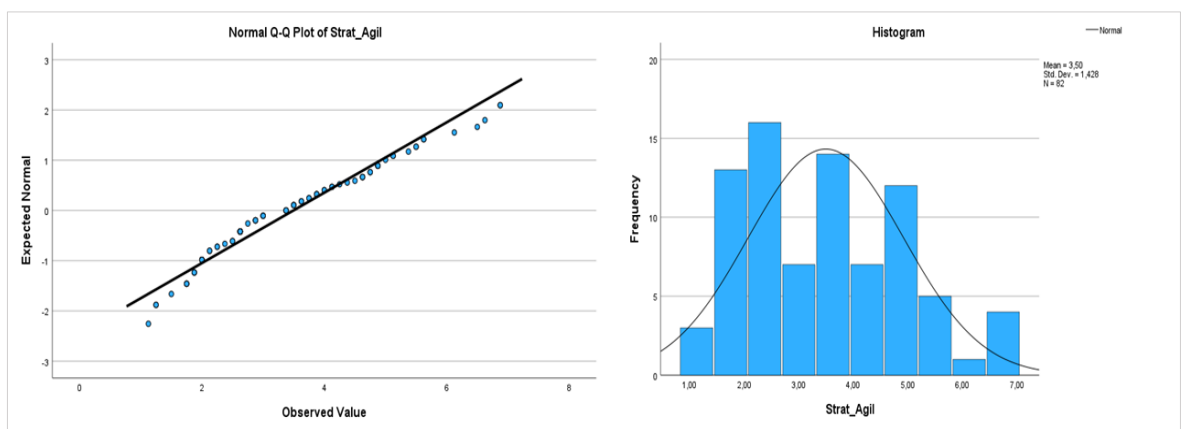


Figure 10: Q:Q Plot and Histogram for Strat_Agile
Source: Output from SPSS

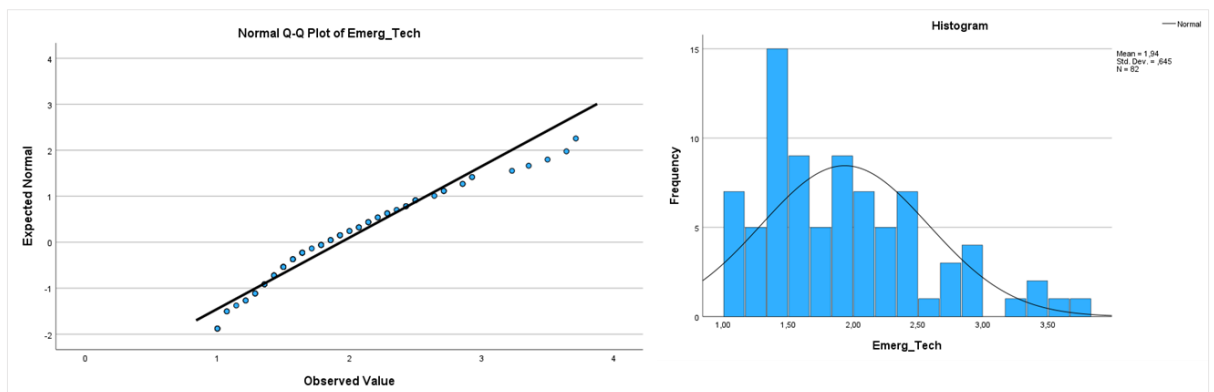


Figure 11: Q:Q Plot and Histogram for Emerg_Tech
Source: Output from SPSS

The tests for normality represented contradictory results, with the Skewness and Kurtosis tests suggesting an approximate normal distribution, and the Kolmogorov-Smirnov and Q:Q plot test reflecting a non-normality in the data distribution. Based on these results, it is reasonable to conclude that the data is distributed, and due to the simplistic nature

of the conceptual model, a parametric simple linear regression will be used to test the hypotheses for this study.

5.6 Correlation matrix

The Spearman correlation test was used to evaluate the correlation between the underlying constructs. According to (Creswell, 2015), the correlation matrix also assesses the proposed relationships, which will be evaluated during the hypothesis testing. In considering the correlation, the direction of the relationship needs to be considered, a positive correlation coefficient indicates a direct relationship, and a negative coefficient indicates an inverse relationship (Pallant, 2020).

Table 16: Spearman correlation matrix for constructs

		Strat_Res	Strat_Agil	Emerg_Tech
Strat_Res	Correlation Coefficient	1,000	,702**	,345**
	Sig. (2-tailed)		0,000	0,001
	N	82	82	82
Strat_Agil	Correlation Coefficient	,702**	1,000	,302**
	Sig. (2-tailed)	0,000		0,006
	N	82	82	82
Emerg_Tech	Correlation Coefficient	,345**	,302**	1,000
	Sig. (2-tailed)	0,001	0,006	
	N	82	82	82

Source: Generated by the researcher from SPSS output

The strength of the relationship is represented by the magnitude of the correlation coefficient. The statistical significance of the relationship is represented by the p-value, where $p < 0.05$ is statically significant. The correlation observation from this study is that;

- For **Strat_Res and Strat_Agil** – there is a strong positive correlation between the two constructs.
- For **Strat_Res and Emerg_Tech** – there is a moderate positive correlation between the constructs.
- For **Strat_Agil and Emerg_Tech** – There is a weak positive correlation between the constructs.

5.7 Testing of the Hypotheses

Given the normality conclusion on the distribution of the data, and the model type for this study, a simple linear regression was selected for the statistical analyses on the

hypothesis. The relationship will be quantified through coefficients and confounding variables.

5.7.1 Hypothesis 1

Hypothesis 1 of the study was to evaluate the *relationship between strategic agility (Strat_Agil) and strategic resilience (Strat_Res)*. A simple linear regression was used to evaluate the strength of the relationship.

- **Hypothesis 1:** There is a significant positive relationship between strategic agility and strategic resilience.
- **Null hypothesis 1:** There is no relationship between strategic agility and strategic resilience.

The model summary results presented in Table 17 show the regression model. The R-Squared value suggest that approximately 48.1% of the variance in the dependent variable (Strat_Res) can be described by the independent variable (Strat_Agil).

Table 17: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,694 ^a	0,481	0,475	0,74992	0,481	74,235	1	80	0,000

a. Predictors: (Constant), Strat_Agil

b. Dependent Variable: Strat_Res

Source: Output from SPSS

The ANOVA test results presented in Table 18 below. The regression sum of squares is 41.748, indicating the variation in the dependent variable (Strat_Res) that can be attributed to changes in the independent variable (Strat_Agil). Contrastingly, the residual sum of squares is 44.999, accounting for the variation not explained by the model. The total sum of squares stands at 86.738, which reflects the overall variation in the dependent variable. With 1 degree of freedom (df) for the regression and 80 df for the residual, the mean square for the regression is 41.748. The mean square for the residual is 0.562, leading to an F statistic of 74,235 which is significant at $p < 0.001$. Such a high F value indicates that the regression model is statistically significant, indicating that the independent variable (Strat_Agil) is a robust predictor of the dependent variable (Strat_Res).

Table 18: ANOVA test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41,748	1	41,748	74,235	<,001 ^b
	Residual	44,990	80	0,562		
	Total	86,738	81			

a. Dependent Variable: Strat_Res

b. Predictors: (Constant), Strat_Agil

Source: Output from SPSS

Table 19 below represents the results of the model coefficients. The unstandardised coefficient for the independent variable (Strat_Agil) is .503, suggesting that for each 1-unit increase in independent variable (Strat_Agil), dependent variable (Strat_Res) is expected to increase by .503 units; this is under the assumption that all other factors are constant. The standard error of .058 is relatively small, indicating a high precision level in the coefficient estimation. A standardised coefficient (Beta) of .694 indicates a strong positive relationship between the two variables. The t-statistic of 8.616 is significant ($p < .000$), confirming that the relationship between the two variables is statistically significant. The confidence interval for the unstandardised coefficient ranges from .387 to 0.619, reinforcing the reliability of the model. Since the confidence interval does not include zero, it further supports the conclusion that there is a relationship between the variables. Further, the test returned a VIF of 1 indicating that there are no multicollinearity issues. A VIF of 5 or 10 would raise a concern for multicollinearity (Pallant, 2020).

Table 19: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
		1	(Constant)	.748			.220		3.396	.001
1	Strat_Agil	.503	.058	.694	8.616	.000	.387	.619	1	1

a. Dependent Variable: Strat_Res

Source: Output from SPSS

The scatter plot, as depicted in Figure 11 below, confirms the relationship between strategic resilience and strategic agility.

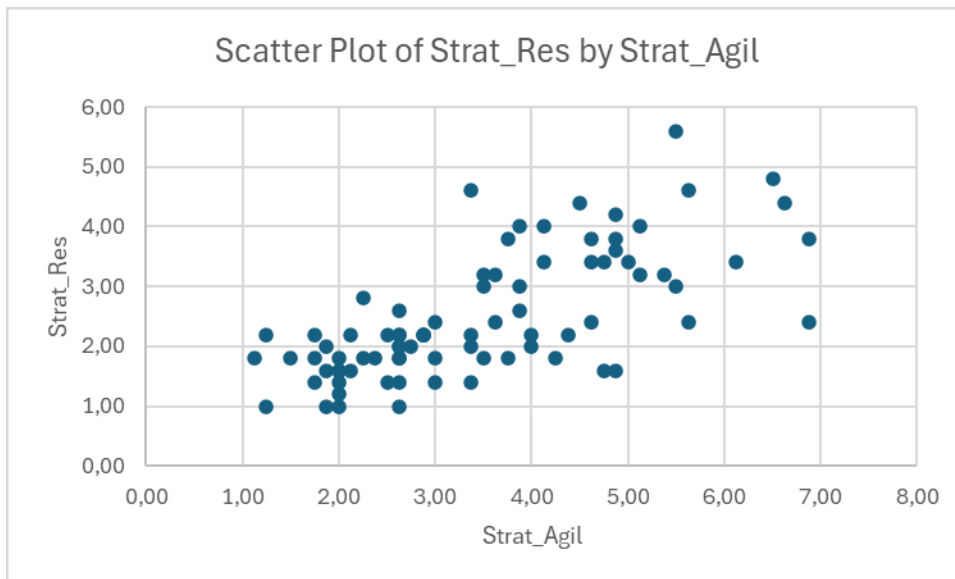


Figure 12: Scatter plot of relationship between Strat_Res and Strat_Agil

Source: Output from SPSS

Hypothesis 1 conclusion: Assessing the standardized regression coefficient, it is evident that strategy agility has a strong positive relationship with strategic resilience (Beta=0.694). The 0.001 level of significance suggests that the relationship is statistically significant. The null hypothesis is rejected.

5.7.2 Hypothesis 2

The second hypothesis was to evaluate the *moderating effect of emerging technologies on the relationship between strategic agility and strategic resilience*.

- **Hypothesis 2:** Emerging technologies positively moderate the relationship between strategic agility and strategic resilience.
- **Null Hypothesis 2:** Emerging technologies negatively moderate the relationship between strategic agility and strategic resilience.

To accurately test hypothesis for a moderating effect, a new standardised interaction factor (Mod_Effect) was introduced. This variable combines the independent variable (Strat_Agil) and moderator variable (Emerg_Tech). The model summary results are presented in table 20 below. The model evaluated the hypothesis that emerging digital technologies positively moderate the relationship between strategic agility and resilience. The two regression models demonstrate a negligible improvement in explanatory power when the moderator (Mod_Effect) is added. The results of the regression are presented as follows.

Model 1: Model one represents Strat_Agil and Emerg_Tech as predictors. The results are showing an R-value of 0.706 and an R-squared value of 0.499, this means working together as predictors, **Strat_Agil** and **Emerg_Tech** explain approximately 49.9% of the variance in **Strat_Res** (*dependent variable*). These indicate a strong positive correlation between the predictors and the dependent variable.

The adjusted R-Square of .486 suggests that the model remains robust when adjusted for the number of predictors. The F-statistic of 39.270 is highly significant ($p < .001$), confirming that the model is statistically significant. The standard error of .747 indicates a reasonable fit of the model to the data.

Model 2: When the interaction variable (Mod_Effect) is introduced, the R-value only increases marginally from 0.706 to 0.707. The R-square did not change and remained at 0.499. adding the moderating effect still only explains 49.9% of the variance in strategic resilience.

Table 20: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.706 ^a	.499	.486	.742	.499	39.270	2	79	.000
2	.707 ^a	.499	.480	.746	.499	25.935	3	78	.000

a. Predictors: (Constant), Strat_Agil, Emerg_Tech
b. Predictors: (Constant), Strat_Agil, Emerg_Tech, Mod_Effect
c. Dependent Variable: Strat_Res

Table 21: ANOVA test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.243	2	21.621	39.270	.000b
	Residual	43.495	79	.551		
	Total	86.738	81			
2	Regression	43,314	3	14,438	25,935	.000c
	Residual	43,424	78	0,557		
	Total	86,738	81			

a. Dependent Variable: Strat_Res
b. Predictors: (Constant), Strat_Agil, Emerg_Tech
c. Predictors: (Constant), Strat_Agil, Emerg_Tech, Mod_Effect

Mod_Effect denotes the moderating (interacting) factor between the independent variable, strategic agility (Strat_Agil), and the dependent variable, strategic resilience (Strat_Res). As indicated in Table 23, the interaction between strategic agility and emerging technology demonstrates a slightly negative impact, which is not statistically

significant, on the firm's strategic resilience. The model further confirms that the p-value is statistically insignificant, as the significant value exceeds 0.05. Additionally, the standardized coefficient reveals a beta value of -0.029. Based on the results, the null hypothesis is accepted.

Table 22: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF	
1	(Constant)	0,426	0,307		1,385	0,17	-0,186	1,037		
	Strat_Agil	0,48	0,06	0,662	8,051	.000	0,361	0,599	0,948	1,055
	Emerg_Tech	0,211	0,133	0,132	1,594	0,115	-0,053	0,475	0,94	1,064
	Mod_Effect	-0,034	0,096	-0,029	-0,359	0,72	-0,226	0,157	0,986	1,014

a. Dependent Variable: Strat_Res

The weakness of the moderating effect of ...

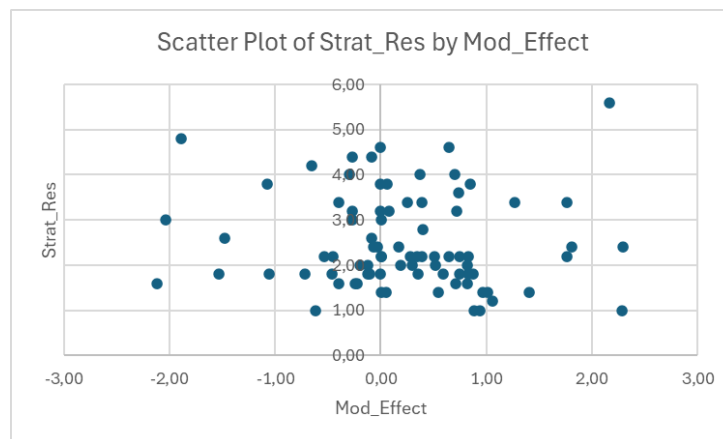


Figure 13: Scatter Plot of the moderating effect of Emerg_Tech on Strat_Agil and Strat_Res
Source: Output from SPSS

Conclusion of hypothesis 2: The regression analysis did not support a positive moderating effect of emerging technologies between strategic agility and strategic resilience. The 5% level of significance suggests that the relationship is statistically insignificant. Therefore, there was not enough evidence to reject the null hypothesis that emerging technologies do not positively moderate the relationship between strategic agility and strategic resilience.

5.8 Summary of findings for research hypotheses

Table 22: Summary of findings for research hypothesis

Hypothesis	Null Hypothesis	p-value	Result
------------	-----------------	---------	--------

1	There is no relationship between strategic agility and strategic resilience.	0.000	Null hypothesis rejected
2	Emerging technologies do not positively moderate the relationship between strategic agility and strategic resilience.	0.72	Failed to reject Null hypothesis

5.9 Chapter conclusion

This chapter provided the statistical interpretations of the survey questionnaire results. Descriptive statistics was performed for the categorical data. Various statistical tests were performed to validate the reliability and suitability of the data received from the respondents. Assumption tests were performed to determine the normality of the data and determine the statistical methods to adopt for hypothesis testing. The normality tests were contradictory, it was concluded that the data was fairly distributed, and along with considering the nature of the model to be tested, that the simple liner regression statistical method was the most suitable. The research hypotheses were tested through the simple linear regression. The results of this Chapter were consolidates for discussion in the next chapter.

CHAPTER 6: DISCUSSION

6.1 Introduction

The research study's objective assessed the relationship between strategic agility and strategic resilience, additionally, the study evaluated the moderating effect of emerging technologies on the relationship between strategic agility and strategic resilience. This chapter offers an in-depth discussion of the results presented in Chapter 5. The chapter concludes with a discussion of the hypothesis tested and the result of each test presented, in comparison to the existing literature, discussed in terms of implications and the conclusion drawn for the study. This analysis sets the stage for the recommendations and conclusions in the following chapter.

6.2 Descriptive statistics results discussion

6.2.1 Participant group and sample data

The population for this study was focused on executives and senior managers employed in for-profit businesses in South Africa. The choice of the population group was informed by the relevance of the top management team in leveraging key capabilities that inform strategic direction that reinforces the strategic resilience of organisations to ensure sustained competitive advantage (Ahammad et al., 2021). Top management teams are also pivotal in making selection of the technology capabilities that an organisation adopts for strategic purposes.

119 responses were received through a survey questionnaire, some responses were excluded from the sample due to incompleteness and not meeting the population criteria. As such, 85 valid questionnaire responses were considered for further analysis. This data was imported into Excel for coding and preparation for import into SPSS v29. Two of the 85 responses carried forward for analysis were found to have missing data. This missing data was handled using the listwise deletion method on SPSS. The listwise method excludes the responses with missing data (Bell et al., 2019), and subsequently, 83 of the responses were valid for the analysis for this study.

6.2.2 Industry sector

The analysis of the sectors the respondents were employed in indicated that 26,5% of the respondents were employed in the banking and financial services sector. The information and communications technology sector followed with 22,8% and the mining

and engineering sector followed by 15,6% and the manufacturing and automotive industry had a 12% representation in the sample group. The sample does not indicate any bias, it is representative of the main industries that generate economic interest in Southern Africa. Interestingly, the agricultural, forestry and fishing received the lowest response score at 1,2%. The information and communications technology sector tend to have a good mix of large, and small to medium enterprises (SME). SME organisations are often synonymous with agility, nimbleness and flexibility, these organisations are entrepreneurial and innovative, a character trait that (Morais-Storz et al., 2018) submitted as being important for fostering strategic resilience. Given the constructs of agility, resilience and emerging technologies, this composition of the sample will enable a non-bias evaluation of the hypothesis.

6.2.3 Size and age of organisations

Regarding the size and age of the organisations, 71,1% of the sample comprises of respondents in larger organisations (more than 250 employees), followed by 19% in organisations with more than 50, less than 250 employees. 9,6% of the respondents are in smaller organisations of less than 50 employees. 61,5% of the respondents are employed by established organisations, that have been in existence for over 30 years. 38,6% of the respondents work for organisations with below 30 years of existence. The sample is weighted heavier towards older and more matured organisations. The sampling method having been snowballing, may have had a consequence in the concentration of the sample. Nyamrunda & Freeman (2021), in their study on strategic agility, dynamic capabilities and trust among SMEs, revealed that SMEs in the African context struggle to respond to “constant unpredictable rapid changes in the business environment (Nyamrunda & Freeman, 2021, p.101175). The scholar recommended that SMEs focus on building solid capabilities to foster agility and resilience. Understanding how SMEs navigate volatile and turbulent times in the absence of some critical capabilities would be important.

6.2.4 Functional business areas

The questionnaire asked respondents to select the business function that they were accountable or responsible for. 28,9% of the respondents were leaders in an IT function, followed by sales and marketing at 15,7%, operations and finance equally represent 9,6% of the sample each. The sample is well distributed across business functions. An observation was made that 7,2% of the respondents were responsible for the Research

and Development (RnD) function. The critical importance of RnD for strategic agility was highlighted by (Dayioglu et al., 2024).

6.2.5 Number of years of experience

For the number of years employed, the distribution indicated that 57,83% of the respondents had 0-5 years of experience in a senior leadership role. 24,09% had 5-10 years' experience in a senior leadership role, 10,84% had 10-15 years' experience and only 3,61% had more than 20 years' experience in a senior role. This distribution is a consequence of the sampling method which is open to bias as highlighted by Bell et al. (2019). The distribution is not of concern in fulfilling the objectives of the study.

6.2.6 Emerging technologies used

64,6% of the respondents responded positively to using emerging technologies, 15,9% responded negatively to using forms of emerging technologies and 19,5% were not sure about whether their organisations used emerging technologies. This response was concerning as senior leadership should be aware of such strategic imperatives. It is however also acknowledged that language plays a key role, someone in a sales function, might be accustomed to using AI enabled chatbots in the organisation but not be aware that they are using a form of an emerging technology.

Regarding the technologies that the respondents adopted in their organisations, automation was highest at 70%, followed by cybersecurity at 68% and cloud computing at 66%. Artificial Intelligence received 57% of the selections. Big data, IoT and 5G were all at 46%, 44% and 43% respectively. Robotics was at 28%, with virtual reality and edge computing were both at 20%. Blockchain and drones both received 13% of the selections, and finally, the lowest scores were for bio and nano technology at 3% and 1% respectively. This is representative of the sample, where most respondents are in the financial and technology services sectors, which need to be robust with cybersecurity. The banking and technology sectors have been known to embrace the adoption of cloud computing and various hyper-automation technologies.

6.3 Statistical analysis

Various statistical analysis tests were performed to test for various assumptions to enable the statistical testing of the hypothesis proposed in Chapter 3.

6.3.1 Reliability

This study contains three constructs, namely, strategic agility, strategic resilience and emerging technologies, denoted as Strat_Agil, Strat_Res and Emerg_Tech respectively. These were tested for reliability using the Cronbach's alpha which tests for internal consistency of the constructs. The results of the Cronbach's alpha for these constructs are displayed on Table 9. All the three constructs' Cronbach's alpha reliability coefficient of above 0.7, a recommended as acceptable to confirm the reliability of each construct.

6.3.2 Validity and factor analysis

The KMO and Bartlett's test was done to test the validity of the constructs. The KMO measures the adequacy of the sample. The result of this test is displayed in Table 10. A KMO value of 0.6 is recommended for factor analysis to be performed on the constructs. The recommendation for the Bartlett's test is 0.05 ($p < 0.05$) level of significance to indicate that a factor analysis can be performed on the constructs. All the KMO values were above 0.6 and the p-values were ($p < 0.05$) as shown in Table 10. This indicated that the Exploratory Factor Analysis (EFA) was suitable.

6.3.3 Testing for normality

To test for normality in the sample distribution, the skewness and kurtosis tests were performed. Additionally, the Kolmogorov-Smirnov normality test was done, including the Q-Q plots and histograms, which are more a visual representation of the sample distribution. The results for the Kolmogorov-Smirnov, all three constructs reflected a p-value of less than 0.05, indicating that the constructs all deviate from normal distribution. The skewness and kurtosis z-scores however, generated results that represented normal distribution of the sample. The tests were contradictory.

6.4 Research objectives

The objective of this research study was to quantitatively evaluate the moderating effect of emerging technologies on the relationship between strategic agility and strategic resilience. The research objective was split into two operational objectives; the first was to assess the relationship between strategic agility and strategic resilience. The second objective was to evaluate the moderating effect of emerging technologies on the relationship between strategic agility and strategic resilience. These objectives were operationalised into hypotheses and tested statistically in Chapter 5. The first objective

was tested through Hypothesis 1. The hypothesis stated that there was a positive relationship between strategic agility and strategic resilience. Following a series of assumption testing, Hypothesis 1 was tested through a simple linear regression to assess the relationship between strategic agility and strategic resilience.

The second objective was operationalised into Hypothesis 2 and tested through a simple linear regression. As this hypothesis tested a moderating effect, a standardised construct combining strategic agility with emerging technologies was created to test this effect effectively. The statistical results of the hypothesis were presented in the previous chapter.

6.5 Hypothesis results discussion

6.5.1 Hypothesis 1

Hypothesis 1 assessed the relationship between strategic agility and strategic resilience. The study proposed that there was a strong positive relationship between strategic agility and strategic resilience. The strength and significance of the relationship were evaluated through a method of single linear regression.

6.5.1.1 Summary of findings

As displayed in Table 17, the regression model presented an R-value of 0.694, indicating a strong correlation between strategic agility and strategic resilience. The R^2 0.481 indicates that 48.1% of the variance in strategic resilience can be explained by strategic agility. The ANOVA results provide compelling evidence that strategic agility positively influences strategic resilience. The significant F statistic of 74.235 and low p-value reinforces the statistical significance, indicating that strategic agility is a robust predictor of strategic resilience.

The model coefficient, similarly, reflected the positive impact of strategic agility on strategic resilience, the model coefficient presented a β value of .694 and t-statistic of 8.616. The unstandardised coefficient of .503 and standardised Beta values provide robust evidence of this strong relationship. The p-value of ($p < .000$) confirms that the relationship between strategic agility and strategic resilience is statistically significant. This was reaffirmed by the scatter plot result shown in Figure 11, showing a strong correlation between strategic agility and strategic resilience.

Based on the results above, the null hypothesis was rejected in support of the alternative hypothesis, there is a strong positive relationship between strategic agility and strategic resilience.

6.5.1.2 Discussion

The findings emphasise strategic agility's critical role in fostering long-term sustained strategic resilience, this result is supported by the work of authors such as Gölgeci et al. (2020); Salwan & Gada (2018) who affirm that strategically resilient organisations characteristically have an ability to sense the market environment and respond to them quickly and swiftly. The result further aligns with Grego et al. (2024) who posits that organisations need both agility and resilience to sustain competitive advantage. Grego et al. (2024), in his literary work proposed flexibility as an anchor for strategic resilience. This was further supported by (Conz & Magnani, 2020). Similarly, Salwan & Gada (2018) concluded that strategic agility, the sense-making ability in an organisation, is an antecedent to strategic resilience.

Furthermore, the R^2 result indicating that about 48.1% of variances in strategic resilience is explained by strategic agility. This is a good indicator for organisations to build strategic agility capabilities (Ahammad et al., 2021) to foster strategic resilience for long term sustained competitive advantage (Morais-Storz et al., 2018). Particularly relevant in dynamic business environments where adaptability is crucial for survival and long-term success (Mithani, 2020). The strong influence of strategic agility on strategic resilience, as represented by R^2 and Fstatistic represent the ambidexterity referred to by Gölgeci et al. (2020). [Click or tap here to enter text.](#) proposed that, in volatile economies, organisations best benefit from leveraging both strategic agility and resilient capabilities. The scholars submit that strategic resilience and strategic agility are intertwined capabilities that enable organisations to withstand turbulent on the one hand and navigate volatile terrains on the other (Gölgeci et al., 2020).

(Nyamrunda & Freeman, 2021), strategic agility is said to be underpinned by strategic sensitivity, resource flexibility and leadership unity (Nyamrunda & Freeman, 2021). As the statistical results confirm that strategic agility positively influences strategic resilience, it is essential for organisations to possess these (strategic sensitivity, resource flexibility and leadership unity) capabilities (Ahammad et al., 2021). The study further supports the theoretical framework of Teece et al. (2016b)'s dynamic capabilities view. Teece et al. (2016b) propose that dynamic capabilities are intrinsically linked to strategic agility, in that, dynamic capabilities underpin the continuous adaptation that is required for agility (Teece et al., 2016b).

A limitation for this study is that the study used a predefined measurement scale for strategic agility (Tallon et al, 2022), while it was able to assess the level of agility, the scale does not test for which underpinning capabilities strengthen strategic agility.

6.5.2 Hypothesis 2

The second objective was operationalised into Hypothesis 2 and tested through a simple linear regression. The objective was to evaluate the moderating effect of emerging technologies on the relationship between strategic agility and strategic resilience. This hypothesis was tested using simple linear regression. The results, as presented in Tables 21,23 and 23 are in two models, one model shows strategic agility and emerging technologies as predictors for strategic resilience, and the other, the interaction between the variables is the predictor for strategic resilience.

6.5.2.1 Summary of findings

This hypothesis was tested in two models. Firstly, where both strategic agility (Strat_Agil) and emerging technologies (Emerg_Tech) were used as predictors of strategic resilience (Strat_Res). Secondly the moderator effect, operationalised as Mod_Effect, was added to the test to test the moderating effect of emerging technologies on the relationship between strategic agility and strategic resilience. In the first instance, the model summary presented an R^2 value of 0.499 indicating that the predictors explained 49.9% of variance in the dependent variable which is strategic resilience. The F-Statistic of 39.270 was highly significant at $p < 0.001$.

When the moderator effect (Mod_Effect) variable was introduced, the R-value only increased slightly. And the explained variance remained unchanged. This implied that the moderator effect did not have a significant impact on the relationship between strategic agility and strategic resilience.

The ANOVA test, as depicted on Table 21, the predictors, strategic agility and emerging technologies produced models that had statistical significance at high F-Statistics of 39.270 ($p < .001$). The introduction of the interaction variable dropped the F-Statistic, however still maintained stratetegic significance at ($p < .001$).

The Coefficient results in Table 22, it can be observed that strategic agility (Strat_Agil) is as a predictor still contributes significantly to strategic resilience, with a β value of 0.663. emerging technologies proved to not be as strong a predictor for strategic

resilience with a β value of 0.135 (p-value of 0.135). the introduction of the interaction variable (Mod_Effect) to the model, slightly weakened the standardised β for strategic agility to 0.662 from 0.663 and lowered that of emerging technologies to a standardised β value of 0.132. The interaction variable produced a negative for both unstandardised and standardised β , the t-value of -0.359 (p-value 0.72) on the Mod_Effect variable indicates that the moderating effect is not statistically significant.

Accordingly, based on these results, there was insufficient evidence to reject the null hypothesis that emerging technologies do not have a positive moderating effect on the relationship between strategic agility and strategic resilience.

6.5.2.2 Discussion

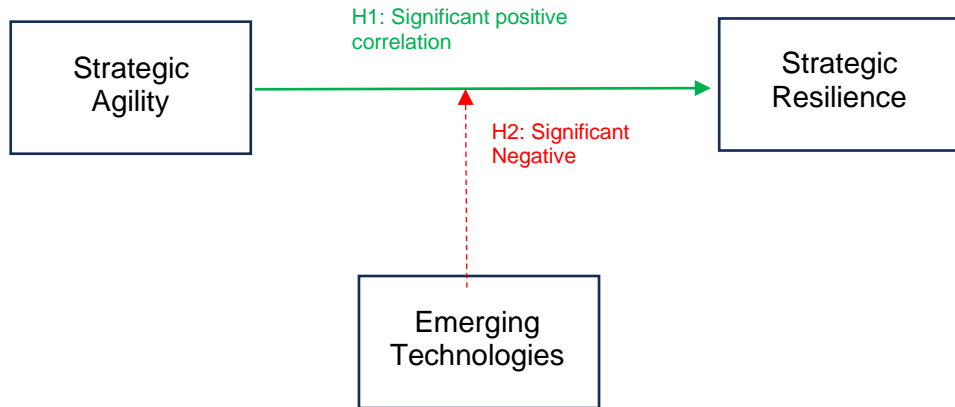
The finding on Hypothesis 2 was that emerging technologies did not have a moderating effect on the relationship between strategic agility and strategic resilience. Drawing from the dynamic capabilities' theoretical foundation and the literature reviewed for this study, emerging technologies were considered lower capabilities by scholars (Škare & Soriano, 2021). Škare & Soriano (2021) argued that digital technologies are a bedrock for the development of 'stronger' dynamic capabilities; sensing, seizing and reconfiguring, which are considered as underpinning capabilities for strategic agility and strategic resilience.

Tallon et al. (2022) suggested that the dynamic capabilities that underpin strategic agility and resilience require lower-order technology capabilities. The scholars posit that these lower-order capabilities support the dynamic capabilities that hold the meta-capabilities like agility and resilience. The hypothesis finding may be supported by literature, in that, emerging technologies, rather than moderating the relationship between meta-capabilities, they are antecedents to the underlying dynamic capabilities that underpin meta-capabilities (Tallon et al., 2022).

Strategic sensitivity, resource fluidity, and leadership unity are underpinning capabilities for strategic agility (Nyamrunda & Freeman, 2021), and a recent study by Dayioglu et al. (2024) concluded that technology capabilities influence strategic sensitivity, in turn increasing resource fluidity. It could be argued therefore, that the influence (mediating or moderating) of technological capabilities is rather linked to the dynamic capabilities that underpin strategic agility and resilience, rather than to the actual meta-capabilities. This view was further supported by

It is also to be considered that the finding, although statistically insignificant at a *p-value* of 0.72, this may, also be a consequence of the study's sample size being too small to reach conclusive evidence for a moderating role.

6.6 Summary of hypothesis: conceptual model view



6.7 Chapter conclusion

This chapter discussed the statistical results presented in Chapter 5. The categorical and descriptive statistics were discussed, as well as the Hypothesis results, comparative to the literature reviewed in Chapter 2. Further conclusions are recommendations relating to this study are captured in Chapter 7, the concluding chapter.

CHAPTER 7: CONCLUSION

7.1 Introduction

This is the concluding chapter of the study that examined the relationship between which examined the relationship between strategic agility, strategic resilience, and emerging digital technologies. The chapter ties together the findings, theoretical and practical contributions, and implications of this study. It blends the research outcomes, lays emphasis on the contributions that research made to the field of strategic management and how it provides actionable recommendations for management and stakeholders. It also presents the limitations of the research and makes suggestions for future research to advance knowledge in this area.

7.2 Findings

7.3 Theoretical conclusions

The study highlights the importance of strategic agility as an important enabler of resilience in uncertain and volatile environments. The findings related to the Dynamic Capabilities Theory stress how sensing, seizing, and reconfiguration capabilities strengthen an organisation's agility and strategic resilience. Moreover, the Resource-Based View emphasises that internal capabilities are essential in sustaining a competitive edge across different industries. Also, the moderating role of emerging digital technologies, as considered in the Technology Acceptance Model, demonstrates the way perceived usefulness and ease of use significantly augment the relationship between agility and resilience, offering new understanding into the integration of digital tools with strategic practices. The latter findings significantly contribute to a broader and more profound understanding of how theoretical frameworks intersect in practical contexts.

7.4 Research contribution

This study makes significant contributions to strategic management literature by incorporating three theories to clarify how organizations can navigate volatility. Moreover, the study offers empirical evidence on how emerging digital technologies can augment both strategic agility and resilience, accentuating the practical applications of the constructs in different industries. At the same time, this study adds value to policy and managerial practices by extending an actionable framework that aligns digital

transformation with strategic outcomes, especially in the South African business environment.

7.4 Recommendations for Management and other stakeholders

7.5 Limitations of the research

The following are limitations of this study:

- **Sample Size:** The sample size is deemed to have been too small for the study to adequately and accurately test for a moderating effect between constructs.
- **Sample Bias:** This study collected data from senior management and executives through the snowballing data collecting method. This method of sampling discounts diversity in the sample. As such, important insights from other organisational levels (such as middle management or operational staff), and varied perspectives from other industry sectors and organisational sizes.
- **Geographic Scope:** This study was conducted in the specific context of South Africa. This limits the generalisability of the findings beyond South Africa to other regions or global industries.
- **Quantitative Approach:** The use of a mono-method involving collecting and analysing quantitative data might overlook deeper qualitative insights into the relationships being studied like personal perceptions or cultural variables.
- **Emerging Technology Focus:** This study focused on emerging digital technologies as moderating variables. This downplays the role of traditional systems or alternative innovations in examining the relationship between strategic agility and resilience.
- **Self-Reported Data:** Relying on self-reported data from management may have introduced biases, like overrating of organisational capabilities and strategic outcomes.

7.6 Suggestions for future research

The following are suggestions for future research:

- Future research may need to investigate level at which emerging technologies moderate the relationship between strategic agility and strategic resilience. This study concludes that emerging technologies are an antecedent for dynamic underpinning capabilities for strategic agility and strategic resilience. This view, however, would require to be tests to generate empirical evidence of the derived conclusion from the study.

- Research may explore how these relationships manifest in understated industries, such as agriculture, pharmaceuticals, and healthcare, to extend the findings' applicability.
- Integrating qualitative methods may offer a deeper understanding of the systems underlying strategic agility and resilience.
- Future research may need to include middle and operational management to gain a more inclusive perspective of organisational dynamics.
- Future research may need to explore the effect of non-digital innovations or hybrid systems on strategic agility and resilience.

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APPENDICES

Appendix A Consent form

Dear respondent

I am a student at the University of Pretoria's Gordon Institute of Business Science (GIBS). I am completing my research thesis as part of my Master of Philosophy, specialising in Corporate Strategy.

My research is on understanding the mediating role of emerging technologies such as AI, IoT or Big Data in the relationship between strategic agility and resilience in a dynamic business environment. To that end, you are asked to complete a survey about my topic. The survey should take no more than 15 minutes. Your participation is voluntary, and you can withdraw at any time without penalty. Your participation is anonymous, and only aggregated data will be reported. By completing the survey, you indicate that you voluntarily participate in this research. If you have any concerns, please contact my supervisor or me. Our details are provided below.

Appendix B Ethical clearance approval

Ethical Clearance Approved External Inbox x

GIBS Masters Research <MastersResearch@gibs.co.za> Thu 8 Aug, 18:31
to me, Masters ▾

Gordon Institute of Business Science
University of Pretoria

Ethical Clearance Approved

Dear Fikile Manyike,

Please be advised that your application for **Ethical Clearance** has been approved. You are therefore allowed to continue collecting your data. We wish you everything of the best for the rest of the project.

[Ethical Clearance Form](#)

Kind Regards

This email has been sent from an unmonitored email account. If you have any comments or concerns, please contact the GIBS Research Admin team.

APPENDIX C: Survey Questionnaire

Survey Section	#	Questions	Article
SECTION 1: Demographics			
The first section of the survey questionnaire will contain general, demographic questions.	Q1	Are you in a senior management or executive role? (Y/N).	
	Q2	How long have you been in a senior management or executive role? (Ranges).	
	Q3	How old is your organisation? (Ranges).	
	Q4	In which industry does your company operate? (List).	
	Q5	Approximately, how many employees does your organisation employ? (Ranges).	
	Q6	Which function of the business are you responsible for? (List).	
SECTION 2: Strategic Resilience			
The second section of the survey questionnaire will contain statements, the participants will, on a 7-point Likert scale (1-do not agree; 7-completely agree), select an option that best matches their opinion.	Q7	Our company can focus on its core business.	Chen et al., (2021)
	Q8	Our company can anticipate unfavourable factors in development promptly.	
	Q9	We pursue a robust strategic growth model.	
	Q10	We can balance endogenous and exogenous growth patterns	
	Q11	We can match strategic objectives and operational capabilities very well	
SECTION 3: Strategic Agility			
Like section 2 above, this section of the survey questionnaire will contain statements, the participants will, on a 7-point Likert scale. <i>How quickly can your organisation perform the following actions?</i>	Q12	Respond to changes in aggregate consumer demand.	Tallon and Pinsonneault (2011)
	Q13	Customise a product or service to suit an individual customer.	
	Q14	React to new product or service launches by competitors.	
	Q15	Introduce new pricing	
	Q16	Expand into new regional or international markets.	
	Q17	Change (expand or reduce) the variety of products available for sale.	
	Q18	Adopt new technologies (for example, Blockchain, AI, Big Data) to produce better, faster, cheaper products and services.	
	Q19	Switch suppliers to avail of lower costs, better quality or improved delivery times.	
SECTION 4: Emerging Technologies			
This section of the survey questionnaire will be measured on a 7-point Likert scale, while some questions require participants to make selections— <i>your organisation's use and adoption of emerging technologies.</i>	Q20	My organisation adopts emerging technologies such as; Blockchain, Artificial Intelligence, Big Data, Robotics, Automation, Virtual Reality, Cybersecurity, 5G, the Internet of Things (IoT), Biotechnology, Nanotechnology, Edge Computing, Drones. <input type="checkbox"/> Yes <input type="checkbox"/> No	
	Q21	We use the following emerging technologies (List): <input type="checkbox"/> Blockchain <input type="checkbox"/> Artificial Intelligence <input type="checkbox"/> Big Data <input type="checkbox"/> Robotics <input type="checkbox"/> Automation <input type="checkbox"/> Virtual Reality	
		<input type="checkbox"/> Cybersecurity <input type="checkbox"/> 5G <input type="checkbox"/> IoT <input type="checkbox"/> Wearable Technologies <input type="checkbox"/> Biotechnology <input type="checkbox"/> Nanotechnology <input type="checkbox"/> Edge Computing <input type="checkbox"/> Drones	

<p>Emerging Technologies are defined as technologies in the early stages of development. These technologies are characterised by rapid growth and a significant potential to disrupt and impact economies and societies (Rogers, 2003). Examples of Emerging Technologies include Artificial Intelligence, Blockchain, Big Data, Robotics, Automation, IoT and many others.</p>	
Q22	Using Emerging Technologies in our organisation would enable us to accomplish tasks more quickly
Q23	Using Emerging Technologies would improve our organisation's performance
Q24	Using Emerging Technologies in our organisation would increase our productivity
Q25	Using Emerging Technologies would enhance the effectiveness of work in our organisation
Q26	Using Emerging Technologies would make it easier for my teams to perform their jobs
Q27	I would find Emerging Technologies useful in our organisation
Q28	Learning to operate Emerging Technologies would be easy for our teams
Q29	Our teams would find it easy to get Emerging Technologies to do what the teams need them to do
Q30	My teams' interaction with Emerging Technologies would be clear and understandable
Q31	It would be easy for our teams to become skilful at using these Emerging Technologies
Q32	Our teams would find Emerging Technologies easy to use
Q33	Our organisation intends to use Emerging Technologies more in the future
Q34	Emerging Technologies are important for our organisation to use
Q35	Emerging Technologies are important in our organisation
Q36	The benefits of using Emerging Technologies are apparent to me and our organisation
Q37	Our teams would spend less time on routine job tasks
Q38	Using Emerging Technologies will the quality of our output

Appendix D Code book

Questions	Coding
1	Yes = 1; No = 2
2	0-5 years = 1; 5-10 years = 2; 10-15 years = 3; 15-20 years =4; More than 20 years = 5
3	Agriculture, forestry and fishing = 14; Banking, financial services, insurance, real estate and business services = 15; Construction = 16; Energy such as oil, gas, electricity = 4; Hospitality, tourism incl. hotels and restaurants = 5; Information and communication technology = 6; Manufacturing, automotive industry, food manufacturing = 7; Mining and engineering = 8; Social and community services = 9; Pharmaceuticals and healthcare = 10; Wholesale and retail trade = 11; Transport, logistics and storage = 12
4	1-15 years = 1; 15-30 years = 2; 30 – 45 years = 3; 45 – 60 years = 4; >60 years =5
5	1-10 = 1; 11 – 50 = 2; 51 – 250 =3; More than 250 = 4
6	Sales and marketing = 1; Operations = 2; Supply chain = 3; Finance = 4; Research and development = 5; Customer services = 6; Human resources = 7; Information technology and management = 8; Procurement = 9; Legal, corporate governance and regulatory services = 10; Other, please specify
7-38	1 = Strongly agree

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

Appendix E: Construct Validity Results

Table 23: Pearson's correlation results for Strategic Resilience construct

		Correlations					
		Our company can focus on its core business.	Our company can anticipate unfavourable factors in development promptly.	We pursue a robust strategic growth model.	We can balance endogenous and exogenous growth patterns	We can match strategic objectives and operational capabilities very well	Strat_Res
Our company can focus on its core business.	Pearson Correlation	1	,417**	,341**	,366**	,370**	,670**
	Sig. (2-tailed)		<,001	,002	<,001	<,001	<,001
	N	82	82	82	82	82	82
Our company can anticipate unfavourable factors in development promptly.	Pearson Correlation	,417**	1	,678**	,433**	,482**	,797**
	Sig. (2-tailed)	<,001		<,001	<,001	<,001	<,001
	N	82	82	82	82	82	82
We pursue a robust strategic growth model.	Pearson Correlation	,341**	,678**	1	,680**	,421**	,832**
	Sig. (2-tailed)	,002	<,001		<,001	<,001	<,001
	N	82	82	82	82	82	82
We can balance endogenous and exogenous growth patterns	Pearson Correlation	,366**	,433**	,680**	1	,487**	,790**
	Sig. (2-tailed)	<,001	<,001	<,001		<,001	<,001
	N	82	82	82	82	82	82
We can match strategic objectives and operational capabilities very well	Pearson Correlation	,370**	,482**	,421**	,487**	1	,694**
	Sig. (2-tailed)	<,001	<,001	<,001	<,001		<,001
	N	82	82	82	82	82	82
Strat_Res	Pearson Correlation	,670**	,797**	,832**	,790**	,694**	1
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	
	N	82	82	82	82	82	82

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

Source: SPSS Output

Table 24: Pearson's correlation results for Strategic Agility

		Correlations								
		Respond to changes in aggregate consumer demand.	Customise a product or service to suit an individual customer	React to new product or service launches by competitors	Introduce new pricing	Expand into new regional or international markets.	Change (expand or reduce) the variety of products available for sale	Adopt new technologies (for example, Blockchain, AI, Big Data) to produce better, faster, cheaper products and services	Switch suppliers to avail of lower costs, better quality or improved delivery times	Strat_Agил
Respond to changes in aggregate consumer demand.	Pearson Correlation	1	,630**	,754**	,528**	,611**	,668**	,648**	,506**	,816**
	Sig. (2-tailed)		<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001
	N	82	82	82	82	82	82	82	82	82
Customise a product or service to suit an individual customer	Pearson Correlation	,630**	1	,717**	,660**	,655**	,557**	,523**	,469**	,799**
	Sig. (2-tailed)	<,001		<,001	<,001	<,001	<,001	<,001	<,001	<,001
	N	82	82	82	82	82	82	82	82	82
React to new product or service launches by competitors	Pearson Correlation	,754**	,717**	1	,650**	,709**	,733**	,645**	,530**	,877**
	Sig. (2-tailed)	<,001	<,001		<,001	<,001	<,001	<,001	<,001	<,001
	N	82	82	82	82	82	82	82	82	82
Introduce new pricing	Pearson Correlation	,528**	,660**	,650**	1	,616**	,629**	,555**	,433**	,771**
	Sig. (2-tailed)	<,001	<,001	<,001		<,001	<,001	<,001	<,001	<,001
	N	82	82	82	82	82	82	82	82	82
Expand into new regional or international markets.	Pearson Correlation	,611**	,655**	,709**	,616**	1	,730**	,709**	,598**	,866**
	Sig. (2-tailed)	<,001	<,001	<,001	<,001		<,001	<,001	<,001	<,001
	N	82	82	82	82	82	82	82	82	82
Change (expand or reduce) the variety of products available for sale	Pearson Correlation	,668**	,557**	,733**	,629**	,730**	1	,713**	,560**	,852**
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001		<,001	<,001	<,001
	N	82	82	82	82	82	82	82	82	82
Adopt new technologies (for example, Blockchain, AI, Big Data) to produce better, faster, cheaper products and services	Pearson Correlation	,648**	,523**	,645**	,555**	,709**	,713**	1	,604**	,832**
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001		<,001	<,001
	N	82	82	82	82	82	82	82	82	82
Switch suppliers to avail of lower costs, better quality or improved delivery times	Pearson Correlation	,506**	,469**	,530**	,433**	,598**	,560**	,604**	1	,720**
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001	<,001		<,001
	N	82	82	82	82	82	82	82	82	82
Strat_Agил	Pearson Correlation	,816**	,799**	,877**	,771**	,866**	,852**	,832**	,720**	1
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	
	N	82	82	82	82	82	82	82	82	82

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

Table 25: Pearson's correlation results for the Emerging Technologies construct

		Correlations																Emerg_Term
		Using Emerging Technologies in our organisation would enable us to accomplish tasks more quickly	Using Emerging Technologies would improve our organisation's performance	Using Emerging Technologies in our organisation would increase our productivity	Using Emerging Technologies would enhance the effectiveness of work in our organisation	Using Emerging Technologies would make it easier for my teams to perform their jobs	I would find Emerging Technologies useful in our organisation	Learning to operate Emerging Technologies would be easy for our teams	Our teams would find it easy to get Emerging Technologies to do what the teams need them to do	My teams' interaction with Emerging Technologies would be clear and understandable	It would be easy for our teams to become skilful at using these Emerging Technologies	Our teams would find Emerging Technologies easy to use	Our organisation intends to use Emerging Technologies more in the future	Emerging Technologies are important for our organisation to use	Emerging Technologies are important in our organisation	The benefits of using Emerging Technologies are apparent to me and my organisation	Emerg_Term	
Using Emerging Technologies in our organisation would enable us to accomplish tasks more quickly	Pearson Correlation	1	.697**	.566**	.535**	.491**	.227	.273	.215	.244	.344**	.313**	.151	.389**	.388**	.32	.580**	
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	.040	.013	.052	.027	.002	.004	.175	<.001	<.001	<.001	<.001	
	N	82	82	82	82	82	82	82	82	82	82	82	82	81	81	82	82	
Using Emerging Technologies would improve our organisation's performance	Pearson Correlation	.697**	1	.729**	.656**	.661**	.411*	.146	.042	.316**	.283	.225*	.216	.212	.538**	.25	.621**	
	Sig. (2-tailed)	<.001		<.001	<.001	<.001	<.001	.191	.785	.004	.010	.042	.052	.057	<.001	<.001	<.001	
	N	82	82	82	82	82	82	82	82	82	82	82	82	81	82	82	82	
Using Emerging Technologies in our organisation would increase our productivity	Pearson Correlation	.566**	.729**	1	.699**	.546**	.518**	.305*	.219	.424**	.406**	.282*	.419**	.336**	.609**	.53	.725**	
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	<.001	.005	.048	<.001	<.001	.010	<.001	<.001	<.001	<.001	<.001	
	N	82	82	82	82	82	82	82	82	82	82	82	82	81	82	82	82	
Using Emerging Technologies would enhance the effectiveness of work in our organisation	Pearson Correlation	.535**	.656**	.699**	1	.682**	.578**	.258	.214	.187	.369**	.309**	.414**	.354**	.682**	.53	.715**	
	Sig. (2-tailed)	<.001	<.001	<.001		<.001	<.001	.019	.053	.093	<.001	.005	<.001	.001	<.001	<.001	<.001	
	N	82	82	82	82	82	82	82	82	82	82	82	82	81	82	82	82	
Using Emerging Technologies would make it easier for my teams to perform their jobs	Pearson Correlation	.491**	.661**	.546**	.682**	1	.678**	.130	.090	.229*	.313**	.336**	.349**	.197	.602**	.44	.673**	
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		<.001	.244	.423	.038	.004	.002	.001	.077	<.001	<.001	<.001	
	N	82	82	82	82	82	82	82	82	82	82	82	82	81	82	82	82	
I would find Emerging Technologies useful in our organisation	Pearson Correlation	.227	.411*	.518**	.578**	.678**	1	.304*	.222	.186	.315**	.516**	.501**	.311*	.603**	.43	.684**	
	Sig. (2-tailed)	.040	<.001	<.001	<.001	<.001		.008	.045	.095	.004	<.001	<.001	.005	<.001	<.001	<.001	
	N	82	82	82	82	82	82	82	82	82	82	82	82	81	82	82	82	
Learning to operate Emerging Technologies would be easy for our teams	Pearson Correlation	.273	.146	.305*	.258*	.130	.304*	1	.726**	.536**	.701**	.379**	.228*	.346**	.385**	0	.658**	
	Sig. (2-tailed)	.013	.191	.005	.019	.244	.006		<.001	<.001	<.001	<.001	.040	.002	.005	4	<.001	
	N	82	82	82	82	82	82	82	82	82	82	82	82	81	82	82	82	
Our teams would find it easy to get Emerging Technologies to do what the teams need them to do	Pearson Correlation	.215	.042	.219	.214	.090	.222	.726**	1	.672**	.606**	.273*	.088	.301*	.199	0	.580**	
	Sig. (2-tailed)	.052	.785	.048	.053	.423	.245	<.001		<.001	<.001	.013	.445	.006	.074	1	<.001	
	N	82	82	82	82	82	82	82	82	82	82	82	82	81	82	82	82	
My teams' interaction with Emerging Technologies would be clear and understandable	Pearson Correlation	.244	.316**	.424**	.187	.229*	.188	.536**	.672**	1	.557**	.281*	.235*	.152	.236*	1	.607**	
	Sig. (2-tailed)	.027	.004	<.001	.093	.038	.095	<.001	<.001		<.001	.011	.033	.175	.031	1	<.001	
	N	82	82	82	82	82	82	82	82	82	82	82	82	81	82	82	82	
It would be easy for our teams to become skilful at using these Emerging Technologies	Pearson Correlation	.344**	.283	.406**	.369**	.313**	.315**	.701**	.696**	.557**	1	.300**	.354**	.454**	.421**	.26	.734**	
	Sig. (2-tailed)	.002	.010	<.001	<.001	.004	.004	<.001	<.001	<.001		.006	.001	<.001	<.001	0	<.001	
	N	82	82	82	82	82	82	82	82	82	82	82	82	81	82	82	82	
Our teams would find Emerging Technologies easy to use	Pearson Correlation	.313**	.225*	.282*	.309**	.336**	.518**	.379**	.273*	.281*	.300**	1	.520**	.489**	.422**	2	.626**	
	Sig. (2-tailed)	.004	.042	.010	.005	.002	<.001	<.001	.013	.011	.006		<.001	<.001	<.001	0	<.001	
	N	82	82	82	82	82	82	82	82	82	82	82	82	81	82	82	82	
Our organisation intends to use Emerging Technologies more in the future	Pearson Correlation	.151	.216	.419**	.414**	.349**	.501**	.228	.086	.235*	.354**	.520**	1	.424**	.537**	.37	.581**	
	Sig. (2-tailed)	.175	.052	<.001	<.001	.001	<.001	.040	.445	.033	.001	<.001		<.001	<.001	<.001	<.001	
	N	82	82	82	82	82	82	82	82	82	82	82	82	81	82	82	82	
Emerging Technologies are important for our organisation to use	Pearson Correlation	.389**	.212	.336**	.354**	.197	.311**	.346**	.301**	.152	.404**	.489**	.424**	1	.327**	.25	.564**	
	Sig. (2-tailed)	<.001	.057	.002	.001	.077	.005	.002	.006	.175	<.001	<.001	<.001		.003	0	<.001	
	N	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	
Emerging Technologies are important in our organisation	Pearson Correlation	.389**	.538**	.609**	.682**	.603**	.603**	.385*	.189	.238*	.421**	.422**	.537**	.327**	1	.61	.742**	
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	.005	.014	.031	<.001	<.001	<.001	.003		<.001	<.001	
	N	82	82	82	82	82	82	82	82	82	82	82	82	81	82	82	82	
The benefits of using Emerging Technologies are apparent to me and my organisation	Pearson Correlation	.320**	.520**	.530**	.536**	.649**	.430**	.084	.037	.175	.268*	.201	.378**	.255*	.611**	0	.574**	
	Sig. (2-tailed)	.003	<.001	<.001	<.001	<.001	<.001	.455	.741	.117	.015	.070	<.001	.021	<.001	0	<.001	
	N	82	82	82	82	82	82	82	82	82	82	82	82	81	82	82	82	
Emerg_Term	Pearson Correlation	.580**	.623**	.725**	.715**	.673**	.684**	.659**	.580**	.607**	.734**	.820**	.561**	.564**	.742**	.574**	1	
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	
	N	82	82	82	82	82	82	82	82	82	82	82	82	81	82	82	82	

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

Source: SPSS Output