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From Planning to Agility: What Allows SMEs to Pivot Successfully in Highly Volatile Business Environments?

A Bibliometric and Systematic Literature Review (B-SLR)

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ABSTRACT:

Strategic management literature has traditionally relied on linear planning frameworks that assume a predictable future. However, in the contemporary business landscape characterized by volatility, uncertainty, complexity, and ambiguity (VUCA), these static models frequently fail. Small and Medium-sized Enterprises (SMEs) are particularly vulnerable to these environmental shocks due to the "liability of smallness" and a lack of financial slack resources. Against this background, this study investigates the strategic transition from static planning to adaptive execution. The objective is to identify the specific operational mechanisms and dynamic capabilities that enable resource-constrained firms to execute successful strategic pivots during periods of crisis.

The research employs a rigorous mixed-method Bibliometric-Systematic Literature Review (B-SLR) protocol to ensure both structural breadth and contextual depth. Data collection was conducted via the Scopus and Web of Science databases following the PRISMA guidelines. First, a quantitative Bibliometric Analysis was performed on a dataset of 1202 documents to visualize the intellectual structure and evolutionary trajectory of the field. Second, a qualitative Systematic Literature Review (SLR) was conducted on a finalized sample of 78 articles. This sample was constructed using a purposive strategy that combined high-impact foundational articles with highly relevant recent studies (2023–2025) to mitigate citation time-lag bias. These articles were analysed using a concept-centric matrix and thematic synthesis to isolate the specific enablers of adaptation.

The bibliometric findings identify a bimodal evolution in the field, revealing a paradigmatic shift from strategy implementation toward resilience and entrepreneurial agility following the onset of global crises in 2019. The qualitative synthesis constructs a "Strategic Agility Architecture" (SAA), demonstrating that SMEs overcome resource constraints by orchestrating three dynamic meta-capabilities: strategic sensitivity, leadership unity, and resource fluidity. The results indicate that successful pivoting is enabled by specific antecedents: digital capabilities serve as "options generators" for sensing market shifts; psychological capital and leadership unity facilitate rapid decision-making; and iterative process enablers, such as Lean Startup methodologies, replace rigid forecasting with experimentation. Furthermore, the evidence highlights that SMEs utilize entrepreneurial bricolage and network capabilities to substitute for the lack of internal buffers. The thesis concludes that in volatile environments, resilience is best conceptualized as "creative reconstruction," where firms utilize continuous strategic renewal to achieve sustainable competitive advantage.

KEYWORDS: SMEs, strategic agility, pivoting, dynamic capabilities, volatility, resilience, bibliometric analysis

VAASAN YLIOPISTO**School of Management**

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TIIVISTELMÄ:

Strategisen johtamisen kirjallisuus on perinteisesti nojannut lineaarisiin suunnittelumalleihin, jotka olettavat tulevaisuuden olevan ennustettavissa. Nykypäivän liiketoimintaympäristöä luonnehtivat kuitenkin epävakaus, epävarmuus, monimutkaisuus ja tulkinnanvaraisuus (VUCA), minkä seurauksena nämä staattiset mallit osoittautuvat usein riittämättömiksi. Pienet ja keskisuuret yritykset (pk-yritykset) ovat erityisen haavoittuvia ympäristön shokeille johtuen ”pienuuden rasitteesta” (liability of smallness) ja puskuriresurssien puutteesta. Tätä taustaa vasten tutkimus tarkastelee strategista siirtymää staattisesta suunnittelusta mukautuvaan toimeenpanoon. Tutkimuksen tavoitteena on tunnistaa ne toiminnalliset mekanismit ja dynaamiset kyvykkyydet, jotka mahdollistavat resurssiniukkojen yritysten onnistuneet strategiset suunnanmuutokset (pivoting) kriisitilanteissa.

Tutkimuksessa hyödynnetään monimenetelmällistä kirjallisuuskatsausta (B-SLR), joka varmistaa sekä laajan yleiskuvan että syvällisen kontekstuaalisen ymmärryksen. Aineisto kerättiin Scopus- ja Web of Science -tietokannoista noudattaen PRISMA-ohjeistusta. Ensimmäisessä vaiheessa suoritettiin kvantitatiivinen bibliometrinen analyysi 1202 dokumentista alan intellektuaalisen rakenteen ja kehityskaaren kartoittamiseksi. Toisessa vaiheessa toteutettiin laadullinen systemaattinen kirjallisuuskatsaus (SLR) 78:sta artikkelista. Lopullinen otos muodostettiin yhdistämällä alan vaikuttavimmat viitatu artikkelit sekä tuoreet, ajankohtaiset tutkimukset (2023–2025). Aineisto analysoitiin hyödyntäen käsittekeskeistä matriisia ja teema-analyysiiä adaptaation mahdollistajien eristämiseksi.

Bibliometriset tulokset osoittavat kirjallisuudessa tapahtuneen selkeän paradigman muutoksen perinteisestä strategian toimeenpanosta kohti resilienssiä ja yrittäjämäistä ketteryyttä vuoden 2019 jälkeen. Teema-analyysi tunnistaa ”strategisen ketteryyden arkkitehtuurin” (Strategic Agility Architecture), jossa pk-yritykset voittavat resurssirajoitteet organisoimalla kolmea dynaamista kyvykkyyttä: strategista herkkyyttä, johdon yhtenäisyyttä ja resurssien joustavuutta. Tulokset osoittavat, että onnistunut suunnanmuutos perustuu tiettyihin mahdollistajiin: digitaaliset kyvykkyydet luovat vaihtoehtoja markkinamuutosten havainnointiin, psykologinen pääoma ja johdon yhtenäisyys nopeuttavat päätöksentekoa, ja iteratiiviset prosessit kuten Lean Startup -menetelmät korvaavat jäykät ennusteet kokeilukulttuurilla. Lisäksi tutkimus korostaa, että pk-yritykset hyödyntävät verkostoja ja ”bricolage”-toimintamallia korvatakseen puskuriresurssien puutteen. Tutkielman johtopäätöksenä on, että epävakaisissa ympäristöissä resilienssi on ymmärrettävä ”luovana jälleenrakennuksena”, jossa yritykset uudistavat jatkuvasti liiketoimintamallejaan saavuttaakseen kestävä kilpailuedun.

KEYWORDS: SMEs, strategic agility, pivoting, dynamic capabilities, volatility, resilience, bibliometric analysis

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1 Introduction

This chapter provides a comprehensive overview of the study, including the background of strategy implementation in Small and Medium-sized Enterprises (SMEs) operating in highly volatile business environments. It introduces the research objective, which addresses the critical shift from static strategic planning to agile execution. Furthermore, it highlights the identified research gap and the motivation for exploring the role of strategic agility and digitalization in enabling SMEs to overcome implementation barriers and achieve organizational resilience. Lastly, it describes the structure of the thesis.

1.1 Motivation for the Study

Organizations that rely on conventional strategy planning may be threatened by the volatility, uncertainty, complexity, and ambiguity (VUCA) that characterize today's business environment (Aponte-López & Torrealba, 2025; Bennett & Lemoine, 2014; Troise et al., 2022). While small and medium-sized businesses (SMEs) face more risks, large multinational organizations (MNEs) typically have the resources to tackle these issues (Belitski et al., 2022). Although SMEs are often called the backbone of the global economy, they are especially at risk during external changes like global pandemics or economic downturns because they have small profit margins and limited resources (Akpe et al., 2022).

This thesis is motivated by the urgent need to understand how these resource-constrained firms can transition from rigid planning to dynamic adaptability. Recent crises, particularly the COVID-19 pandemic, have demonstrated that survival is rarely determined by the static possession of resources, but rather by the firm's ability to reconfigure them (Ghezzi & Cavallo, 2020) rapidly. This capacity for rapid adjustment is not merely a tactical manoeuvre but represents a fundamental shift toward strategic agility, driven by the orchestration of the firm's dynamic capabilities. Strategic agility is defined as a meta-capability consisting of three core dimensions: strategic sensitivity (the sharpness of perception regarding environmental changes), leadership unity (the

ability of the top team to make bold, fast decisions), and resource fluidity (the internal capability to redeploy resources rapidly) (Aponte-López & Torrealba, 2025; Doz & Kosonen, 2010; Mueller-Saegebrecht & Walter, 2025).

However, deciding to pivot is not simple. Business owners must balance keeping their core identity with changing parts of their business model to survive. True adaptation extends beyond merely restoring the current status. It is about using a crisis as a chance to innovate and do even better than before. While existing literature identifies digital resources as a pathway to this performance, it also highlights that many SMEs struggle to benefit from them because the tools are often misaligned with their broader strategy (Akpe et al., 2022; Guo et al., 2020; Sambamurthy et al., 2003).

This thesis also acknowledges that SMEs cannot achieve agility in isolation. SMEs must rely on networking capabilities to access external resources and knowledge because of their resource constraints (Adomako et al., 2022; Afonso & Franco, 2024; Liu & Yang, 2019). SMEs can overcome the "liability of smallness" and enhance their operational flexibility by forming alliances and leveraging shared resources (Afonso & Franco, 2024; Liu & Yang, 2019).

Therefore, determining how SMEs integrate internal dynamic capabilities with external relational resources to pivot successfully is not merely a theoretical exercise; it is an economic imperative for the survival of this vital sector (Akpe et al., 2022; Troise et al., 2022).

1.2 Research Gap

Current strategic management literature is predominantly built upon the assumption of linear planning processes, frameworks that frequently collapse when applied to small and medium-sized enterprises (SMEs) navigating volatile environments (Mintzberg, 1994). While the formulation of strategy has received significant academic attention, the

“problematization” of its actual implementation under constraint remains underexplored (Hrebiniak, 2006; Noble, 1999).

This disconnect is largely theoretical. The dominant resource-based view (RBV) explains competitive advantage through valuable, rare, inimitable, and non-substitutable (VRIN) resources (Barney, 1991). However, this point of view is often criticized as being too static for high-velocity markets (Eisenhardt & Martin, 2000). This leaves us without a clear explanation regarding how SMEs, which suffer from the “liability of smallness” and resource scarcity, can manipulate their limited base to achieve the dynamic reconfiguration required for pivoting (Aldrich & Auster, 1986; Lefebvre, 2025). This suggests that standard strategies optimized for well-funded corporations rarely translate effectively to the SME context, leaving a clear gap between theoretical recommendations and the practical reality of scarcity (Ates et al., 2013; Kraus et al., 2007).

Furthermore, while “strategic agility” and “dynamic capabilities” are consistently identified as critical performance mediators, the empirical understanding of their operationalization is still limited (Doz & Kosonen, 2010; Li et al., 2011). Most of the existing literature has focused on large MNEs or agile high-tech startups (Adomako et al., 2022). There is a lack of empirical data examining how established SMEs in traditional sectors utilize these capabilities. Specifically, “pivoting” entails a fundamental change in a company’s strategic direction to test a new hypothesis. While this is a central concept in lean startup methodology, its application as a strategic renewal mechanism for established firms facing external shocks remains under-theorized (Ghezzi & Cavallo, 2020).

To address these limitations, this thesis uses a mixed-method review (B-SLR) protocol proposed by Marzi et al. (2025). It combines quantitative bibliometric analysis with qualitative thematic synthesis, allowing the study to do more than present a list of barriers. Instead, this thesis investigates how adaptive capacity works in practice when

there are constraints. The goal is to identify what enables SMEs to transition from rigid planning to agile pivoting in high-velocity environments. The following section explains the research problem and the main theoretical contributions in more detail.

1.3 Research Problem and Theoretical Contribution

The central research question of the study is: ***How does the strategic management literature conceptualize the shift from formal planning to adaptive pivoting in SMEs, and what specific mechanisms enable this transition during periods of high environmental volatility?***

This main question is explored through the following sub-questions:

- SQ1: *How has the academic literature on SME adaptation evolved, and how has the focus shifted from linear planning to strategic agility within the literature?*
- SQ2: *How do dynamic capabilities, specifically strategic agility, i.e., strategic sensitivity, leadership unity, and resource fluidity, facilitate the transition from planning to pivoting?*
- SQ3: *How do SME-specific resource constraints and environmental volatility shape the relationship between strategic pivoting and company resilience?*

The central problem this thesis addresses is the apparent inability of traditional strategic planning to ensure SME survival in highly volatile environments, and the lack of a clear framework explaining how resource-constrained companies can successfully execute strategic pivots. This thesis aims to close these identified theoretical gaps by shifting the focus from strategic planning to the practical execution of adaptability. By investigating the interplay between internal barriers, such as organizational inertia, and facilitative roles like entrepreneurial bricolage, the study constructs a more robust understanding of SME resilience. It moves beyond a descriptive analysis of barriers to identify the

operational mechanics that connect strategic intent to survival in high-volatility, as highlighted by Boin and van Eeten (2013) and Kuckertz et al. (2020).

1.4 Thesis Structure

This thesis is divided into six chapters, which are visualised in Figure 1. The first chapter introduces the background, primary objectives, and research questions of the thesis. It describes the nature of the thesis, its importance, and its relation to the current economic situation. The chapter also highlights the research gap that motivated this investigation.

The theoretical basis is given in the second chapter. The chapter examines the characteristics of small and medium-sized enterprises (SMEs) and how they are affected by changing circumstances. It starts with a resource-based view before moving into more dynamic concepts such as strategic agility and dynamic capabilities. The objective of the chapter is to demonstrate how small businesses can move from managing limited resources to rapid adaptation.

After the theoretical framework, the third chapter shifts focus to methodology, explaining the specific research design employed. It describes the mixed-method review (B-SLR) and how data were collected using the PRISMA protocol. This chapter shows how the study combines quantitative bibliometric data with qualitative thematic analysis for reliable results.

The next two chapters present the findings. Chapter 4 covers the bibliometric analysis, giving a quantitative look at publication trends and research clusters. Chapter 5 adds a thematic analysis, exploring how SMEs balance planning and agility. These chapters, together, highlight both general trends in the literature and the specific strategies companies use.

The final chapter highlights the results and concludes. It connects the theoretical framework with the study's findings to answer the research questions. This chapter also looks at how SMEs can use strategy in changing environments and gives practical advice for managers, as well as ideas for future research.

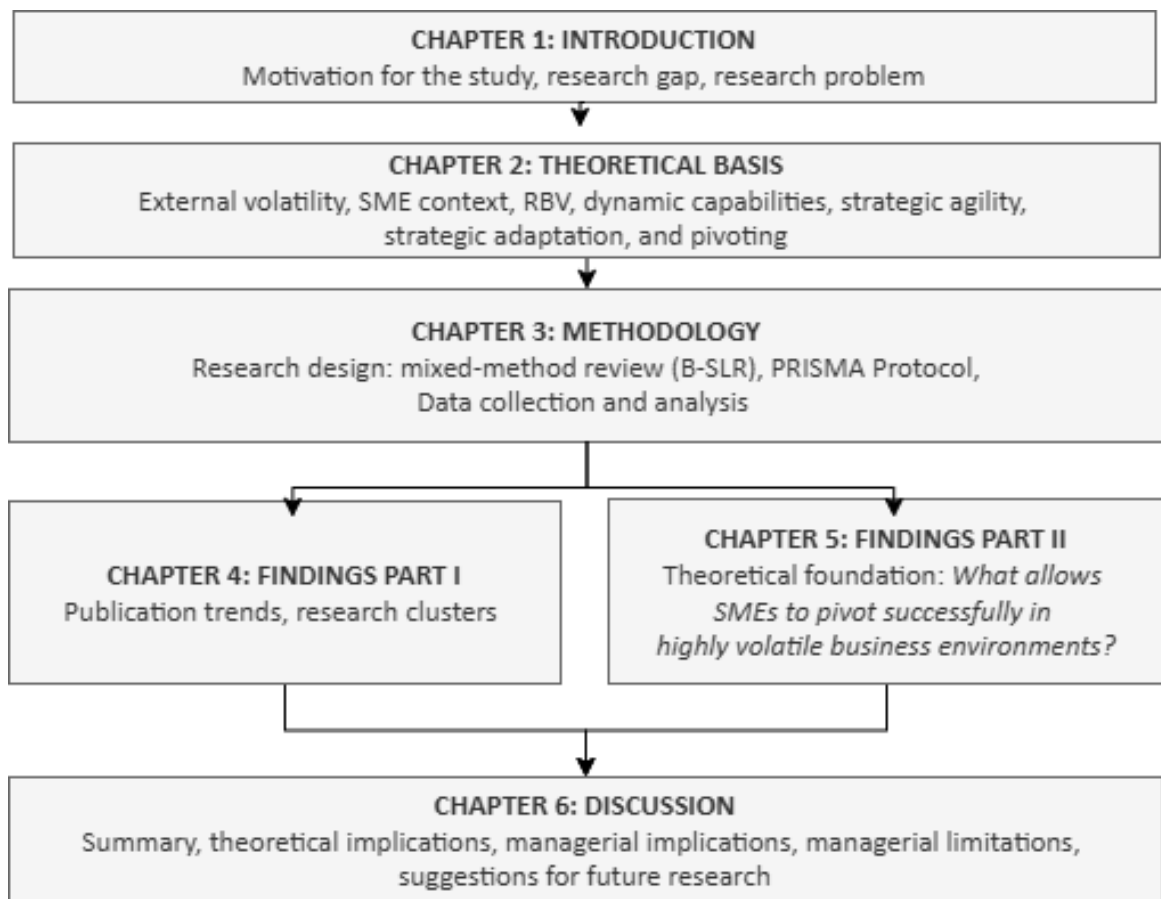


Figure 1. Thesis Structure and Flow.

2 Theoretical Background

This chapter identifies the key obstacles and defines the theoretical lenses necessary to analyse strategic adaptation and pivoting in small and medium-sized companies. It constructs a hierarchical framework that progresses from the external macro-surroundings to inner organizational mechanisms. First, the evaluation defines environmental volatility, distinguishing between calculable chance and authentic uncertainty to set up the context wherein traditional planning logic becomes inadequate. Second, it defines the SME environment, differentiating these enterprises not only by size, but also by qualitative characteristics such as relevant resource restrictions and managerial importance.

Against this background, the chapter presents strategic agility and dynamic capabilities as complementary theoretical constructs. Finally, the analysis turns to strategic pivoting, examining it as the specific mechanism where these strategic shifts occur. This definitional framework provides the essential vocabulary to interpret the empirical proof supplied in the subsequent literature review.

2.1 Environmental Volatility and Uncertainty

Companies operate in a setting where market dynamics are anything but static. Technological shifts and consumer preferences can alter the market field instantly, while geopolitical instability adds to this friction. Beyond these factors, unexpected crises like the COVID-19 epidemic or the war in Ukraine show how quickly external factors may alter existing markets (Bennett & Lemoine, 2014).

2.1.1 Defining Environmental Volatility

A stable market (often called moderately dynamic) is characterized by predictability, where change occurs frequently but follows a linear and predictable path. Industry structures are stable, market boundaries are clear, and the market players (competitors,

customers, and complementors) are well known and identifiable (Eisenhardt & Martin, 2000). Demand in stable markets follows predictable patterns, and products or services change very rarely (Suder, 2025).

Companies in stable markets often adopt conservative strategic approaches while focusing on long-term planning and efficiency. Usually, they are also holding onto established management principles (Ali & Varoğlu, 2022). Dynamic capabilities in this context resemble traditional routines: they are complicated, detailed, and analytic approaches that rely closely on existing knowledge and linear execution to produce predictable outcomes (Eisenhardt & Martin, 2000).

In contrast, a volatile (or high velocity) market is characterized by rapid and unpredictable changes. In those environments, market boundaries are blurred, successful business models are unclear, and market players are ambiguous and shifting (Eisenhardt & Martin, 2000). The demand for products and services, as well as competitor actions, is highly unpredictable (Suder, 2025).

To survive in volatile markets, companies typically undertake organic structures and entrepreneurial strategic postures, characterized by innovation and risk-taking to adapt freely to changing circumstances (Ali & Varoğlu, 2022). Dynamic capabilities in volatile markets differ significantly from those in stable ones. They may be experiential strategies that depend on unexpectedly growing new, situation-specific knowledge rather than leveraging existing routines (Eisenhardt & Martin, 2000).

VUCA stands for Volatility, Uncertainty, Complexity, and Ambiguity (Aponte-López & Torrealba, 2025; Troise et al., 2022). The term was introduced in United States military jargon in the 1990s to describe the nature of the external environment (Aponte-López & Torrealba, 2025). It describes an environment that is uncertain, unpredictable, risky, and evolving, where traditional ways of working often crumble because complexity has become the norm (Aponte-López & Torrealba, 2025; Guo et al., 2020). Traditional

strategy planning is sometimes viewed as being overly "hard" or inflexible in a VUCA world. Therefore, in order to survive and compete, businesses must acquire organizational agility, which is the ability to quickly detect and respond to threats and opportunities (Troise et al., 2022).

2.1.2 Risk vs. Uncertainty (Knightian Uncertainty)

The distinction between risk and uncertainty is grounded in the work of Knight (1921), who defined risk as a state where probabilities are known and can be statistically estimated, whereas uncertainty involves "unknown unknowns" where probability distributions do not exist (Foss et al., 2008; Uimonen, 2024). Differences between calculated risk and unpredictable uncertainty are summarized in Table 1.

Calculated risk (the "known") refers to the situations where potential outcomes and their probabilities can be statistically estimated using historical data. Calculated risks occur in stable markets where change is predictable (Eisenhardt & Martin, 2000). Opportunities exist objectively and can be discovered through a systematic search (Hmieleski et al., 2015).

Unpredictable uncertainty (the "unknown") happens in situations involving "unknown unknowns" where the future cannot be predicted because no relevant historical data exists to form probability distributions (Uimonen, 2024). This can be seen in high-velocity markets or VUCA environments where boundaries are blurred, and change is non-linear (Aponte-López & Torrealba, 2025; Eisenhardt & Martin, 2000).

Table 1. Risk vs. Uncertainty Summary.

Feature	Calculated risk	Unpredictable uncertainty
Information availability	Information is available, and probabilities can be estimated (Hmieleski et al., 2015).	Lack of information, probabilities are unknown (Foss et al., 2008; Uimonen, 2024).
Market context	Discovery context / stable markets: change is linear and predictable (Eisenhardt & Martin, 2000).	Creation context / high-velocity markets: change is non-linear and ambiguous (Eisenhardt & Martin, 2000).
Nature of knowledge	Known knowns / known unknowns: Based on historical data (Uimonen, 2024).	Unknown unknowns: probability distributions do not exist (Foss et al., 2008; Uimonen, 2024).
Primary capability	Analysis and planning: detailed routines and traditional risk management (Uimonen, 2024).	Agility and judgment: simple rules, experiential learning, and rapid reconfiguration (Eisenhardt & Martin, 2000; Foss et al., 2008).
Strategic goal	Optimization and efficiency.	Flexibility, adaptability, and resilience (Linnenluecke, 2017).

2.2 The SME Context: Vulnerability and Flexibility in Volatile Environments

While the previous section established the distinction between risk and uncertainty, it is necessary to examine how these forces specifically impact Small and Medium-sized Enterprises (SMEs). Unlike large corporations that can absorb environmental shocks through diversified portfolios, SMEs face a unique set of structural conditions that make them both highly vulnerable and potentially more flexible.

2.2.1 Definition and Characteristics of SMEs

Small and Medium-sized Enterprises (SMEs) are crucial to national economies because they provide social stability, innovation, and job growth. Since there is no uniform standard, defining them can be difficult because each country and organization utilizes its own criteria. However, counting employees is the most common way of identifying what counts as an SME (Zighan & Dwaikat, 2023). In the European Union, you are often looking at fewer than 250 individuals alongside a strict revenue ceiling. However, the US definition includes enterprises with up to 500 employees (Horváth & Szabó, 2019; Ali &

Varoğlu, 2022). This broad category is broken down into micro-enterprises (fewer than 10 employees), small enterprises (10–49 employees), and medium-sized enterprises (50–249 employees). SMEs differ from massive Multinational Enterprises (MNEs) in terms of size, resources, structural flexibility, and strategic conduct (Horváth & Szabó, 2019; Koray et al., 2025).

The difference between an SME and an MNE is not just about size, and focusing only on these numbers can overlook the real issue. It comes down to a basic difference in resources and how flexible each can be with their strategies. SMEs usually do not have extra resources, so they must be more reactive in their approach to strategy (Koray et al., 2025).

2.2.2 The Liability of Smallness and Resource Constraints

A defining characteristic of SMEs is the phenomenon known as the “liability of smallness”, which refers to the severe constraints on financial, human, and technological resources faced by these firms compared to their larger counterparts (Lefebvre, 2025; Aldrich & Auster, 1986, as cited in Lefebvre, 2025). SMEs usually lack “slack resources,” which leads to excess financial or operational buffers, resulting in being exposed to external shocks and variable environments (Belitski et al., 2022; Kuckertz & Brändle, 2022). Because of limited internal funds and restricted access to external financial markets, SMEs typically struggle to invest in modern technology or crisis mitigation techniques. That forces them to rely on cost-saving measures such as lean inventory management to survive (Lefebvre, 2025; Koray et al., 2025). SMEs must often rely on efficiency and bootstrapping to navigate turbulence, unlike MNEs that can absorb environmental jolts through diversified portfolios (Akpe et al., 2022; Winborg & Landström, 2001, as cited in Lefebvre, 2025).

2.2.3 Centralized Decision-Making and Management

The control of SMEs is frequently characterized by the centralization of decision-making power in the hands of the owner-manager or a small top management team (Strukelj & Dankova, 2025; Zighan & Dwaikat, 2023). Strategic orientation in these enterprises is closely encouraged by means of the mental characteristics, private values, and cognitive abilities of the entrepreneur (Mahamat et al., 2025). While this centralization allows fast reaction times, it can also lead to a lack of specialized managerial expertise, mainly in areas that include digital transformation and crisis management (Guo et al., 2020; Horváth & Szabó, 2019). Furthermore, decision-making in SMEs is frequently intuitive rather than analytical, relying on the owner's experience as opposed to formal strategic planning (Strukelj & Dankova, 2025; Aponte-López & Torrealba, 2025).

2.2.4 Network Dependence

Resource scarcity effectively forces SMEs to look outward, creating a dependency on external networks and social capital (Liu & Yang, 2019). By collaborating with suppliers and customers, these firms gain access to intelligence and resources they could never generate internally (Solano Acosta et al., 2018; Koporcic et al., 2025). It implies that in unstable markets, success is not just about having resources but about the ability to mobilize these connections. This "network capability" is often what allows them to pivot and sustain competitive advantage against competitors (Liu & Yang, 2019; Zighan & Dwaikat, 2023).

2.3 Theoretical Lenses for SME Adaptation

To understand how SMEs survive the environmental volatility described in Section 2.1, this thesis analyzes three progressive theoretical lenses. While the Resource-Based View (2.3.1) explains the structural constraints SMEs face, it is insufficient for high-velocity markets. Therefore, the analysis moves to Dynamic Capabilities (2.3.2) and Strategic Agility (2.3.3) to explain how resource-constrained firms actively reconfigure their assets to adapt.

2.3.1 The Resource-Based View (RBV)

The Resource-Based View (RBV) theory was introduced by Wernerfelt (1984). It was extensively developed and popularized by Barney (1991), who introduced key concepts such as the VRIN/VRIO framework for sustained competitive advantage in stable markets. The RBV provides the theoretical basis for the “liability of smallness”, which explains that SMEs often struggle because they lack the resources needed to absorb shocks (Lefebvre, 2025).

2.3.1.1 Definition and the VRIO Framework

The resource-based view describes a company as a unique collection of both tangible and intangible resources and capabilities (Barney, 1991; Wernerfelt, 1984). RBV’s key point is that firms have different resources, which cannot easily be transferred from one firm to another. As a result, differences in resources can persist over time (Barney, 1991; Solano Acosta et al., 2018).

The resource-based view first looked at strategic resources as Valuable, Rare, Inimitable, and Non-substitutable, known as VRIN. These qualities were seen as key to lasting competitive advantage (Barney, 1991). Later, this idea became the VRIO framework, which swaps Non-substitutability for “Organization” (Barney, 1995). This change highlights that companies need the right structure and management to benefit from their resources (Barney & Hesterly, 2019).

To achieve and maintain a sustainable competitive advantage, a company's resources need to meet the VRIO criteria (Afonso & Franco, 2024; Barney, 1995; Merín-Rodrigáñez et al., 2024). Figure 2 shows that sustainable competitive advantage comes after a process of elimination. If a company fails a single criterion, it may achieve short-term gains or keep up with competitors, but it will not achieve long-term success. Keeping this in mind, the company’s resources must satisfy four specific criteria:

- Value: A resource is considered valuable when it helps to implement strategies that improve the company's efficiency and effectiveness by taking advantage of external opportunities or reducing threats (Afonso & Franco, 2024; Barney, 1991; Eisenhardt & Martin, 2000).
- Rarity: A resource must be rare compared to demand and not widely owned by competitors to create a competitive advantage instead of just keeping up with others (Afonso & Franco, 2024; Barney, 1991).
- Inimitability: Resources should be hard or expensive for competitors to copy, often because of unique history, unclear causes, or complex social factors (Afonso & Franco, 2024; Barney, 1991; Eisenhardt & Martin, 2000).
- Organization: The company's ability to exploit the resource. To effectively utilize these resources and profit from the value they offer, a business must have the proper structure, processes, and systems (Barney, 1995; Merín-Rodríguez et al., 2024).

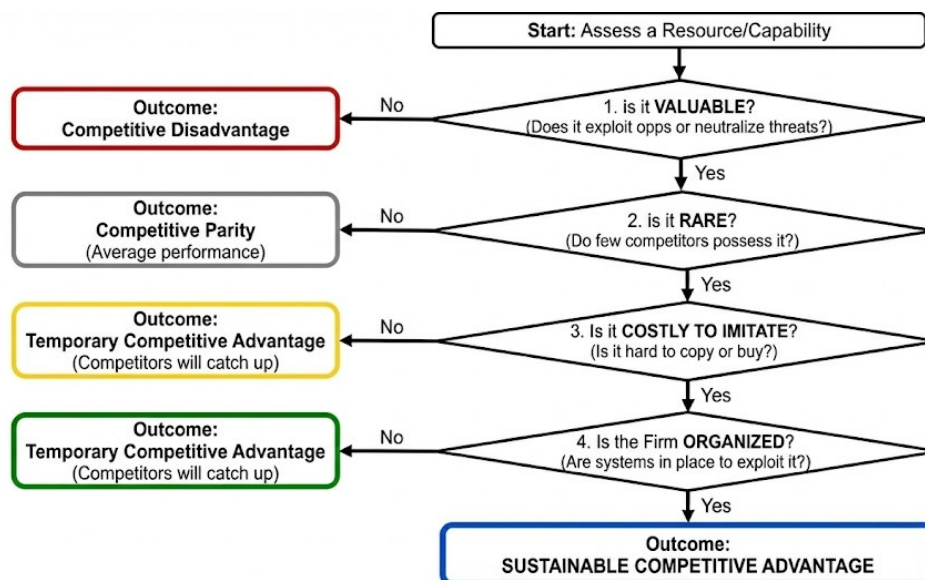


Figure 2. The VRIO Decision Tree for Competitive Advantage (adapted from Barney, 1996).

The literature generally categorizes these resources into tangible assets, such as financial capital and physical infrastructure, and intangible assets, such as organizational culture, reputation, and knowledge (Afonso & Franco, 2024)

2.3.1.2 Limitations of RBV in High-Velocity SME Contexts

While the Resource-Based View (RBV) explains performance differences in stable markets through the possession of valuable, rare, inimitable, and non-substitutable (VRIN) resources, this static perspective is insufficient in high-velocity environments where competitive advantage is fleeting, and market boundaries are blurred (Eisenhardt & Martin, 2000; Wu, 2007). This theoretical limitation is particularly acute for SMEs, which face the “liability of smallness” and lack the financial slack resources required to buffer against environmental volatility (Koporcic et al., 2025; Lefebvre, 2025). Unlike large multinational enterprises that can absorb shocks through diversified resource portfolios, SMEs cannot rely on resource leveraging but must instead master “resource organizing” to survive (Foss et al., 2008; Morrish & Jones, 2020). Consequently, the traditional RBV assumption of ownership is replaced in the SME context by a reliance on intangible human capital, specifically the psychological resources and resilience of the owner-manager, and “entrepreneurial bricolage”, which allows firms to recombine limited resources in novel ways (Hmieleski et al., 2015; Mahamat et al., 2025; Ott et al., 2017). Furthermore, to overcome the limitation of resource scarcity, SMEs substitute ownership with access by utilizing network capabilities to secure external assets and knowledge (Afonso & Franco, 2024; Liu & Yang, 2019). Thus, in volatile SME contexts, the RBV must be reinterpreted: competitive advantage stems not from accumulated asset stocks, but from the dynamic capability to reconfigure internal and external competencies rapidly (Eisenhardt & Martin, 2000; Wu, 2007).

2.3.2 Dynamic Capabilities

The theory of dynamic capabilities emerged to fill a void where the traditional resource-based view (RBV) struggled, particularly in explaining how firms survive in volatile environments. Teece, Pisano, and Shuen (1997) described dynamic capabilities as the capacity to “integrate, build, and reconfigure” internal and external competences to address rapidly changing environments (Adomako et al., 2022; El Idrissi et al., 2023). This framing separates the concept from static resources. While resources are merely the stock of available assets, dynamic capabilities are the strategic routines managers use to alter that resource base as the market evolves (Eisenhardt & Martin, 2000).

2.3.2.1 Sensing, Seizing, and Transforming

Teece (2007) separated dynamic capacities into three categories: sensing, seizing, and transforming (Adomako et al., 2022):

1. Sensing (identification of opportunities): This capability involves analyzing the external environment with an emphasis on identifying opportunities and customer needs (Koray et al., 2025). Sensing requires that an organization filter through the noise of disorganized data to catch “weak signals” regarding market trends or competitor moves (El Idrissi et al., 2023; Belahcene & Chaib, 2025). This system allows the firm to understand the nature of uncertainty and spot potential shifts long before they fully materialize (Guo et al., 2020; Koray et al., 2025).
2. Seizing (mobilization of resources): Seizing focuses on mobilization. Identifying an opportunity implies little without the capacity to address it through new products or processes. This stage efficiently assesses how quickly and well decisions are made when allocating resources (El Idrissi et al., 2023; Belahcene & Chaib, 2025). It involves selecting a viable business model and making strategic investments (Rabetino et al., 2025). For SMEs operating with limited resources, the margin for error here is incredibly narrow (Koray et al., 2025).

3. Transforming (continuous renewal): According to Koray et al. (2025), transforming, also known as reconfiguring, involves the ongoing renewal of an organization's tangible and intangible assets. This capability becomes necessary to dismantle organizational inertia. It acts as the primary mechanism for aligning the firm's structure with a fresh strategic path (El Idrissi et al., 2023). Through recombination, a process of acquiring and shedding resources, the organization maintains its evolutionary fitness and prevents operational rigidities from hardening (Eisenhardt & Martin, 2000; Belahcene & Chaib, 2025).

2.3.2.2 Operationalizing Dynamic Capabilities in SMEs

A critical theoretical distinction exists between "ordinary" (or substantive) capabilities and "dynamic" capabilities. Ordinary capabilities allow an organization to "make a living" in the present by performing basic functional activities efficiently (Winter, 2003). These capabilities maintain what is known as "technical fitness", which reflects the health and efficiency of daily operations. It is best understood as the discipline of "doing things right" within the current organizational structure (El Idrissi et al., 2023; Zahra et al., 2006).

In contrast, dynamic capabilities are more advanced competencies that alter the company's resource base (Helfat & Winter, 2011). They provide "evolutionary fitness" by enabling the firm to modify existing routines and create new ones to survive in changed environments (El Idrissi et al., 2023). Dynamic capabilities concentrate on strategy renewal and adaptability, or "doing the right things" to guarantee long-term survival, whereas ordinary capabilities concentrate on operational efficiency (Zahra et al., 2006; Teece, 2014).

Dynamic capabilities operate fundamentally differently in SMEs compared to large, established firms. Large companies rely on formal, complex routines to sense and seize opportunities, while SMEs typically employ simple, experiential processes rooted in the

cognitive adaptability of the principal decision-maker (Eisenhardt & Martin, 2000; Zahra et al., 2006). In high-tech SMEs, for example, the “sensing” capability often bypasses formal market research departments, driven instead by the entrepreneur's intuition and personal networks (Adomako et al., 2022; Jafari-Sadeghi et al., 2022). The “reconfiguring” capability in these firms is less about overcoming the structural inertia that plagues large corporations and more about “resource fluidity”, the ability to quickly redeploy limited assets without the burden of bureaucratic approval (Arsawan et al., 2022; Doz & Kosonen, 2010; Mueller-Saegebrecht & Walter, 2025). However, specific limitations remain: the actual “seizing” of identified opportunities is often precarious, limited by financial friction and a lack of specialized managerial expertise (Koporcic et al., 2025; Zighan & Dwaikat, 2023). Finally, dynamic capabilities in the SME context are linked to the entrepreneur's psychological capital and the firm's ability to learn rapidly from execution failures (Hmieleski et al., 2015; Mahamat et al., 2025; Zahra et al., 2006).

2.3.3 Strategic Agility

Despite resource disadvantages, SMEs contain special structural qualities that facilitate adaptability. SMEs often display flat organizational structures with minimal levels of hierarchy and bureaucracy, enabling efficient internal communication and information flow (Zighan & Dwaikat, 2023; Ali & Varoğlu, 2022). Unlike large organizations that may be limited by structural inertia, the organic nature of SMEs enables them to make quick choices and reorganize resources quickly in response to market changes (Merín-Rodrigález et al., 2024; McCann & Barlow, 2015). Such flexibility often acts as the primary defense against market volatility. Without the heavy inertia typical of larger competitors, SMEs are positioned to exploit niche opportunities and reconfigure their business models rapidly. It suggests that during uncertain times, a smaller scale is not necessarily a deficit but can serve as a distinct strategic asset (Eggers, 2020; Radicic & Petkovic, 2023).

2.3.3.1 Definition of Strategic Agility

In this thesis, strategic agility is defined as the capacity of an organization to continuously adjust and adapt its strategic direction in core business areas to create value, particularly in response to changing circumstances and market discontinuities (Doz & Kosonen, 2010; Weber & Tarba, 2014). Unlike operational agility, which focuses on process speed and flexibility within existing business models, strategic agility is a more advanced capability that allows firms to face new developments and reinvent their business models (Aponte-López & Torrealba, 2025; Troise et al., 2022).

However, it is important to note that defining agility is not straightforward since the concept has shifted quite a bit over time. The definition often depends on whether the lens is manufacturing efficiency or broader strategic renewal. Still, the majority of the literature agrees on the core premise: agility is the capacity to sense volatility and the speed to reconfigure resources. To see how these perspectives have evolved, Table 2 outlines the key definitions found in the study of Ganguly et al. (2009) and Shams et al. (2021).

Table 2. Definitions of Agility (adapted from Ganguly et al., 2009, and Shams et al., 2021).

Reference	Definition
<i>Dove (1992, p.2)</i>	<i>An ability, which allows an organization to thrive in an environment of constant and unpredictable change</i>
<i>Goldman et al. (1995, p.3)</i>	<i>An organizational capability for sustained profitability within a volatile landscape characterized by the continuous evolution of customer behaviours</i>
<i>Kumar and Motwani (1995, p. 36)</i>	<i>The strategic ability to compress critical path timelines, thereby enhancing time-based competitiveness through accelerated operational cycles</i>
<i>Cho et al. (1996, p. 324)</i>	<i>A capability for survival and growth amidst unpredictable market shifts, achieved through swift, effective responses and highly customized product offerings</i>
<i>Fliendner & Vokurka (1997, p. 19)</i>	<i>The proficiency in marketing high-quality, cost-effective solutions with minimal lead times and flexible volumes to provide superior value via mass customization</i>

Reference	Definition
Yusuf et al. (1999, p. 37)	<i>A holistic leveraging of competitive drivers, such as speed, innovation, and proactivity, by integrating reconfigurable assets and strategic knowledge management</i>
Menor et al. (2001, p. 273)	<i>A firm's ability to achieve simultaneous excellence across coordinated operational dimensions, including quality, delivery, flexibility, and cost structures</i>
Sambamurthy et al. (2003, p. 245)	<i>The organizational agility required to rapidly re-engineer existing workflows or develop new processes to capitalize on highly dynamic competitive conditions</i>
Raschke & David (2005, p. 2)	<i>Ability of an organization to dynamically recalibrate or reconfigure internal business processes to address both immediate operational requirements and emergent strategic needs</i>
* Weill et al. (2002, p. 61)	<i>Systematic variations in specific processes, products, and structures that constitute continuous organizational changes</i>
* Doz and Kosonen (2008, p. 96)	<i>A means to "prevent stagnation and painful transformation," ensuring companies do not become slow-moving "elephants" but instead remain flexible to avoid rigidity traps</i>
* Mohrman and Worley (2009, p. 434-436); Sarker and Sarker (2009, p. 440)	<i>The dedication of diverse sets of resources to preserve high levels of flexibility and speed, necessary to proactively encounter unexpected external changes in international contexts</i>
* Meyer et al. (2011, p. 246); Ferraris (2014, p. 25-27); Bresciani and Ferraris (2016, p. 122)	<i>A state of flexibility that prevents organizations from falling into "rigidity traps" and "external over-embeddedness," which can negatively affect multi-country operations</i>
* Weber and Tarba (2014, p. 9)	<i>A set of activities creating value in turbulent and unpredictable environments, acting as a "meta-capability" that involves allocating resources to specific capabilities and balancing them dynamically over time</i>
* Brueller et al. (2014, p. 39, p. 41)	<i>An invaluable capability enabling a firm to turn around quickly without losing momentum to increase viability in volatile environments. It consists of three enabling capacities: (a) making sense quickly, (b) making decisions nimbly, and (c) redeploying resources rapidly</i>
* Lewis et al. (2014, p. 59)	<i>Facilitated by leadership guidelines that include: (a) valuing paradoxes, (b) identifying and raising tensions proactively, (c) limiting anxiety and defensiveness, (d) delivering a reliable vision, and (e) managing both edges of a paradox</i>
* Gurkov et al. (2017, p. 16)	<i>A process entailing four key routines: (a) Strategizing (sharing strategy and motivating people); (b) Perceiving (monitoring the environment to anticipate changes); (c) Testing (ongoing trial and error); and (d) Implementing (executing incremental and radical changes)</i>

Reference	Definition
* Thrassou et al. (2018, p. 89)	<i>A consumer-focused framework (Strategic Marketing Multicultural Agility Pendulum) requiring a dynamic balance between agility and innovation, as well as with changing external environmental forces</i>

Note: Sources from Shams et al. (2021) are marked with *

2.3.3.2 Dimensions of Agility: Sensitivity, Unity, and Fluidity

Doz and Kosonen (2010) conceptualize this balance as the "thoughtful and purposive interplay" of three specific meta-capabilities:

1. Strategic sensitivity (perception): This refers to the sharpness of perception and the intensity of awareness regarding strategic developments. It involves an external orientation that allows the firm to sense exceptions, anticipate future trends, and recognize the need for business model renewal before it is too late (Doz & Kosonen, 2010; Mueller-Saegbrecht & Walter, 2025). Doz and Kosonen (2010) argue that this is not just about looking forward, but about anticipating and experimenting through probing and local market tests. It requires leaders to gain perspective by distancing themselves from day-to-day operations and abstracting business models into conceptual terms. Ultimately, this sensitivity allows for reframing, where honest dialogues around strategic issues help the organization see the necessity for renewal.
2. Leadership unity (stability): This capability provides the necessary stability for agility. It is defined as the top management team's capacity to make bold, timely choices without being restricted by internal politics or fragmentation (Doz & Kosonen, 2010). Leadership unity guarantees that when a strategy change is discovered, the organization has the collective commitment needed to drive the company on a new path (Aponte-López & Torrealba, 2025). According to the framework, this unity is built through dialoguing to share assumptions and revealing personal motives, which fosters mutual respect. It also involves

integrating agendas to create interdependencies and aligning around deeper common meanings beyond just financial incentives. This unity requires caring; by providing empathy and psychological safety, leaders create an environment that enables the team to experiment and remain creative, even under pressure (Doz & Kosonen, 2010). This unity requires caring; by providing empathy and psychological safety, leaders create an environment that enables the team to experiment and remain creative, even under pressure (Doz & Kosonen, 2010).

3. Resource fluidity (speed of action): While sensitivity spots the opportunity and unity aligns the decision, fluidity is the internal capacity to rearrange capabilities and redeploy resources quickly. This dimension addresses the “rigidity trap” by ensuring resources are not locked into fading business models. Doz and Kosonen (2010) identify several mechanisms for achieving this, such as decoupling organizational structures to gain flexibility and modularising business systems so they can be assembled and disassembled like “plug and play” components. It also involves dissociating resource use from ownership, negotiating access rather than hoarding assets, and switching between multiple business models running in parallel. In cases where internal development is too slow, fluidity allows for grafting or acquiring external teams to rapidly import a new business model (Doz & Kosonen, 2010; Mueller-Saegebrecht & Walter, 2025).

To operationalize these high-level capabilities, Doz and Kosonen (2010) decompose the three meta-capabilities into fifteen specific cognitive and behavioural practices. As detailed in Table 3, these practices represent the concrete behaviours that drive strategic agility.

Table 3. The Fifteen Key Leadership Practices for Strategic Agility (Doz & Kosonen, 2010).

Strategic Sensitivity	
1. Anticipating:	Sharpening foresight - Explore future usage concepts - Do not over-rely on foresight tools (e.g. Scenario planning)
2. Experimenting:	Gaining insight- Probing. Discovering 'lead locations,' innovation hotspots - Local experiments, in-market tests - Strategic and reflective use of corporate venturing
3. Distancing:	Gaining perspective - Nurture an 'outside-in' perspective through a rich network of personal contacts - Hearing the voice of the periphery
4. Abstracting:	Gaining generality - Restating business models in conceptual terms
5. Reframing:	Seeing the need for business model renewal - Engaging in honest, open and rich dialogue around strategic issues
Leadership Unity	
6. Dialoguing:	Surfacing and sharing assumptions, understanding contexts - Explore underlying assumptions and hypotheses, not just conclusions, developing common ground
7. Revealing:	Making personal motives and aspirations explicit - Transparency and clarity of motives brings mutual respect and trust, and understanding of positions
8. Integrating:	Building interdependencies - Define a valuable common agenda that conditions success
9. Aligning:	Sharing a common interest - Beyond incentives, give deeper common meanings
10. Caring:	Providing empathy and compassion - Provide the personal safety needed to be playful
Resource Fluidity	
11. Decoupling:	Gaining flexibility - Organise by customer/segmentation-based value domains.
12. Modularising:	Assembling and disassembling business systems. - Develop 'plug and play' functionality for business systems and processes
13. Dissociating:	Separating resource use from resource ownership and negotiating resource access and allocation
14. Switching:	Using multiple business models - Having different business model infrastructures in parallel and aligning and switching products between them
15. Grafting:	Acquiring to transform oneself - Import a business model from acquired company

2.3.3.3 Balancing Speed and Stability in the SME Context

Finding a balance between speed and stability is one of the key issues in establishing strategic agility. According to Doz and Kosonen (2010), when businesses expand, they often concentrate on efficiency and stability in order to provide predictable outcomes. However, this stability may become inflexible, which leaves businesses more vulnerable

to unexpected changes (Doz & Kosonen, 2010). Mueller-Saegebrecht and Walter (2025) define strategic agility as the capacity to adapt while maintaining strong leadership, consistent resource use, and acting quickly.

In the specific context of SMEs, strategic agility is often a function of organizational structure rather than complex system implementation. SMEs possess a natural structural advantage for agility due to flatter hierarchies and shorter decision-making chains, which allow for rapid information flow and “leadership unity” (Doz & Kosonen, 2010; Mueller-Saegebrecht & Walter, 2025). Unlike large organizations that struggle with “rigidity traps”, SMEs can achieve shared mental models more easily, facilitating faster strategic pivots. However, this inherent agility is often compromised by the “liability of smallness”; while SMEs can decide to move quickly, they often lack the financial “slack” or technological redundancy required to execute these moves safely (Koporcic et al., 2025). Zighan and Dwaikat (2023) argue that SMEs do not adopt agility through formal frameworks used by MNEs, but rather through informal mechanisms such as employee flexibility and close customer collaboration. Therefore, for SMEs, strategic agility is less about comprehensive planning and more about “disciplined flexibility”, where limited resources are strictly controlled while strategic direction remains fluid to accommodate market volatility (Arsawan et al., 2022).

2.4 Strategic Pivoting: The Mechanism of Renewal

While dynamic capabilities and strategic agility provide the potential for change, pivoting represents the specific action taken to alter the firm’s trajectory. This section defines the mechanism through which SMEs operationalize their agility.

In today’s business world, marked by volatility, uncertainty, complexity, and ambiguity (VUCA), traditional strategic planning often does not work because it assumes a stable future that no longer exists (Aponte-López & Torrealba, 2025; Troise et al., 2022). To survive and grow, SMEs cannot rely only on fixed plans. They need to adjust their internal operations to match changing external conditions using flexible processes (Belitski et al.,

2022). This adjustment is called strategic adaptation and often happens through clear, decisive actions known as pivots or business model innovations (Ghezzi & Cavallo, 2020; Guo et al., 2020).

2.4.1 Strategic Adaptation vs. Coping

Strategic adaptation is the process by which an organization alters its strategy, structure, or capabilities to maintain a "fit" with its environment (Larabi, 2025; Naman & Slevin, 1993). Strategic variation includes long-term, fundamental adjustments designed to turn threats into possibilities for future development, while coping strategies are often short-term emergency responses toward immediate survival, such as cost-cutting during a crisis or protecting employees (Guo et al., 2020; Koporcic et al., 2025).

Adaptation is driven through the "logic of opportunity", where corporations need to continuously sense market changes and innovate to capture temporary benefits (Sambamurthy et al., 2003). For SMEs, adaptation is not always only a preference but a need for survival. That is because they lack the slack resources that larger firms use to buffer against external shocks (Belitski et al., 2022; Kah et al., 2025). To adapt successfully, an organization must overcome the natural tension that resists change. It needs to reach a state where it can freely reconfigure its assets to handle unexpected market turbulence (Doz & Kosonen, 2010; Ruiz et al., 2024).

2.4.2 The Concept of Pivoting (Core vs. Peripheral Changes)

Within the broader scope of adaptation, pivoting is a specific mechanism of strategic change often associated with the "lean startup" methodology. A pivot is defined as a technique to test a new fundamental hypothesis about the product or strategy, when present assumptions are rejected by feedback (Ghezzi & Cavallo, 2020; Ries, 2011). Pivoting varies based on which part of the business idea is changed. Recent academic literature separates between two types of pivots based on a Core-Periphery framework (Motley et al., 2025).

- Core pivots: These involve changes to the key elements of the business idea, such as the value proposition (what is offered) and the customer segment (to whom it is offered). Changing the core elements is a significant strategic choice since often changing one requires changing others to maintain consistency (Motley et al., 2025).
- Peripheral pivots: These involve changes to less interdependent components, such as the channel of delivery or the revenue model (Motley et al., 2025).

Established companies often resist changing their core because of structural inflexibility. However, successful SMEs and startups often must pivot their core to achieve a viable product-market fit in response to negative feedback (Motley et al., 2025).

2.5 Conceptual Summary

The theoretical argument of this study focuses on the tension between environmental volatility and organizational adaptation capacity. The framework begins by acknowledging that today's business world has shifted from predictable risks to real uncertainty. Relying on historical data in this VUCA world (marked by volatility, uncertainty, complexity, and ambiguity) can create a false sense of security. Traditional planning, which relies on predicting the future based on the past, can actually be a weakness rather than a strength.

Figure 3 illustrates this theoretical lens as a hierarchical structure. It positions the external environment at the top, representing volatility and "unknown unknowns" that put pressure on the organization. This pressure is mediated by the specific characteristics of the company, labelled in Figure 3 as the "SME filter". This filter includes factors like the "liability of smallness" and centralized decision-making (Lefebvre, 2025; Zighan & Dwaikat, 2023). Under a static VRIO analysis, shown at the base of the theoretical response in Figure 3, SMEs appear disadvantaged compared to the large multinational enterprises (MNEs) due to a lack of financial resources. The hierarchy suggests that

having fewer resources pushes SMEs to depend specifically on dynamic capabilities and strategic agility to reconfigure existing assets.

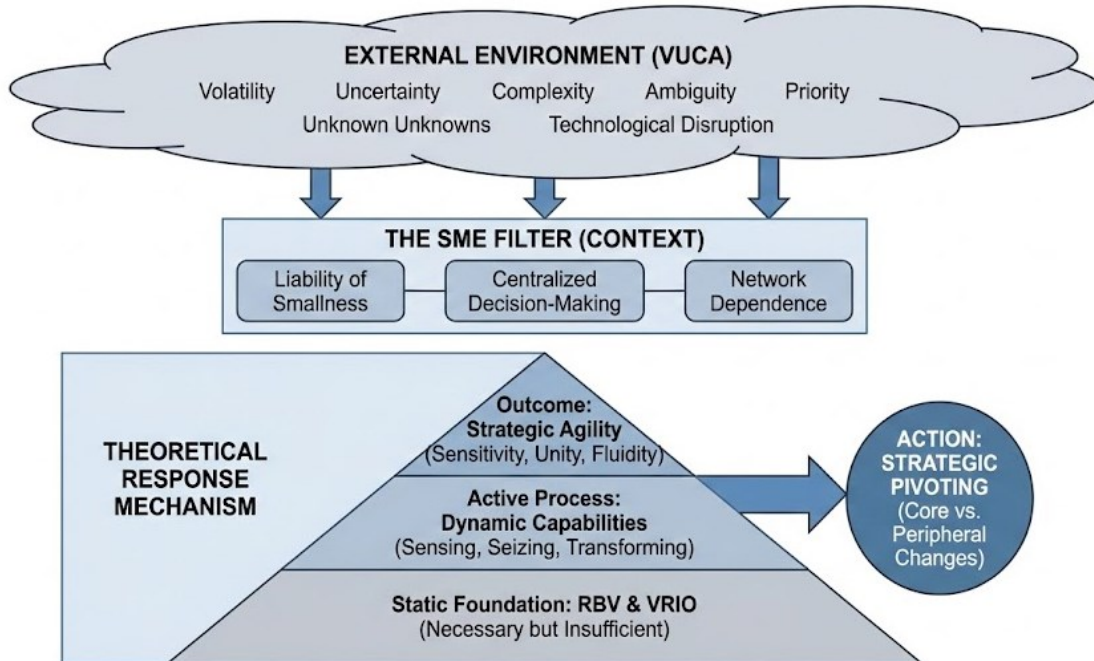


Figure 3. The Hierarchical Theoretical Lens for SME Adaptation.

While the first figure outlines the structural relationship, Figure 5 details the procedural mechanism of adaptation. It maps the flow from awareness to action by connecting Teece's (2007) dynamic capabilities (sensing, seizing, transforming) and Doz and Kosonen's (2010) strategic agility (sensitivity, unity, fluidity) to explain how firms adapt and survive. As shown in the flow of Figure 4, the process begins when the firm detects "weak signals" in the market (sensing). This awareness requires leadership unity to align the top team quickly (seizing), followed by resource fluidity to reallocate assets (transforming) physically. This chain leads to the strategic pivot, the observable mechanism where the firm alters its business logic to match the environment.

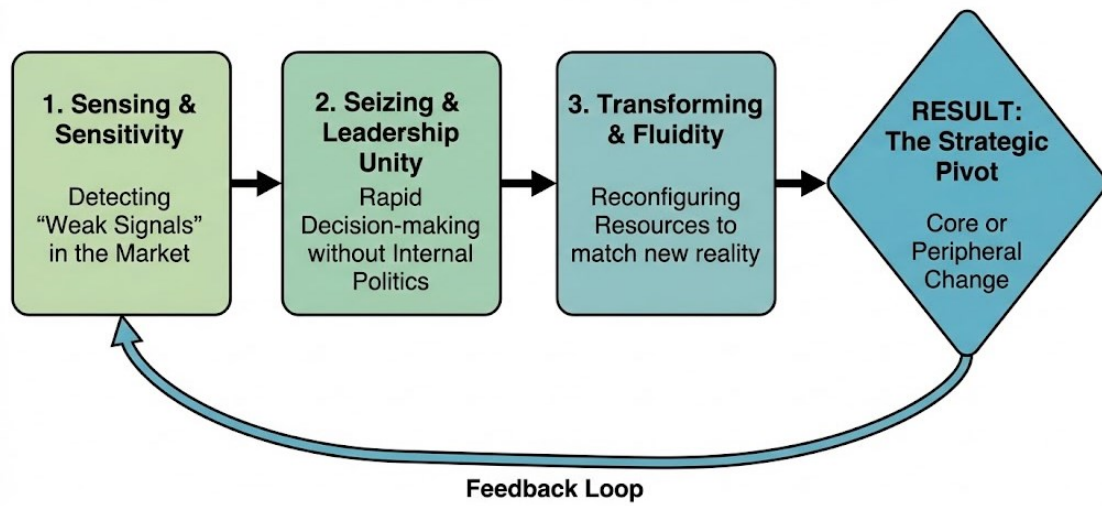


Figure 4. The Process of Adaptation (linking dynamic capabilities & agility).

3 Methodology

This chapter details the methodological framework employed to investigate the adaptive mechanisms enabling SMEs to pivot in high-volatility environments. The next sections explain how the research was designed, how data were collected, and which analytical methods were used to bring the findings together.

3.1 Research Design: A Mixed-Method Review Approach (B-SLR)

This research benefits from the hybrid Bibliometric-Systematic Literature Review (B-SLR) protocol (Marzi et al., 2025) to really understand the adaptive mechanisms that allow small and medium-sized enterprises (SMEs) to survive and pivot in volatile markets. This hybrid framework was selected because it effectively bridges the gap between two very different ways of looking at research. It navigates what Marzi et al. (2025) call the “miner-pro prospector” continuum: it combines a big-picture, quantitative map of the field with a deep, qualitative look at the theories underneath.

The main reason for this dual approach is the need to bring conceptual “order” to a research landscape that has historically been fragmented (Patriotta, 2020). The concept of “pivoting” is at an intersection where strategic management, entrepreneurship, and organizational resilience meet. This convergence creates a complex “knowledge infrastructure” that is often scattered across different disciplines (Krev et al., 2025). While bibliometric techniques help visualize and cluster otherwise scattered conversations, the resulting data and maps alone cannot explain the underlying mechanisms and reasons for adaptive behaviours, which require in-depth qualitative interpretation (Kunisch et al., 2023). Therefore, this study uses B-SLR to chart the territory and excavate the content at the same time (Kohtamäki et al., 2022; Rabetino et al., 2021).

Structurally, the research design follows two complementary stages outlined by Marzi et al. (2025) and visualized in Figure 5, moving logically from broad exploration to focused synthesis:

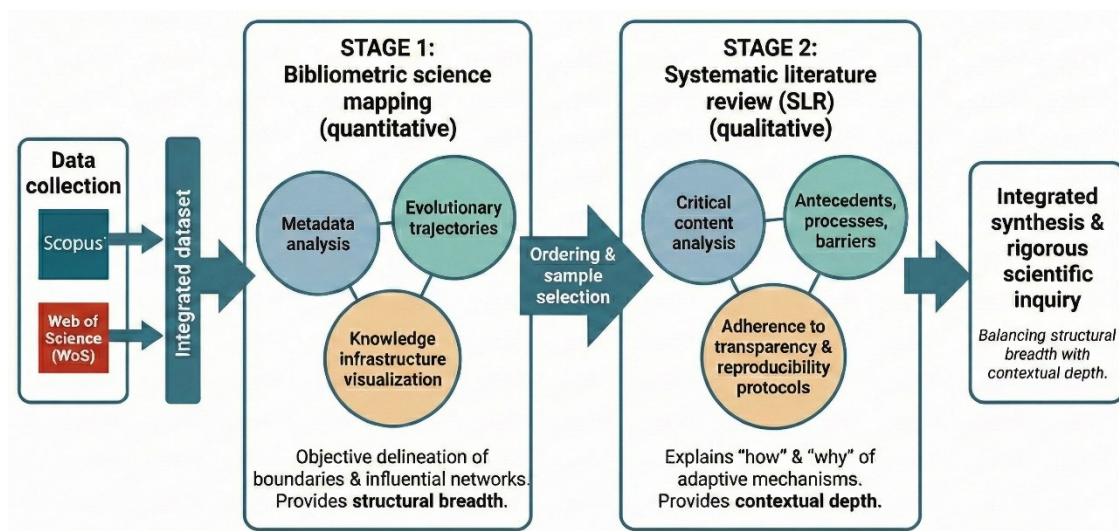


Figure 5. Research Design (B-SLR Protocol) (adapted from Marzi et al., 2025).

Stage 1: This stage uses bibliometric science mapping to visualize the field's infrastructure. By statistically analysing the metadata, this quantitative step objectively maps out the field's boundaries, tracking how it has evolved and identifying the influential networks shaping the conversation. This macroscopic view is critical for reducing selection bias. Instead of randomly picking papers based on assumptions, the bibliometric analysis provides a data-driven overview of the most significant works and themes regarding SME adaptation (Marzi et al., 2025).

Stage 2: Building on that quantitative foundation, the design moves to a Systematic Literature Review (SLR), conducted strictly according to the standards of Tingelhoff et al. (2025) and Tranfield et al. (2003). In this qualitative stage, the "ordering" from the first stage is used to isolate a refined sample of high-impact articles. These selected papers undergo a critical, line-by-line content analysis to extract specific dynamic capabilities and operational mechanics that allow SMEs to overcome the "liability of smallness" and

execute a pivot. In this stage, the statistical clusters identified earlier are turned into theoretical insights.

3.2 Data Collection Process

To ensure methodological rigor and reproducibility, this study adopts the Bibliometric-Systematic Literature Review (B-SLR) approach (Marzi et al., 2025). The data collection and screening phases were executed in strict adherence to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021). By maintaining these standards, this study minimizes researcher bias (Page et al., 2021), ensuring the dataset gives an accurate and thorough view of what is currently known about how SMEs adapt their strategies.

To build a strong evidence base, the academic literature search was conducted on Scopus and Web of Science (WoS). Scopus provided wide coverage of current business topics, while Web of Science offered access to older, highly cited publications. Using both databases ensured that the review minimized source bias and included all necessary information.

As illustrated in Figure 6, the selection process integrated standard PRISMA phases with bibliometric checkpoints to balance structural rigor with analytical depth. In line with the PRISMA framework, the process followed four distinct phases (Page et al., 2021):

- **Identification:** Boolean search strings (detailed in Tables 4 and 5) were applied to retrieve initial records.
- **Screening:** Once duplicates from the multi-database search were removed, titles and abstracts were assessed against strict inclusion criteria to filter out studies lacking empirical rigor or specific relevance to the SME context.
- **Eligibility:** This phase included a full-text examination to verify each article's ability to answer the research sub-questions (SQ1–SQ3).

- Inclusion: The dataset was finalized by including only studies that met the quality standards needed for bibliometric mapping and thematic synthesis.

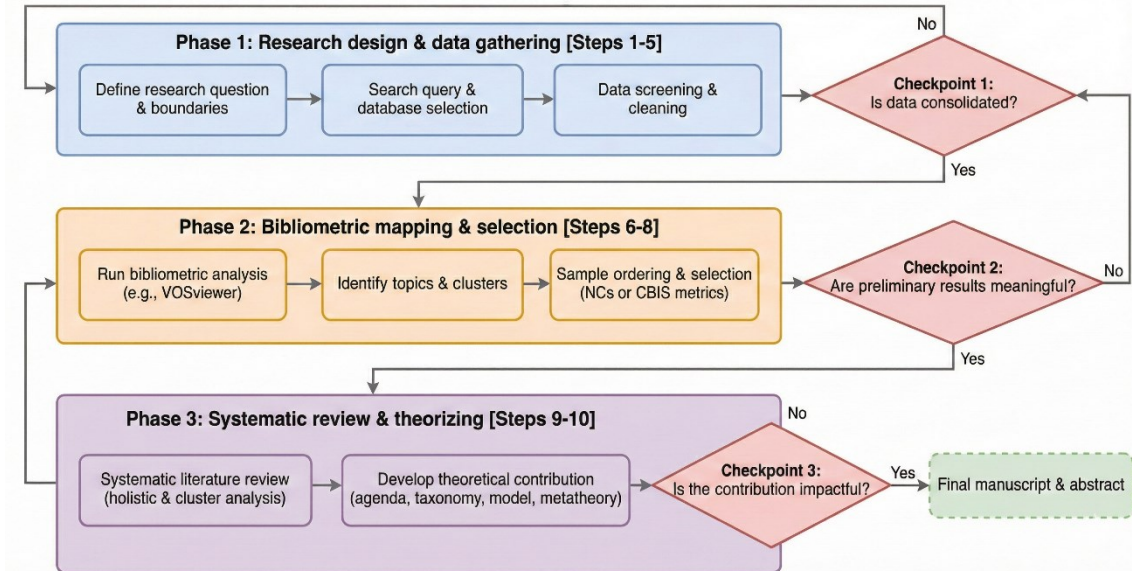


Figure 6. The B-SLR Process Flow (adapted from Marzi et al., 2025).

3.2.1 Search Strategy and Keyword Selection

The search strategy employed in this study was constructed using a three-tiered Boolean logic designed to ensure both high relevance and methodological rigor (see Figure 7). To ensure the retrieved studies were genuinely focused on the target demographic, the first search tier restricted population identifiers (such as “SME”, “start-up”, and “entrepreneur*”) to the article title only. This high-precision filter was operationalized to ensure that the selected studies primarily investigated small enterprises as the central unit of analysis, thereby excluding research focused on large corporations that might merely reference SMEs tangentially within the abstract.

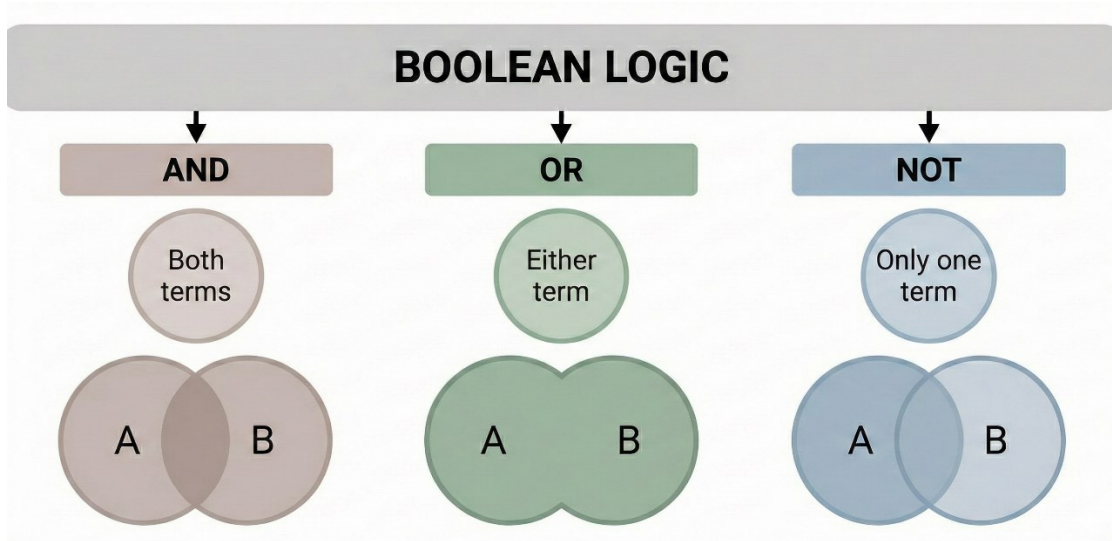


Figure 7. Boolean Logic.

With this demographic filter established, the second tier established the necessary disciplinary boundary by requiring terms associated with "strategy" or "strategic management" to appear in the title, abstract, or keywords. This criterion anchored the review within the strategic management discourse, ensuring that the identified literature addressed the formal or emergent planning mechanisms pertinent to the research questions. The third and final tier was designed to capture the specific study focus of moving beyond static planning toward dynamic action in volatile environments. To achieve this, the query included proxies for adaptive capacity such as "agility", "resilien*", "dynamic capabilit*", "implementation", "execution", and "barrier*".

The compound search string enables a detailed examination of how strategic intent is implemented under constraints. To further maintain quality control, the search results were filtered to include only peer-reviewed articles and review papers published in English.

3.2.2 Scopus Search Protocol

The Scopus database was selected as the primary source due to its extensive coverage of management literature. The search strategy was operationalized using a syntax

specific to the Scopus indexing architecture, employing a hierarchical Boolean logic (see Table 4). The first component of the query restricted the target population exclusively to the article title, encompassing terms such as "SME", "start-up", and "entrepreneur*". This methodological decision was critical for isolating studies where the small enterprise context is the primary subject of investigation, rather than a secondary variable.

To capture the theoretical and practical dimensions of the research topic, the second and third components of the query extended the search to the title, abstract, and keywords (`TITLE-ABS-KEY`). This broader scope allowed for the identification of literature linking "strategic management" with dynamic action-oriented concepts such as "agility", "resilien*", "implementation", and "execution". This structure ensures that the retrieved corpus addresses the intersection of formal strategy and the adaptive capabilities required in volatile environments.

After the initial search, the results were narrowed to the subject areas of business, management, and accounting (BUSI) and economics, econometrics, and finance (ECON). This step removed records from engineering and the hard sciences. Next, the dataset was refined to include peer-reviewed articles and reviews published in English only. This filtering process resulted in a final set of 1202 documents, which formed the empirical basis for the bibliometric analysis.

Table 4. Scopus Search Logic.

Search Parameter	Query / Filter Criteria
Database	Scopus
Field 1: Context (Target Population)	TITLE ("SME" OR "small and medium" OR "small business" OR "start-up" OR "entrepreneur*")
Field 2: Domain (Strategic Focus)	AND TITLE-ABS-KEY ("strategy" OR "strategic management")
Field 3: Mechanism (Adaptation & Action)	AND TITLE-ABS-KEY ("implementation" OR "execution" OR "agility" OR "resilien*" OR "dynamic capabilit*" OR "barrier*")
Subject Area Limit	Business, Management and Accounting (BUSI) OR Economics, Econometrics and Finance (ECON)
Document Type Limit	Article (ar) OR Review (re)
Language Limit	English
Search Date	11 December 2025

Figure 8 illustrates the search strategy executed in Scopus, detailing the specific Boolean query, field codes, and subject filters that resulted in the identification of 1202 relevant records for the bibliometric analysis.

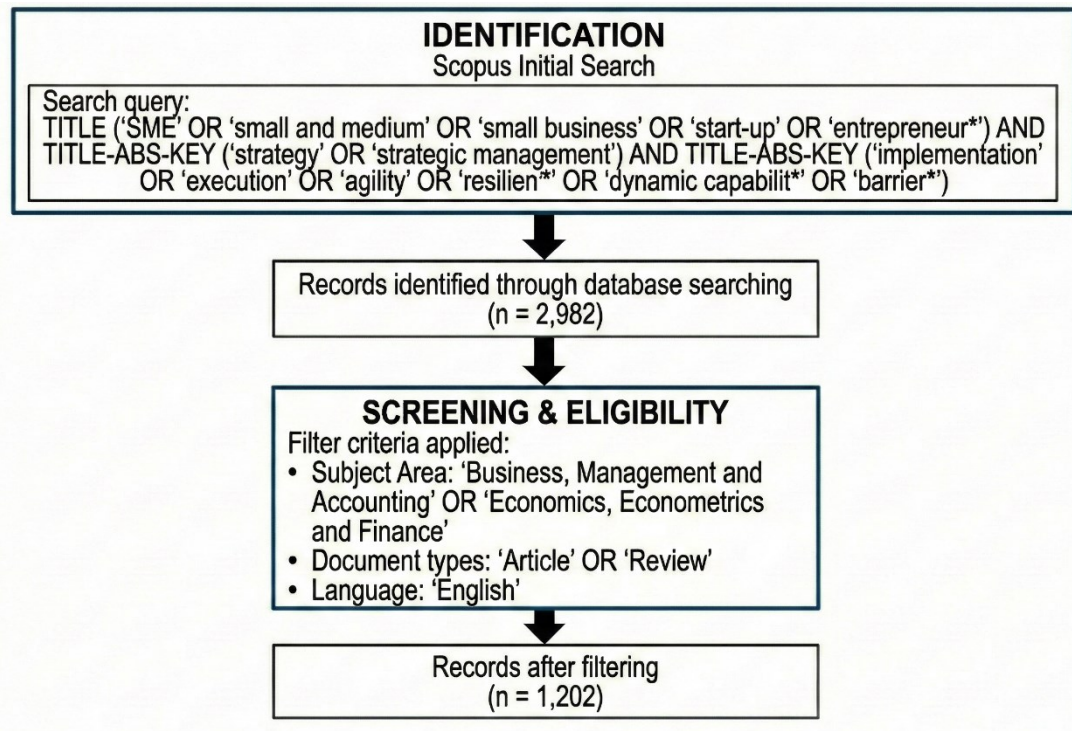


Figure 8. Scopus Search and Selection Process (adapted from Page et al., 2021).

3.2.3 Web of Science Search Protocol

To ensure extensive coverage of high-impact literature, a separate search was conducted within the Web of Science (WoS). Consistent with the Scopus protocol, the search strategy prioritized contextual relevance by restricting the target population terms specifically to the title field (TI). This was combined with a topic search (TS) for strategic management and adaptive mechanism terms (see Table 5).

The initial query generated a total of 1155 documents. To refine this dataset for methodological rigor and disciplinary relevance, the results were filtered to include only publications within the “management” and “business” categories, restricted to English-language “articles” and “review articles”.

This filtering process reduced the dataset to 661 documents. To ensure that the review captured the field’s most influential theoretical contributions, the sample was narrowed

to the 45 most-cited articles identified as highly relevant to SME adaptation for in-depth analysis.

Table 5. Web of Science Search Logic.

Search Parameter	Query / Filter Criteria
Database	Web of Science (Core Collection)
Field 1: Context (Target Population)	TI=("SME" OR "small and medium" OR "small business" OR "start-up" OR "entrepreneur*")
Field 2: Domain (Strategic Focus)	AND TS=("strategy" OR "strategic management")
Field 3: Mechanism (Adaptation & Action)	AND TS=("implementation" OR "execution" OR "agility" OR "resilien*" OR "dynamic capabilit*" OR "barrier*")
Web of Science Categories	Management OR Business
Document Types	Article OR Review Article
Language	English
Search Date	11 December 2025

As shown in Figure 9, the search strategy for WoS mirrored the structural logic of the Scopus query but was adapted to the specific field codes and subject filters of the WoS database.

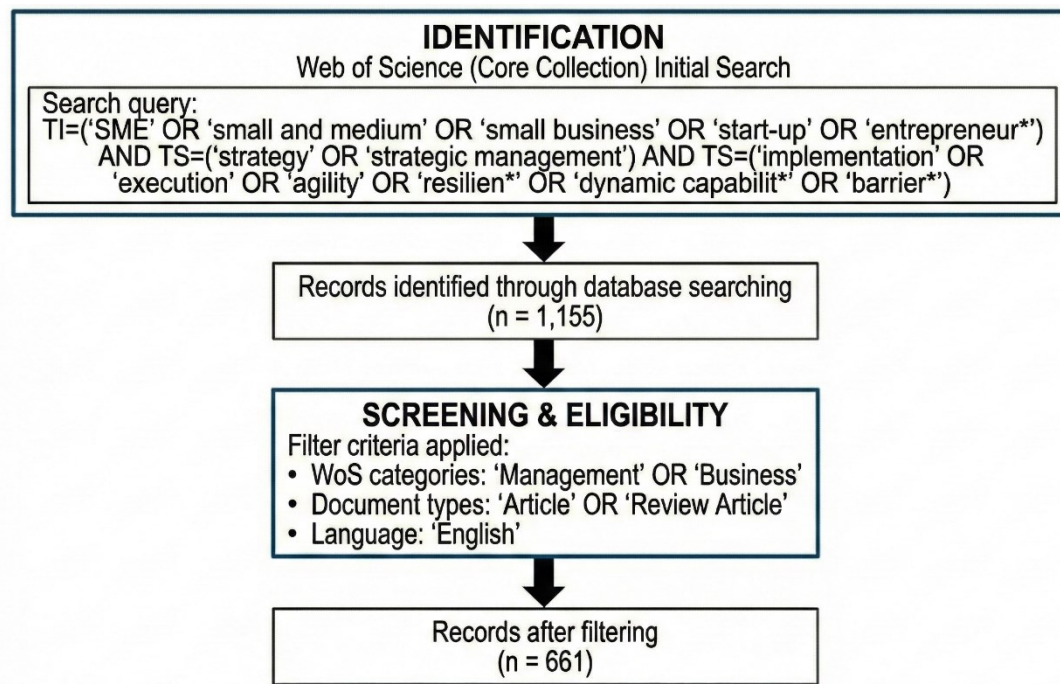


Figure 9. WoS Search and Selection Process (adapted from Page et al., 2021).

3.3 Study Selection and Refinement

After the search algorithms were run in Scopus and Web of Science, the research moved from data retrieval to data refinement. This stage was critical for turning the raw bibliographic corpus into a coherent dataset that could answer the research questions. To make sure that every research chosen looked at the intersection of resource constraints, strategic planning, and adaptive pivoting, a strict screening process was put in place. The refinement process followed the PRISMA criteria (Page et al., 2021), which made it clear how the final sample was chosen.

3.3.1 Inclusion and Exclusion Criteria

To maintain internal validity, a stringent inclusion and exclusion protocol was applied to the initial pool of documents. While the Boolean search strings provided a broad capture of the field, a granular manual screening was necessary to eliminate "false positives." A particular challenge in this domain is the semantic ambiguity of the term "agility." In

management literature, this can refer to strategic agility (organizational adaptability) or agile project management (software development methodologies like Scrum or Kanban).

To resolve this, the criteria detailed in Table 6 were developed. The primary filter focused on the unit of analysis. Studies focusing on large multinational enterprises (MNEs) were excluded because their adaptive mechanisms, often reliant on financial slack and redundant assets, differ fundamentally from the scarcity-driven logic of SMEs. Similarly, the protocol excluded purely technical papers that discussed "agility" solely as an IT or operational software method, as these lack the strategic dimension required for this thesis.

Table 6. Inclusion and Exclusion Criteria.

Criterion	Inclusion indicators (KEEP)	Exclusion indicators (DISCARD)	Rationale
Organizational scope	SMEs, Start-ups, Scale-ups. Focus on resource-constrained firms facing the "liability of smallness."	Large MNEs, Public Sector, NGOs. Organizations with significant slack resources or non-market drivers.	Adaptive mechanisms in large firms often rely on buffers (slack) rather than the resource fluidity required in SMEs.
Thematic focus	Strategic Agility. Focus on pivoting, business model innovation, and strategic renewal.	Operational/IT Agility. Focus on Scrum, Kanban, software coding cycles, or manufacturing floor efficiency.	The thesis investigates strategic direction changes, not operational project management techniques.
Document type	Articles & Reviews. Peer-reviewed empirical or theoretical contributions.	Editorials, Conference Papers, Books. Grey literature or non-peer-reviewed commentary.	Ensuring the findings are based on validated scientific evidence.
Language	English.	Non-English.	Ensuring consistent interpretation of theoretical concepts.

3.3.2 The Selection Flow (PRISMA Protocol)

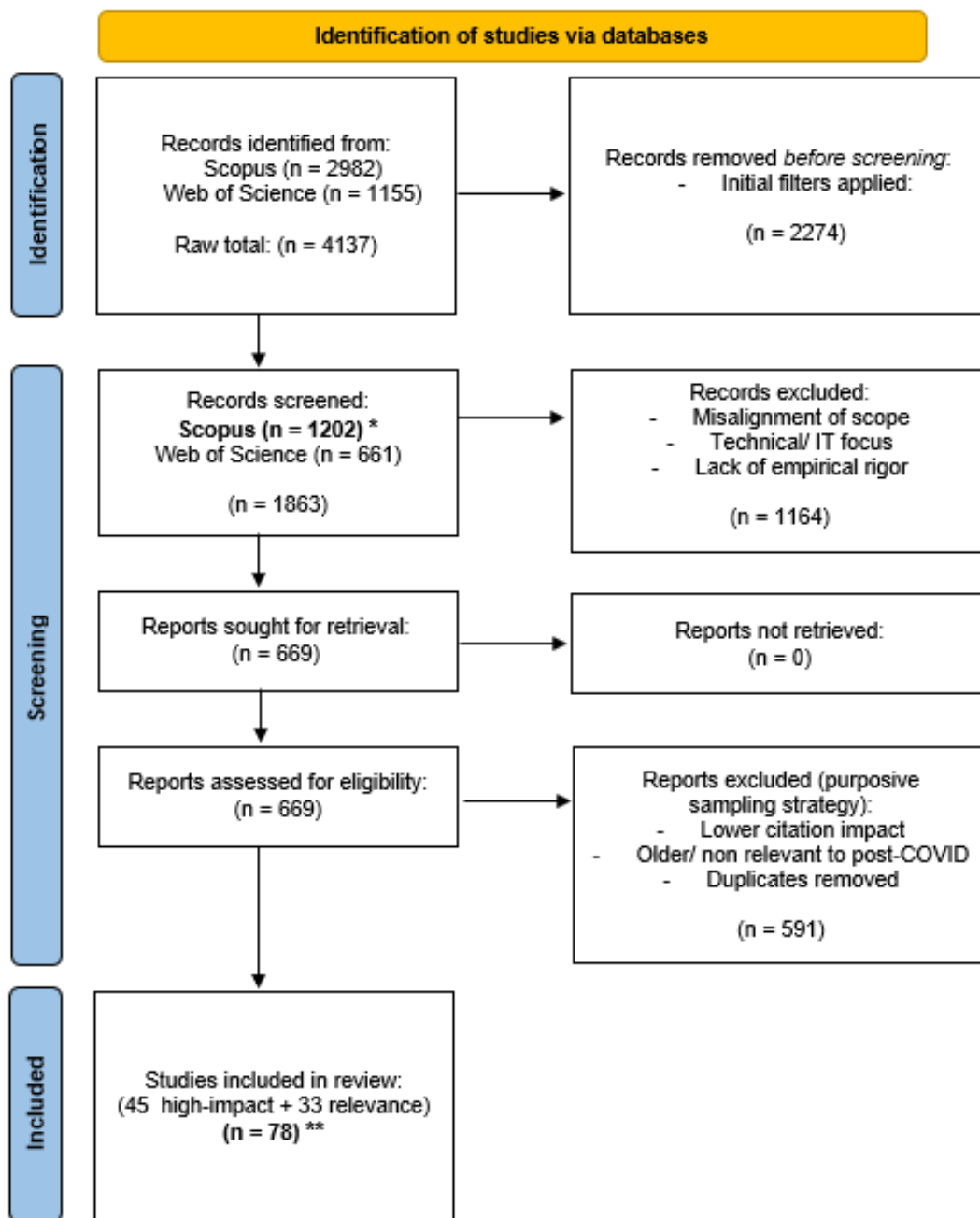
As visualized in Figure 10, the selection process followed a linear trajectory that systematically narrowed the initial identification of 4137 records into two distinct datasets: a broad corpus for the Stage 1 bibliometric mapping (n=1202) and a highly focused sample for the Stage 2 systematic literature review (n=78).

1. Identification (searching databases): Initial keyword-based queries conducted in Scopus and Web of Science generated a raw total of 4137 (Scopus, n=2982; WoS, n=1155) citations. After applying the initial limitation filters (subject area, language, document type), the filtered dataset comprised 1863 documents (Scopus, n=1202; WoS, n=661). It is important to note that the filtered Scopus dataset was utilized exclusively for the stage 1 bibliometric mapping, which aimed to illustrate the overall network.
2. Screening (title & abstract): This phase applied the criteria from Table 6 to the unique records. Titles and abstracts were assessed to filter out studies lacking empirical rigor or context. A significant portion of exclusions at this stage involved papers discussing "SME policy" (government perspective) rather than "SME strategy" (company perspective), or technical papers misapplying the term "agile" to software operations. This phase excluded 1164 records.
3. Eligibility (full-text assessment): The remaining 669 records proceeded to the eligibility phase, during which full-text reviews were conducted to assess substantive relevance to the pivot mechanism and the centrality of SMEs as the unit of analysis. Based on this full-text evaluation, the corpus was narrowed to 183 articles that demonstrated clear conceptual alignment with the research question. This step ensured methodological and thematic coherence while maintaining an appropriate analytical scope.

4. Final Selection (purposive sampling): The eligibility phase resulted in a valid collection of 183 articles. However, it proved to be excessively large for the detailed, line-by-line examination needed for the stage 2 systematic literature review. To address the volume of data, a citation-based purposive sampling strategy was employed. The publications were sorted according to their citation impact, resulting in the selection of the top 45 most-cited articles for in-depth qualitative synthesis. This choice is based on the assumption that articles with high citation counts embody the essential ideas or foundational theories of the field.

However, relying only on citation metrics creates a citation “time-lag bias”, which can lead to the neglect of recent yet important contributions that have not gathered substantial citations yet (Wang et al., 2017). To address this and ensure the review accurately represents the post-COVID business landscape, the sample was enhanced with a relevance-focused screening of recent publications (2023–2025). Articles of high relevance that specifically tackled contemporary volatility and SME adaptation were added to the dataset through manual selection.

Following the selection of high-impact and high-relevance studies, the records were imported into Zotero for final consolidation. Duplicate records between the Scopus and Web of Science datasets were removed. The final unique corpus comprised 78 articles (45 high-impact + 33 recent), which ensures that the review balances the historical significance of foundational works with the urgency of new empirical findings. This corpus illustrates how the academic literature understands SME adaptation and serves as the foundation for the qualitative insights discussed in the following chapters.

**Note:**

* The filtered Scopus dataset (n=1202) was utilized exclusively for the Stage 1 Bibliometric Analysis to ensure metadata consistency.

** The final consolidated corpus (n=78) served as the distinct dataset for the Stage 2 Systematic Literature Review.

Figure 10. PRISMA Flow-Diagram (adapted from Page et al., 2021).

3.4 Data Analysis Methods

To rigorously synthesize the collected data, the analysis was organized into two complementary stages. Following the B-SLR protocol (Marzi et al., 2025), this study combines a macroscopic quantitative visualization with a microscopic qualitative interpretation. This dual-layered approach ensures that the structural “map” of the field is enriched by a deep understanding of the underlying theoretical mechanics.

The first stage uses bibliometric mapping to visualize the broad landscape, with the focus on identifying the major trends, keywords, and relationships within the dataset. This quantitative step provides the necessary context for the second stage, where a rigorous thematic synthesis is applied to the selected articles. In this final phase, the focus shifts from counting keywords to understanding meaning, using systematic coding to uncover the actual mechanisms of pivoting. The specific tools and steps for each of these stages are detailed below.

3.4.1 Quantitative Bibliometric Analysis (VOSviewer)

To objectively map the field's intellectual structure, a bibliometric keyword co-occurrence analysis was executed using VOSviewer, adhering to the protocols suggested by Marzi et al. (2025). For this specific quantitative stage, the Scopus dataset (n=1202) was selected as the sole data source.

This decision was driven by methodological necessity: Scopus offers superior metadata consistency and broader coverage of business/management journals compared to Web of Science, making it suitable for science mapping in these domains (Rabetino et al., 2021). Furthermore, utilizing a single, consistent indexing structure avoids many of the format inconsistencies and parsing errors that arise when merging heterogeneous exports (e.g., .csv and .txt) from different databases for bibliometric software, which are known to degrade data quality if not rigorously cleaned (van Eck & Waltman, 2010; Aria & Cuccurullo, 2017).

After uploading the data (n=1202) to VOSviewer, a three-stage data cleaning process was implemented on the Scopus dataset to distill the 4215 raw keywords into a coherent network:

1. **Thresholding:** To filter out statistical noise, a frequency threshold was applied, retaining only keywords with a minimum of 11 occurrences. This initial filter reduced the massive pool of 4215 keywords down to 80 high-frequency keywords that met the threshold.
2. **Semantic consolidation (thesaurus):** A custom thesaurus file (see Table 7) was deployed to merge synonymous terms to maintain conceptual clarity. For instance, "small businesses" and "medium-sized enterprises" were merged into a single "SME" node, while "pandemic" and "coronavirus" were grouped under "COVID-19". This consolidation prevented fragmentation and further refined the list to 59 keywords.
3. **Contextual exclusion:** Finally, a manual screening removed 16 terms irrelevant to the theoretical scope. Geographic markers (e.g., "United Kingdom", "China", "South Africa") and demographic isolates (e.g., "gender", "women entrepreneurs", "higher education") were excluded to ensure the map reflected universal strategic mechanisms rather than specific contexts.

This filtration process reduced statistical noise and resulted in a final collection of 43 highly relevant keywords, which were utilised to produce the cluster visualisation displayed in the following findings chapter.

Table 7. Thesaurus File for Keyword Consolidation.

Label:	Replace with:
small and medium enterprises	SMEs
small and medium enterprise	SMEs
small businesses	SMEs
small business	SMEs
medium-sized enterprises	SMEs
smes	SMEs
small and medium-sized enterprise	SMEs
entrepreneurs	entrepreneurship
entrepreneur	entrepreneurship
entrepreneurialism	entrepreneurship
corporate entrepreneurship	entrepreneurship
social entrepreneurship	entrepreneurship
women entrepreneurs	entrepreneurship
firm performance	performance
business performance	performance
organizational performance	performance
sustainable development	sustainability
pandemic	covid-19
coronavirus	covid-19
strategic management	strategy
business strategy	strategy
corporate strategy	strategy
strategy execution	strategy implementation
digitalization	digital transformation
digitization	digital transformation
industry 4.0	digital transformation

Label:	Replace with:
digital marketing	marketing
marketing strategy	marketing
entrepreneurial marketing	marketing
market orientation	marketing

3.4.2 Qualitative Thematic Synthesis (SLR)

Following the bibliometric mapping of the field's intellectual structure, the qualitative phase employed a thematic synthesis to analyse the final corpus of 78 articles. Unlike a quantitative review that focuses on numbers, this approach identifies deep thematic patterns in qualitative data to explain the full research context (Braun & Clarke, 2006; Tranfield et al., 2003). This method effectively consolidates fragmented topics like SME resilience, digitalization, and agility into a single theoretical framework (Koporcic et al., 2025; Tawse & Tabesh, 2021). The synthesis followed a strict, multi-phase coding process based on recognised inductive and abductive methodologies (Ghezzi & Cavallo, 2020; Raeisy et al., 2025).

3.4.2.1 Phase 1: Data Extraction via Concept-Centric Matrix

To ensure a systematic and rigorous analysis, a concept-centric matrix was developed to extract standardized data from the final sample of articles (Webster & Watson, 2002). Rather than summarizing articles sequentially, this matrix allowed for the cross-referencing of key constructs relevant to the research problem (Tranfield et al., 2003). Data were extracted into a structured sheet containing the following specific fields, mentioned in Table 8 below.

Table 8. Structure of the Concept-Centric Extraction Matrix.

Dimension	Definition and analytical purpose	Representative citations
1. Context/volatility	Captures the specific environmental pressures (e.g., COVID-19, economic downturns, technological disruption) triggering the urgent need for change.	(Belitski et al., 2022; Guo et al., 2020)
2. The "planning" constraint	Identifies the specific rigidities or liabilities (e.g., liability of smallness, resource scarcity) that limited traditional strategic planning responses.	(Adomako et al., 2022)
3. The pivot type	Distinguishes the nature of the strategic change, classifying it as core vs. peripheral pivots or business model innovation.	(Motley et al., 2025; Clauss et al., 2021)
4. Key enabler	Extracts the specific antecedent or capability (e.g., digital tools, leadership unity) that facilitated the pivot when planning failed.	(Akpe et al., 2022; Doz & Kosonen, 2010)
5. Mechanism	Analyzes how the enabler functioned to overcome constraints (e.g., via rapid resource redeployment, bricolage, or enhanced sensing).	(Eisenhardt & Martin, 2000; Teece et al., 2016)
6. Outcome	Records the empirical result of the pivot, categorized as survival, resilience, or creative reconstruction.	(Kuckertz & Brändle, 2022; Koporcic et al., 2025)

3.4.2.2 Phase 2: Thematic Categorization

Following data extraction, an iterative coding process was utilized to group the extracted concepts into six broad categories. The process moved from descriptive codes to the developed analytical themes. This approach helped build a clear narrative about how organizations move from static planning to dynamic pivoting. The analysis identified six main themes:

Table 9. Thematic Categories of the Concept-Centric Synthesis.

Thematic category	Description and analytical focus	Representative citations
I. Theoretical foundation	Examines the paradigm shift from rigid planning to dynamic adaptability. Focus on how firms balance the need for stability with the necessity of being flexible in volatile markets.	(Eisenhardt & Martin, 2000; Teece et al., 2016)
II. Digital enablers	Analyzes "technology as a pivot tool", specifically the role of digital transformation, adaptive business intelligence (BI), and AI as mechanisms for sensing and seizing new opportunities.	(Akpe et al., 2022; Guo et al., 2020; Li et al., 2016)
III. Process enablers	Investigates "methodologies for agility", highlighting how iterative frameworks (e.g., lean startup loops, agile development) enable SMEs to experiment and adapt rapidly during crises.	(Ghezzi & Cavallo, 2020; Ries, 2011)
IV. Human enablers	Explores "leadership, culture, and resilience", focusing on how leadership unity, psychological capital, and organizational culture facilitate the rapid decision-making required for pivoting.	(Doz & Kosonen, 2010; Gayed & Ebrashi, 2023; Koporcic et al., 2025)
V. SME-specific enablers	Focuses on "surviving scarcity", analyzing how SMEs utilize bricolage and resource flexibility to overcome the liability of smallness and lack of slack resources.	(Adomako et al., 2022; Baker & Nelson, 2005)
VI. Network enablers	Examines "leveraging the ecosystem", investigating how SMEs use external partnerships, open innovation, and supply chain networks to access critical resources beyond their internal capacity.	(Liu & Yang, 2019; Battisti & Deakins, 2017; Solano Acosta et al., 2018)

3.4.2.3 Phase 3: Synthesis and Framework Development

The final phase involved synthesizing these six categories to answer the research sub-questions. By mapping the relationships between the identified barriers (e.g., planning constraints), enablers (digital, human, network), and mechanisms, the analysis constructed an explanatory framework of how SMEs achieve creative reconstruction through strategic pivoting.

4 Findings Part I: BIBLIOMETRIC ANALYSIS

This chapter presents the findings from the first stage of the B-SLR protocol and offers a numerical representation of the intellectual landscape within the field. This part uses the Scopus dataset (n=1202) to illustrate the development of strategic management research with the help of VOSviewer. Focus is on highlighting the key thematic clusters and changes in publication trends over time. This macroscopic perspective offers a data-driven context for the qualitative synthesis that follows.

4.1 Publication Trends: The Rise of Strategy Implementation Research

The temporal distribution of the dataset (see Figure 11) reveals a clear bimodal evolutionary pattern. Instead of growing steadily, the field appears as two separate eras separated by a major shift in thinking.

4.1.1 Phase 1: The Foundational Era (1981-2018)

For almost forty years, the level of interest in the topic stayed quite low and consistent. There was an average of fewer than 20 publications each year. The “long tail” signifies a crucial phase in which literature is predominantly centred on fixed strategic planning, as seen in the works of Ansoff (1975) and Porter (1980). The slow growth during this period explains a time when volatility was viewed as an exception rather than a constant, and strategic stability was the dominant management approach (Ansoff, 1984; Mintzberg, 1994).

4.1.2 Phase 2: The Resilience Surge (2019-2025)

The field has experienced significant changes since 2019 because of the COVID-19 pandemic and other global upheavals. The number of publications grew dramatically from 61 to 277 by 2025, which is an increase of nearly 450%. This shows that SME pivoting has become a major focus in current research. The sharp growth in publications demonstrates that SME pivoting is no longer a niche interest but a dominant theme in

contemporary research. The data shows that the contemporary academic literature is now focused not on whether SMEs need to adapt, but rather on the ways they can endure in a constant state of crisis.

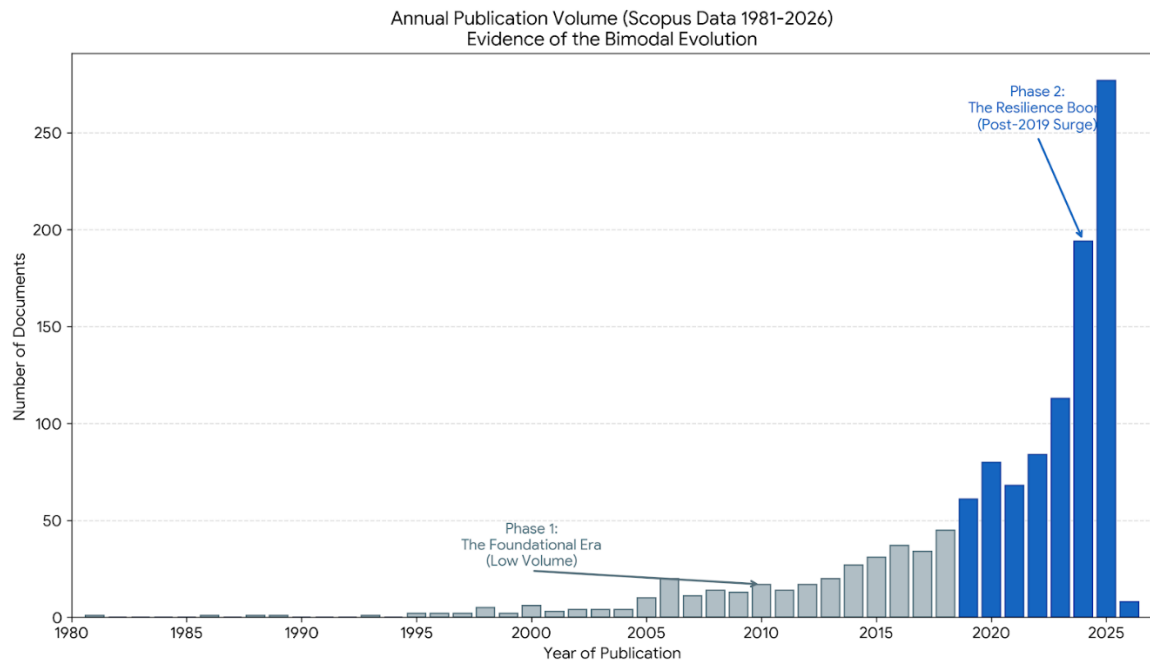


Figure 11. Annual Publication Volume (Scopus Data 1981–2026).

(Note: Please be aware that the data for 2026 is incomplete as of the date of this search).

4.2 Keyword Co-Occurrence Analysis

To objectively visualize the intellectual structure of the field, a keyword co-occurrence analysis was conducted in VOSViewer using the Scopus dataset (n=1202). This quantitative mapping reveals how the academic literature has organized itself around the central phenomenon of SME adaptation. The analysis focused on 43 high-relevance keywords, filtered to exclude generic terms and geographic isolates, ensuring a clear view of the theoretical landscape.

Figure 12 illustrates the density visualization of the landscape. It reveals that “entrepreneurship” and “SMEs” form the undisputed core of this research network,

appearing as the brightest yellow area with the highest density. This suggests that a vast majority of the literature revolves around these concepts, serving as the main link to various specialised topics. Secondary "hotspots" that are well-established yet slightly less dense include "sustainability", "innovation", "strategy", "dynamic capabilities", "resilience", and "COVID-19". This distribution suggests a field that has expanded from a central entrepreneurial core into distinct sub-streams.

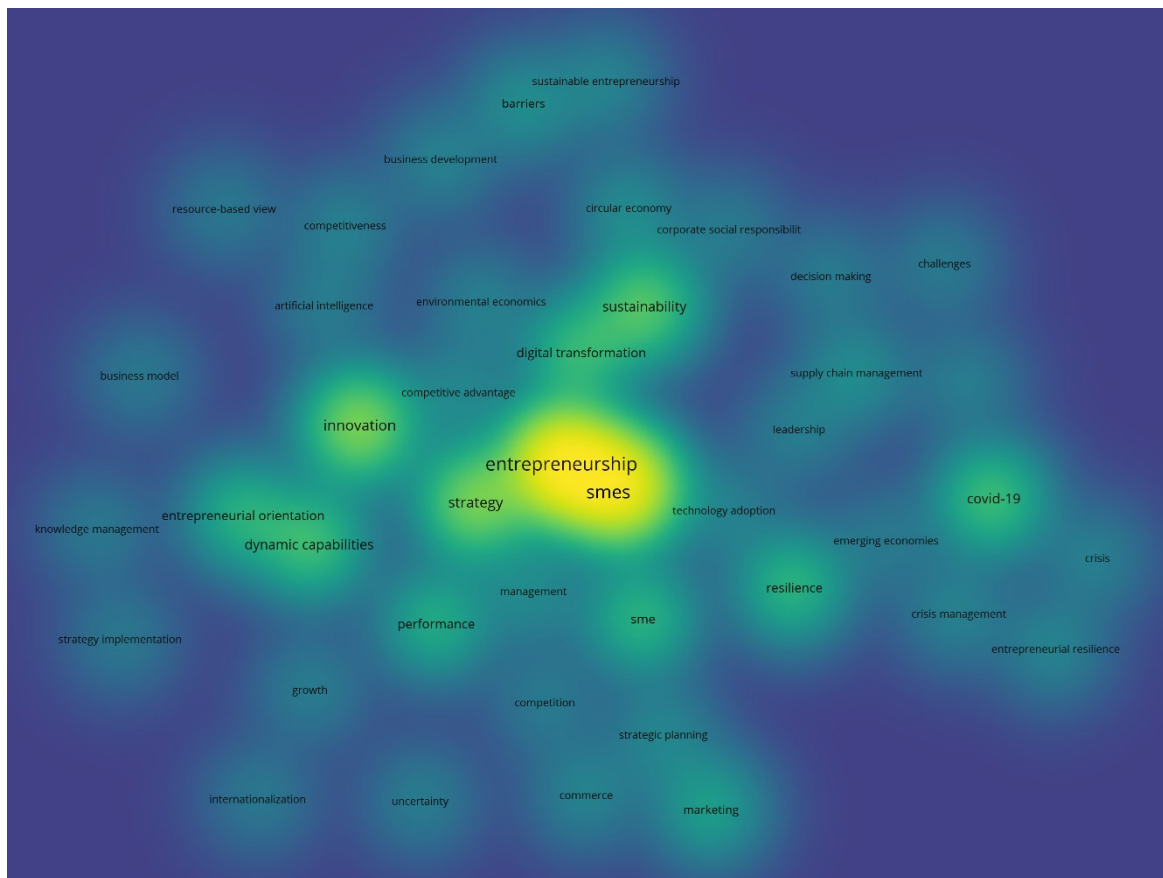


Figure 12. The Density Visualization of Research Themes.

The resulting network visualization (see Figure 13) displays a fragmented structure, characterized by five distinct thematic clusters (color-coded). These clusters do not represent a unified theory but rather competing or evolving "schools of thought"

4.2.1 Cluster 1: The Foundational Strategy Cluster (Blue)

Positioned in the center and lower section of the map, this cluster anchors the network, connecting the context (SME) with traditional concepts such as “strategic planning”, “marketing”, “commerce”, “competition”, and “competitive advantage”. It indicates that while new agile methods are emerging, structured planning remains a core component of organizational performance. The connection to the other clusters suggests that planning is what makes agility and resilience possible.

4.2.2 Cluster 2: The Entrepreneurial Agility Cluster (Green)

Located in the centre-left side of the network, this cluster represents the dynamic engine of SME strategy, focusing on internal company attributes. Dominated by keywords such as “entrepreneurship”, “innovation”, “business model”, “performance”, and “dynamic capabilities”, it highlights that successful implementation is linked to internal entrepreneurial behaviour rather than external market forces alone. This cluster shows that agility is not just a response to change; it is also an organisational capability embedded in the company’s resource configuration.

4.2.3 Cluster 3: The Resilience and Crisis Management Cluster (Red)

Situated on the right side, this cluster is heavily influenced by the COVID-19 pandemic. This cluster highlights terms like “COVID-19”, “resilience”, “leadership”, and “crisis management”. Its separation from traditional planning keywords suggests that dealing with volatility has evolved into a specific strategic capability. The prominence of this cluster suggests that a significant part of recent literature focuses on how entrepreneurs navigate extreme external shocks. This also confirms that volatility is no longer an unusual event, but a normal part of life for modern SMEs.

4.2.4 Cluster 4: Sustainability and Social Responsibility Cluster (Purple)

This cluster is positioned at the top of the map, and it represents the intersection of the green transition and ethical business development. Intertwined with the other clusters, this group includes keywords such as “sustainability”, “sustainable entrepreneurship”, “circular economy”, “barriers”, and “corporate social responsibility”. It suggests that environmental constraints and ethical mandates increasingly drive modern adaptation.

4.2.5 Cluster 5: Digital Transformation and Resource Frameworks (Yellow)

This cluster connects theoretical frameworks like the resource-based view with modern technological advancements. It is located at the top-left and features keywords such as “digital transformation”, “artificial intelligence”, “competitiveness”, and “resource-based view”. This cluster demonstrates that digitalization is not an isolated phenomenon but a critical enabler that supports both strategic planning (blue cluster) and entrepreneurial agility (green cluster).

4.3 Evolution of Research Themes

Beyond the static thematic clusters, the temporal overlay visualization (see Figure 14) adds a critical evolutionary dimension to the analysis. This map confirms the bimodal trend identified in the publication statistics, revealing a clear chronological gradient from “cold” colours (blue/purple, representing older average publication years circa 2018-2020) to “warm” colours (yellow, representing recent publications circa 2022–2024).

The overlay visualization analysis shows how research in the field has changed over time. From 2018 to 2024, there is a clear shift from established strategic frameworks to a more adaptive and technology-driven landscape. At the beginning of this period, which is shown by dark purple and blue colours, academic discussion was mostly about fundamental management concepts such as “strategy”, “marketing”, “commerce”, and

“knowledge management”. Before 2020, research focused on internal processes and internationalization strategies designed to secure competitive advantage and stability.

The visual evolution continues into the teal and light green zones of 2020 and 2021, where the literature moves from static planning to active agility. The literature emphasizes internal strengths, specifically “innovation” and “entrepreneurial orientation” in SMEs. “Digital transformation” and “sustainability” also became important, as studies explored how companies include new technology and environmental goals in their core business models to achieve continuous survival in changing environments.

The newest area of study, which is highlighted in bright yellow, shows a big shift towards paradigms that are responsive to crises and focused on the future. The current period is characterised by an emphasis on analysing the impacts of COVID-19 and the importance of adaptability in entrepreneurship and efficient crisis management. The increased focus on terms such as “resilience” and “challenges” in recent discussions reflects a shift within the academic literature towards examining how ventures withstand and adapt to external disruptions. Simultaneously, new subjects such as “artificial intelligence”, “circular economy”, and “sustainable entrepreneurship” have become some of the most vibrant areas of current research. This highlights that the newest research focuses on digital transformation and sustainability, which used to be peripheral concerns, but after the pandemic, they are now required for the survival and long-term success of companies.

5 Findings Part II: THEMATIC ANALYSIS

This chapter presents the qualitative findings derived from the systematic literature review of the final sample articles (n=78). While the bibliometric analysis in Chapter 4 visualized the structure of the research field, this thematic analysis examines the content of the studies to answer the research question regarding how SMEs transition from static planning to agile execution in volatile environments. The findings are categorized into the theoretical foundations of the shift from static to dynamic strategy, followed by an analysis of five distinct enablers: digital, process, human, SME-specific, and network, and concluding with the outcomes of strategic renewal.

5.1 Theoretical Foundation: The Shift from Static to Dynamic

A fundamental tension exists in the literature between the rigidity of traditional strategic planning and the necessity of strategic agility in volatile environments. Aponte-López and Torrealba (2025) argue that traditional planning has lost its value because it treats strategy as a rigid sequential process based on fixed predictions that are increasingly unsuitable for the VUCA conditions described by Uimonen (2024). This critique is mirrored by Uimonen (2024), who notes that for decades, companies focused on repeatable, optimized processes to achieve a level of stability that has now become an organizational trap leading to terminal rigidity. Ruiz et al. (2024) point out that a large number of organizations were originally built in an "age of stability", which reduces their preparedness for operating in today's fast-changing, highly interconnected environment. This finding aligns with Ali and Varoğlu (2022) and prior research on the pervasiveness of entrepreneurial orientation (Covin & Lumpkin, 2011; Wales et al., 2011), which argues that while mechanistic structures were optimal for settled market patterns, only organic, flexible structures can handle environments that are continuously in a state of transition.

Strategy implementation, historically treated as a "black box" or a secondary concern to formulation, has become the primary focus of contemporary research, moving away from early studies that prioritized strategic formulation. Tawse and Tabesh (2021) and

Noble (1999) argue that this underemphasis persists despite the assertion by Hambrick and Cannella (1989) that "without successful implementation, a strategy is but a fantasy". Lee and Puranam (2016), as synthesized by Tawse and Tabesh (2021), suggest that in complex environments, implementing even an "imperfect" strategy with relentless precision is superior to a great plan that lacks the dynamic capabilities to adapt during rollout.

A nuanced debate emerges regarding the nature of this shift, particularly concerning the distinction between dynamic capabilities and strategic agility. While Adomako et al. (2022) and Teece et al. (1997) conceptualize strategic agility as a dynamic capability grounded in the sensing, seizing, and reconfiguring framework, Mueller-Saegebrecht and Walter (2025) counter this by noting that while dynamic capabilities are often reactive to external stimuli, strategic agility is a proactive meta-capability. This distinction is critical for SMEs, as the literature suggests that pivoting is not merely a reactive response to a crisis, but a purposive and continuous morphing of the business model to stay ahead of the game, a concept supported by Doz and Kosonen (2010) and Belahcene and Chaib (2025). Zahra et al. (2006) further refine this by distinguishing "substantive capabilities" (solving a problem) from "dynamic capabilities" (the higher-order ability to change how the firm solves problems), emphasizing that the latter is a learned pattern of collective activity.

Koporcic et al. (2025) and Adomako et al. (2022) emphasize that SMEs are especially vulnerable due to resource scarcity and a limited ability to influence their external environment. However, Arsawan et al. (2022) and Zighan and Dwaikat (2023) argue that this very smallness allows for a flatter hierarchy and less formal processes that make SMEs more capable of implementing change than large, bureaucratic companies. Autio (2017) and Sarasvathy (2001) suggest that in these "creation contexts", entrepreneurs should abandon linear, predictive planning in favour of effectual reasoning and experimentation.

Collectively, these studies indicate a broader pattern where the shift from static to dynamic is enabled by the interaction of meta-capabilities. Doz and Kosonen (2010) identify these as strategic sensitivity, leadership unity, and resource fluidity, a framework later validated by Ruiz et al. (2024) and Sari and Ahmad (2022). This theoretical shift is empirically supported by Ferreira et al. (2020), who demonstrate that dynamic capabilities must be mediated by specific innovation capabilities to translate into competitive advantage and superior firm performance successfully. Larabi (2025), Demil et al. (2015), and Merín-Rodríguez et al. (2024) agree on the idea that this dynamic transition is operationalized through strategic renewal and business model innovation, which serve as mediators between a firm's resources and its sustainable performance in a hyper-competitive landscape. Ultimately, as Kuckertz and Brändle (2022) conclude, when an exogenous shock destroys the pre-crisis status quo, the ability to engage in creative reconstruction becomes the differentiator between mere survival and long-term growth.

To clarify the operational shift required for SMEs, Table 10 synthesizes the core tensions between traditional planning logic and the agility-based perspective. It contrasts the historical reliance on static prediction and efficiency with the modern necessity for dynamic experimentation, resilience, and continuous renewal.

Table 10. Core Tensions in Planning vs. Agility.

Theme	Traditional planning logic	Agility-based perspective
Strategic approach	Linear and deterministic: Strategy is viewed as a formal, sequential process of analysis, formulation, and implementation. It assumes the future can be forecasted based on historical data. This approach often relies on long-term planning models (Mintzberg, 1994).	Iterative and emergent: Strategy is dynamic and emerges through experimentation (Eisenhardt & Martin, 2000). It relies on "strategic sensitivity" to sense anomalies and pivot quickly rather than following a fixed roadmap (Aponte-López & Torrealba, 2025; Doz & Kosonen, 2010).
Resource management	Accumulation and ownership (RBV): Competitive advantage is derived from owning valuable, rare, inimitable, and non-substitutable (VRIN) resources (Barney, 1991; Wernerfelt, 1984). The focus is on protecting core competencies and building defensive barriers.	Fluidity and bricolage: Advantage comes from "resource fluidity", the ability to rapidly decouple and redeploy resources (Doz & Kosonen, 2010). In resource-scarce environments, SMEs utilize "bricolage" to overcome limitations (Kuckertz & Brändle, 2022).
Innovation process	Stage-gate / perfection: Product development follows a rigid "waterfall" model. The goal is to launch a perfect product after extensive internal planning to avoid failure (Cooper, 1990)	Lean startup/experimentation: Innovation follows a "build-measure-learn" loop (Ries, 2011). The goal is to launch a "minimum viable product" (MVP) to gather negative feedback early and pivot the "core" idea if necessary (Ghezzi & Cavallo, 2020; Motley et al., 2025).
Leadership and decision making	Top-down and analytical: Decisions are made by senior leadership after exhaustive analysis. Implementation is often blocked by "silent killers" such as poor vertical communication and organizational silos (Beer & Eisenstat, 2000).	Unity and distributed: "Leadership unity" allows the top team to make bold decisions quickly without internal politics (Doz & Kosonen, 2010; Mueller-Saegbrecht & Walter, 2025). Decision-making is decentralized to empower those closest to the market (Štrukelj & Dankova, 2025).
Dealing with uncertainty	Risk mitigation/prediction: Uncertainty is viewed as a threat to be minimized through detailed forecasting and insurance. The focus is on "causation", predicting the future in order to control it (Sarasvathy, 2001).	Resilience/effectuation: Uncertainty is an opportunity to be exploited. The focus is on "effectuation" (controlling what you can to create the future) (Sarasvathy, 2001) and "resilience" (bouncing forward after shocks) (Linnenluecke, 2017; Uimonen, 2024; Koporcic et al., 2025).
Role of technology	Support and efficiency: IT is viewed primarily as a support function. It is used in accounting and record-keeping and to automate existing repetitive functions such as order processing (Porter, 1985).	Digital options and enabler: IT creates "digital options", investments that allow firms to scale up, down, or pivot operations instantly (Sambamurthy et al., 2003). Technology is a primary driver of strategic renewal (Akpe et al., 2022; Merín-Rodríguez et al., 2024; Ogreaan, 2025).

Establishing this agility-based logic demands a reconfiguration of the company's operational architecture. As illustrated in Figure 15, the capacity to pivot depends on five distinct but mutually reinforcing enablers. These enabling factors are crucial for SMEs when executing a new strategic direction towards agility. The following subchapters will examine each dimension, exploring how digital, process, human, SME-specific, and network capabilities drive successful renewal.

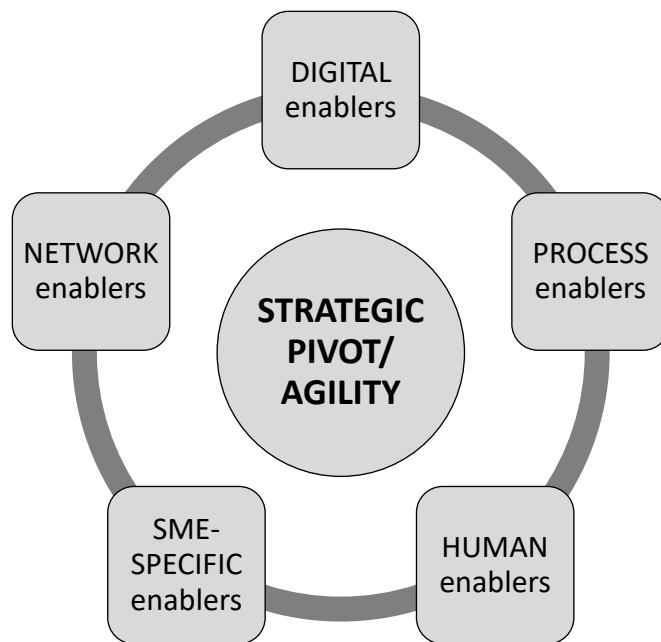


Figure 15. Integrative Enablers of Strategic Agility in SMEs.

5.2 Digital Enablers: Technology as a Pivot Tool

Across the sources, a consensus exists that digitalization acts as the primary options generator and catalyst for pivoting in the modern business landscape. Guo et al. (2020) and Akpe et al. (2022) agree on the idea that digital artifacts and platforms exponentially expand the sensing scope of a company, allowing it to predict market failures and supply chain breakdowns before they fully manifest. Building on this, Maiolini et al. (2025) argue that digital transformation is essential during crises because it allows organizations to bridge business goals with emerging societal needs, specifically by enabling the rapid digital redesign of products and services. However, a recurring tension in the literature exists regarding the depth of this technological integration. While early research often treated technology as a support function for efficiency, contemporary research by Ogrean (2025) and Merín-Rodrigáñez et al. (2024) emphasizes a shift from simple digitization (converting analog to digital) to digital transformation, which involves a fundamental redesign of the company's value proposition.

Contemporary research diverges from early studies by emphasizing the necessity of Adaptive BI, rather than viewing traditional Business Intelligence (BI) merely as a retrospective reporting tool. Akpe et al. (2022) argue that traditional BI's reliance on historical, static data limits the rapid strategy recalibration required during disruptions. Adaptive BI is different from traditional systems since it uses real-time data processing and machine learning to adapt to changes. This approach is a proactive way to stay competitive. These results support Cimino et al. (2025), who argue that advanced technologies like artificial intelligence are crucial for promoting ecosystem-wide success and helping startups and SMEs in adapting to changes.

However, a gap still exists in understanding how collaboration between humans and machines is managed, even though Akpe et al. (2022) and Guo et al. (2020) highlight the main factors influencing technology adoption. Li et al. (2016) bridge this gap by introducing the concept of e-leadership and the architectural view. They argue that the strategic value of digital tools is only realized when leaders can prototype business logic choices alongside technological shifts. This perspective helps to explain why the technology is an essential enabler, but it does not clarify why certain digitalised SMEs continue to struggle with effective pivoting. Štrukelj and Dankova (2025) offer a counterargument, observing that although AI can handle routine and analytical tasks, it poses serious challenges when it comes to normative and ethical decision-making. They argue that the ultimate responsibility still lies with human leaders, whose judgment cannot be replicated by algorithms. This places AI functions as a supportive tool rather than an independent decision-maker.

Although cutting-edge digital mastery represents a theoretical ideal for large corporations, it requires modification for the resource-constrained SME context. This ideal is often replaced by a more pragmatic approach to "digital options". Bin Hameed and Creazza (2025) highlight that SMEs often hesitate to adopt disruptive technologies like blockchain because of misunderstandings and the hype around them, rather than a lack of interest. They emphasize that for an SME, a digital pivot must be aligned with a

clear business strategy rather than merely following technological trends. This is supported by Koporcic et al. (2025), who note that the digital divide can severely restrict an SME's ability to pivot, as those relying on outdated legacy systems lack the connectivity required for real-time recalibration.

The literature indicates that technology functions, overall, as an integrative coordination mechanism within agile SMEs. Its strategic impact depends not on adoption alone but on dynamic managerial capabilities that translate data into coordinated action. As Sambamurthy et al. (2003) argue, digital options promote strategic sensitivity, ultimately allowing the company to launch a variety of competitive actions that ensure long-term resilience. In SMEs, the pivot emerges as a socio-technical phenomenon whereby technological capabilities support sensing activities, but leadership practices and organizational culture ultimately influence the speed and success of execution.

5.3 Process Enablers: Methodologies for Agility

The analysis highlights three constant struggles: experimentation versus control, speed versus coordination, and improvisation versus routinization. Transitioning to an agile strategy requires replacing linear execution with iterative frameworks that prioritize learning by doing. Ghezzi and Cavallo (2020), following the foundational logic of Ries (2011), converge on the idea that Lean Startup Approaches (LSAs), specifically the "build-measure-learn" loop, serve as the core mechanism for business model innovation (BMI) in digital entrepreneurship. This finding aligns with Autio (2017), who characterizes lean entrepreneurship as an explicit focus on experimentation-driven, practice-oriented learning that utilizes frequent, iterative pivoting to validate business model assumptions without incurring excessive risk.

Contextualizing this search for a scalable model, Eisenhardt and Martin (2000) provide the necessary theoretical boundary condition regarding market velocity, adding nuance to Ghezzi and Cavallo (2020) and Autio (2017). They argue that in moderately dynamic markets, effective processes are "detailed, analytic, and stable", relying on existing

knowledge. However, in high-velocity markets, these processes must shift to being "simple, experiential, and fragile". This distinction is critical: if an SME applies complicated, analytic routines in a high-velocity context, the result is likely to be a delayed or ineffective strategic response. Instead, as Burgelman (1994, 1996) and Eisenhardt and Sull (2001) observe, successful companies use "simple rules" to prioritize attention and enable rapid improvisation in unpredictable environments.

Between the speed of these iterative loops and the structural coordination required for their success, a recurring tension exists. Tawse and Tabesh (2021) counter the pure "speed" narrative by noting that implementation frequently fails, turning a strategy into a "fantasy" (Hambrick & Cannella, 1989) if there is a lack of common understanding of goals among team members. Drawing on Okhuysen and Bechky (2009), they argue that coordination is not just a by-product of agility but an "emergent state" requiring accountability and predictability. This suggests that for an SME, a pivot is not merely a change in direction but a coordination challenge where the periphery of the organization must be aligned with the new core strategy to avoid what Beer and Eisenstat (2000) term the "silent killers" of implementation, such as poor vertical communication and conflicting priorities.

Moving beyond early studies that focused on BMI as a purely strategic act, contemporary research by Lefebvre (2025) integrates an operational dimension. He argues that lean inventory management is a specific form of organizational innovation that creates the financial slack or flexibility necessary for resource-constrained companies to fund iterative pivots. This perspective helps explain how SMEs can overcome the "liability of smallness" identified by Aldrich and Auster (1986). While Singh and Kumar (2020) note that SMEs are often slow to adopt supply chain best practices, Lefebvre (2025) demonstrates that those who do achieve higher performance because they can redeploy capital from inventory to high-value strategic opportunities.

Specific hierarchies of these changes remained largely absent from the discourse until the recent framework by Motley et al. (2025). Building on Thompson's (1967) distinction between the technical "core" and "periphery", they reveal that for academic and high-tech entrepreneurs, feedback targeting the core components of a business idea motivates significantly more productive changes than feedback on peripheral elements. Their findings suggest that "core changes", such as redefining the value proposition or customer segments, are positively associated with commercialization success, whereas "peripheral changes" in isolation are often inefficient and redundant.

These studies suggest a broader pattern of "creative reconstruction", as conceptualized by Kuckertz and Brändle (2022). This process transcends simple resilience; it requires SMEs to move from a "logic of leverage" (exploiting existing assets) to a "logic of opportunity" (seizing unpredictable advantages) through deliberate learning mechanisms. As Zollo and Winter (2002) conclude, this necessitates knowledge articulation and codification, where companies move beyond passive "learning by doing" to systematically generate and modify operating routines in pursuit of improved effectiveness (Kitenga et al., 2020). Ultimately, for SMEs, the literature indicates that effective agility emerges from a balance between the improvisational entrepreneurial behaviour described by Fisher et al. (2020) and the disciplined experimentation associated with the Lean Startup Method.

5.4 Human Enablers: Leadership, Culture, and Resilience

Human factors are identified by the literature as the primary "silent killers" of strategic pivoting and implementation. Beer and Eisenstat (2000) and Tawse and Tabesh (2021) agree on the idea that top-down management styles, poor vertical communication, and ineffective senior teams create mutually reinforcing barriers that block organizational learning. For a pivot to succeed, it requires more than a visionary leader; it necessitates a leadership group that remains connected to the knowledge embedded in lower organizational levels through dialogue and collaboration (Dalcher, 2019). Uimonen (2024) support this view, contending that leaders need to evolve from "experts" to "catalysts".

While a tactical focus and feedback aversion limit the expert style, the catalyst style proactively empowers stakeholders to expand organizational capacity.

Recurring tension exists in the literature between the need for centralized control during a crisis and the requirement for decentralized, autonomous action. While Zighan and Dwaikat (2023) note that SMEs often rely on centralized decisions due to their simple structures, Arsawan et al. (2022) and Doz and Kosonen (2010) counter this by noting that strategic agility is actually enabled by "leadership unity". This meta-capability allows decision-makers to make bold and quick decisions. Taken together, these studies suggest a broader pattern where leadership unity serves as the micro-foundation for strategy implementation effectiveness, ensuring that organizational members perceive strategic goals in the same way and remain committed to the pivot.

How internal cognitive resources can be leveraged to overcome leadership barriers is not fully explained by Beer and Eisenstat (2000), despite their identification of the key issues. Hmieleski et al. (2015) and Luthans et al. (2007) bridge this gap by introducing the construct of psychological capital (PsyCap), comprised of optimism, self-efficacy, resilience, and hope. Mahamat et al. (2025) extend this perspective to the SME context, arguing that these traits are intangible resources that allow entrepreneurs to challenge preconceived ideas and adapt quickly to change. This is especially critical in "creation contexts" characterized by uncertainty, where the leader's individual ability to remain focused and steady is more predictive of firm performance than their formal business experience (Hmieleski, 2015).

For resource-constrained firms, individual "coping flexibility", the ability to use a broad repertoire of strategies to regulate emotions and solve problems, is the primary mechanism for maintaining organizational resilience. Duan et al. (2025) and Gautam et al. (2025) support the idea that an entrepreneur's personal resourcefulness is the enabling condition for implementing pivots, as it enables them to reframe challenges into opportunities. However, the literature remains silent on the specific issue of the

workers' human capital within SMEs. Dabić et al. (2020) critique the field's tendency to spotlight the entrepreneur while neglecting the broader workforce that actually executes the strategy. They argue that the success of a pivot depends on an organizational culture of "honest conversation". Here, the truthfulness regarding performance gaps provides the necessary push to manage change through open engagement. However, recent evidence also suggests that hiring individuals with prior entrepreneurial experience can significantly boost innovation outputs (Lindbjerg & Vladasel, 2025) and support the integrative growth of the firm (Wiklund et al., 2009). Furthermore, Compans and McMullen (2007) argue that these strategic entrepreneurs are essential for discovering and exploiting opportunities.

To synthesize the findings from sections 5.2 (digital), 5.3 (process), and 5.4 (human), Table 11 was created. It contrasts the "old way" vs. the "agile way" across these specific enablers.

Table 11. Key Operational Shifts in Agile Enablers.

Enabler Domain	From: Static Orientation	To: Agile/Dynamic Orientation	Conceptual Basis
Digital	Digitization: Converting analog to digital for efficiency; BI is retrospective (reporting on the past).	Digital transformation: Fundamental redesign of value proposition; Adaptive BI uses AI/ML for real-time sensing.	Akpe et al. (2022); Ogreen (2025)
Process	Linear execution: Detailed, analytic routines suitable for stable markets.	Simple rules: Simple, experiential, and fragile processes suitable for high-velocity markets.	Eisenhardt & Martin (2000); Burgelman (1996)
Change type	Peripheral changes: Tweaking features or secondary elements (often redundant).	Core changes: Redefining the value proposition or customer segment (linked to success).	Motley et al. (2025); Thompson (1967)
Leadership	Expert level: Tactical problem-solving, aversion to feedback, centralized control.	Catalyst level: Empowering stakeholders, building capacity, and Leadership Unity.	Joiner (2019); Uimonen (2024)
Psychology	Experience: reliance on formal business tenure and history.	Psychological Capital (PsyCap): Resilience, hope, self-efficacy, and optimism to manage shock.	Mahamat et al. (2025); Luthans et al. (2007)

5.5 SME-Specific Enablers: Surviving Scarcity

Regarding the “liability of smallness” in high-velocity environments, the literature presents a distinct duality. Koporcic et al. (2025) and Adomako et al. (2022) emphasize that SMEs are uniquely vulnerable to exogenous shocks because they operate within narrower margins and face severe resource constraints. While Koporcic et al. (2025) and Adomako et al. (2022) argue that resource scarcity is a primary hindrance, Arsawan et al. (2022) and Zighan and Dwaikat (2023) counter this by noting that smallness is itself a processual enabler. Morrish and Jones (2020) further refine this perspective by observing that in post-disaster environments, successful entrepreneurs shift from “resource leveraging” to “resource organising”, a mechanism where they use effectual reasoning to strictly control and retain diminishing assets to ensure immediate business continuity. Consequently, the literature indicates that the relationship between size and resilience is complex. These studies show a pattern where the success of a pivot is predicated on transforming the “liability of smallness” into a source of competitive speed and adaptive learning.

Entrepreneurial bricolage often replaces the theoretical ideal of “slack resources” (Meyer, 1982) in resource-constrained firms, meaning they must make do with resources at hand to solve new problems. Linnenluecke (2017) points out that while large companies can build up financial reserves to absorb shocks, SMEs must rely on their inherent flexibility. Baker and Nelson (2005) and Kuckertz and Brändle (2022) converge on the idea that bricolage is not merely a defensive reaction but a proactive “logic of opportunity” that allows firms to ignore traditional constraints and create something from nothing. This finding aligns with Lefebvre’s (2025) concept of lean inventory management as an organizational innovation; by holding minimum levels of inventory, SMEs can relax financial constraints and save the capital necessary to fund strategic pivots.

Despite identifying the key elements of resource construction, Baker and Nelson (2005) do not explain how informal bricolage evolves into institutionalized capabilities. Warsono et al. (2025) address this gap through the 5E model (endowment,

enlightenment, enrichment, empowerment, enhancement), arguing that business acumen must evolve from a natural, reactive ability into a cultivated, systematic dynamic capability. While valid for large corporations, the concept of “aggressive innovation” or entrepreneurial proclivity (Griffith et al., 2006) requires modification for the SME context. Chen et al. (2010) and Rahayu and Day (2017) reveal that in highly volatile markets, safe and stable strategic orientations (conservative postures) may sometimes offer a stronger buffering capacity than aggressive innovation agendas, provided they are supported by disciplined resource stewardship.

One area where the literature lacks clarity is the specific issue of the long-term survival rates of SMEs that rely exclusively on effectual reasoning (Sarasvathy, 2001) without eventually adopting more formal strategic planning as they mature. Autio (2017) suggests that for new ventures, the absence of age-induced rigidities is a critical asset for internationalization, while Johanson and Vahlne (2009) warn that these same companies must eventually build “relationship-specific social capital” to overcome the liability of outsidership. Ultimately, for the SME, surviving scarcity is not about the volume of assets held, but the resource fluidity and strategic sensitivity to redeploy those assets before market shifts turn current competencies into core rigidities.

The concept of the “liability of smallness” acting as both a positive and negative factor is complex. Table 12 aims to clarify this argument effectively.

Table 12. The Duality of SME Smallness in Volatile Environments.

Dimension	The “Liability” (Constraint)	The “Asset” (Enabler)	Synthesis / Outcome
Structural	Resource scarcity: Vulnerable to shocks due to narrow margins and lack of financial slack (Koporcic et al., 2025).	Processual agility: Flatter hierarchies allow for faster shared mental models and decision-making (Arsawan et al., 2022).	Smallness amplifies vulnerability under rigid strategies but enhances speed under fluid configurations.
Operational	Digital divide: Inability to afford complex “cutting-edge” tech stacks or maintain formal alliances.	Bricolage: Ability to use “resources at hand” and informal networks to solve problems creatively (Baker & Nelson, 2005).	SMEs replace “slack resources” with “resource fluidity” to survive.

Dimension	The "Liability" (Constraint)	The "Asset" (Enabler)	Synthesis / Outcome
Strategic	Outsidership: Lack of legitimacy and formal power in the ecosystem (Autio, 2017).	Effectual reasoning: Freedom from age-induced rigidities; ability to experiment without bureaucratic inertia.	Success depends on transitioning from "effectuation" (start-up) to "formal planning" (scale-up) over time.

5.6 Network Enablers: Leveraging the Ecosystem

Strategic pivoting is increasingly conceptualized as an ecosystemic act rather than an isolated organizational event. Afonso and Franco (2024) and Liu and Yang (2019) converge on the idea that environmental uncertainty serves as the primary lever for alliance formation, as SMEs must access partners' resources to maintain the flexibility required to face market complexity. This finding aligns with Cimino et al.'s (2025) concept of the entrepreneurial ecosystem, where a complex network of interdependent actors (including companies, universities, and investors) collectively influences the ability of startups and SMEs to absorb and adapt to groundbreaking technological shifts. Jafari-Sadeghi et al. (2022) further synthesize this by identifying networking capabilities as a core driver that assists international high-tech SMEs in overcoming the scarcity of inherent resources and creating a profound impact on collaborative performance.

Despite the consensus on networking benefits, a central tension emerges in the literature. While Adomako et al. (2022) and Solano Acosta et al. (2018) argue that networking capability is an essential antecedent to strategic agility, Rodrigo-Alarcón et al. (2018) counter this by noting that high levels of relational social capital can also produce rigidity. This recurring tension in the literature suggests that while dense networks allow for the transmission of tacit knowledge, they can also act as barriers against identifying disruptive new opportunities due to limited awareness of emerging opportunities. Liu and Yang (2019) and Cimino et al. (2025) agree on the idea that an SME's competitive advantage has shifted from its internal resource base to its network position, but only if the company maintains the absorptive capacity to assimilate external knowledge without falling into the groupthink trap. Ritala et al. (2021) add nuance to this by showing that external relational capital is a focus variable that interacts

with an employee's proactiveness to determine the success of digital strategy implementation.

Key mechanisms of network resources are identified by Liu and Yang (2019), yet they do not fully explain how geopolitical risks are managed within international alliances. Sinani and Zilja (2025) address this gap by noting that political legitimacy concerns in host countries often discourage the investments of international high-tech SMEs, particularly when diplomatic relations between home and host countries are strained. This perspective helps explain why some SMEs must reduce their investments in adversarial environments, but it struggles to account for why highly innovative SMEs can actually enhance their legitimacy and mitigate these risks by contributing to the local host economy. Taken together, these studies suggest a broader pattern where the success of a pivot depends on the firm's ability to balance its internal consistency with its external legitimacy within a volatile global landscape.

"Entrepreneurial bricolage" within informal networks often replaces the theoretical ideal of maintaining vast, formal alliance infrastructures for resource-constrained firms. Afonso and Franco (2024) conclude that for SMEs, relationships of friendship, respect, and trust are more important for establishing an alliance than formal contractual agreements. Solano Acosta et al. (2018) further contextualize this for the SME sector, noting that while smaller firms face resource limitations, their flatter hierarchies require simpler technological infrastructures to manage these networks compared to large conglomerates. Ultimately, as Warsono et al. (2025) observe, this transition from resource mobilization to sustained resilience requires MSMEs to move through an "enrichment" phase, where business acumen is institutionalized through continuous knowledge integration and strategic refinement within the digital platform ecosystem.

5.7 Outcomes: Performance and Competitive Advantage

Strategic agility is positively associated with improved performance and competitive advantage under volatile market conditions, according to a growing body of literature. Adomako et al. (2022) find that strategic agility serves as a vital mediating mechanism between firm-level capabilities and international performance, particularly for SMEs in emerging economies. This finding is mirrored by Troise et al. (2022), who empirically demonstrate that organizational agility has a direct positive impact on financial performance as well as both product and process innovation performance. A recurring theme in contemporary studies is the transition from focusing solely on short-term economic survival to investigating sustainable business performance as a long-term outcome. Larabi (2025) and Warsono et al. (2025) argue that strategic renewal and the institutionalization of business acumen are essential for achieving innovation-driven sustainability that rivals cannot easily imitate.

Shifted away from early studies, which treated performance as a direct result of asset ownership, contemporary research emphasizes the role of competitive advantage as a mediating construct. Sari and Ahmad (2022) highlight that strategic agility mediates the relationship between intellectual capital and SMEs' competitiveness in the post-pandemic landscape. This perspective shifts the focus from simply possessing resources to the capability-building process identified by Sambamurthy et al. (2003), where competitive actions are the primary antecedents of financial success.

The effectiveness of agility-related processes, while valid in stable periods, is often contingent upon the severity of external shocks. According to Lefebvre (2025), lean inventory management typically improves performance by creating financial slack, but during the COVID-19 pandemic, its benefits decreased for SMEs because of the opportunity costs of lost sales. This aligns with findings by Mueller-Saegebrecht and Walter (2025), who suggest that companies with high strategic sensitivity are able to identify market signals earlier and proactively implement business model improvements that provide them a competitive advantage before their competitors can react.

Long-term survival rates of academic-led pivots remained unexplored until the recent longitudinal findings of Motley et al. (2025). They demonstrate that core changes to a business idea, such as redefining the value proposition, significantly increase the likelihood of an operationally active venture being created. Ultimately, as Gautam et al. (2025) and Portuguese Castro and Gómez Zermeño (2021) conclude, the recovery of entrepreneurial intentions and actions following a shock is predicated on the leader's psychological capital and the firm's adaptive capacity. Taken together, these studies suggest that the primary outcome of agility is not just profit, but the creation of an agile enterprise capable of continuous self-renewal. Uimonen (2024) further synthesizes this by showing that successful transformations towards business agility result in reduced time-to-market and enhanced customer value, even in a highly uncertain environment.

Figure 16 summarizes this chapter by showing how crisis antecedents drive adaptive pivoting mechanisms, moderated by network and SME-specific enablers, to achieve sustainable performance and continuous renewal.

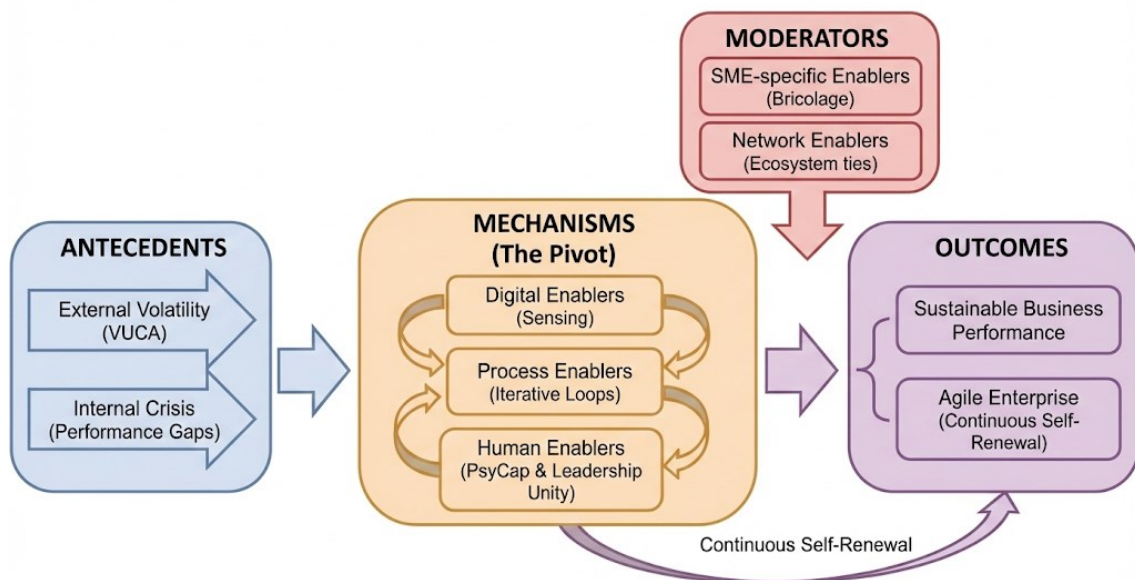


Figure 16. Thematic Map of Strategic Pivoting Mechanisms.

5.8 Synthesis: A Conceptual Framework

The findings of this study challenge the traditional, linear conception of strategy implementation. The thematic analysis indicates that for SMEs operating in volatile environments, resilience emerges not as a static organizational attribute but as a dynamic, enacted capability. To synthesize these interrelated findings, this thesis proposes the Strategic Agility Architecture (SAA) (see Figure 17). The architecture is grounded in recurring patterns observed across the empirical themes, rather than being imposed a priori.

This framework contributes to the strategic agility literature by moving beyond a simple input–output logic. Instead, it conceptualizes the SME as a dynamic system, as reflected in the empirical findings, where strategic antecedents (resources) are transformed into sustainable outcomes through a specific mechanism of orchestration. SAA builds on Teece’s dynamic capabilities (sensing/seizing/transforming; Teece, 2007), SME bricolage research (Baker & Nelson, 2005), and Lean Startup methodologies (Ries, 2011), while extending these through a novel orchestration layer and recursive renewal loop that addresses SME resource constraints in volatile environments.

5.8.1 Strategic Antecedents: The Resources for Change (I)

At the base of the architecture lie the strategic antecedents, which constitute the micro-foundations of change. These antecedents represent the resources and enabling conditions that provide SMEs with the potential to sense, initiate, and support strategic pivots under conditions of uncertainty.

- Technological substrate: digital enablers (e.g., AI, IoT) provide “digital options” that expand the firm’s sensing scope and enable more informed and timely strategic decision-making (Sambamurthy et al., 2003; Warner & Wäger, 2019).

- Cognitive substrate: human enablers, such as psychological capital, resilience, and leadership unity, create the psychological safety required to question legacy assumptions and abandon rigid plans (Luthans et al., 2007).
- Relational substrate: network enablers supply access to slack resources and external tacit knowledge that resource-constrained SMEs are unable to generate internally (Adler & Kwon, 2002).

Together, these antecedents do not ensure agility in themselves but form the latent capacity upon which strategic agility can be enacted.

5.8.2 The Orchestration of Strategic Capabilities (II)

The central contribution of this framework is the identification of the orchestration layer. The findings indicate that resources alone do not guarantee agility; instead, they must be activated through the orchestration of Dynamic Capabilities (Teece, 2007)

- Sensing (strategic sensitivity): The organizational capacity to detect emerging threats and opportunities by leveraging digital tools and network-based intelligence (Teece, 2007; Uimonen, 2024).
- Seizing (resource fluidity): The operational capacity to physically shift assets from existing uses and reallocate them rapidly (Teece, 2007). This is often operationalized via entrepreneurial bricolage in the SME context (Baker & Nelson, 2005).
- Transforming (reconfiguring): The continuous realignment of organizational processes and structures to sustain the new strategic direction (Teece, 2007).

Through orchestration, SMEs translate latent resources into coordinated strategic action despite structural and financial constraints.

5.8.3 Iterative Process Methodologies: Enacting Change (III)

The findings further indicate that orchestration is operationalized through iterative process methodologies, specifically the Lean Startup Method. The framework shifts implementation from a logic of predictive planning to a logic of experimentation, where the "build-measure-learn" loop makes it easy to do rapid pivoting (Ries, 2011; Ghezzi, 2019). For the SME, this means making changes to the business model's core, like the value proposition or customer segments. To pay for these changes, the SME should use lean inventory management to create the financial slack necessary to fund these shifts.

5.8.4 Sustainable Outcomes and Recursive Renewal (IV)

Finally, the framework incorporates a recursive feedback loop linking outcomes back to the company's micro-foundations. Successful sustainable outcomes do not just signal the end of a crisis but generate "learning effects" that enhance the firm's future capacity for change. These learning effects strengthen managerial cognition, resource flexibility, and network relationships, while also reinforcing the company's strategic antecedents over time. Through this process of recursive renewal, the SME evolves from a fragile entity into an antifragile enterprise (Taleb, 2013) that benefits from volatility by continuously improving its adaptive capacity.

Existing models, such as the SME Business Agility Framework (Arno, 2025), structure agility across levels but lack an explicit orchestration engine. In contrast, Strategic Agility Architecture (SAA) provides a dynamic, recursive system tailored to SME constraints, positioning it as a conceptual guide for strategic renewal in turbulent environments.

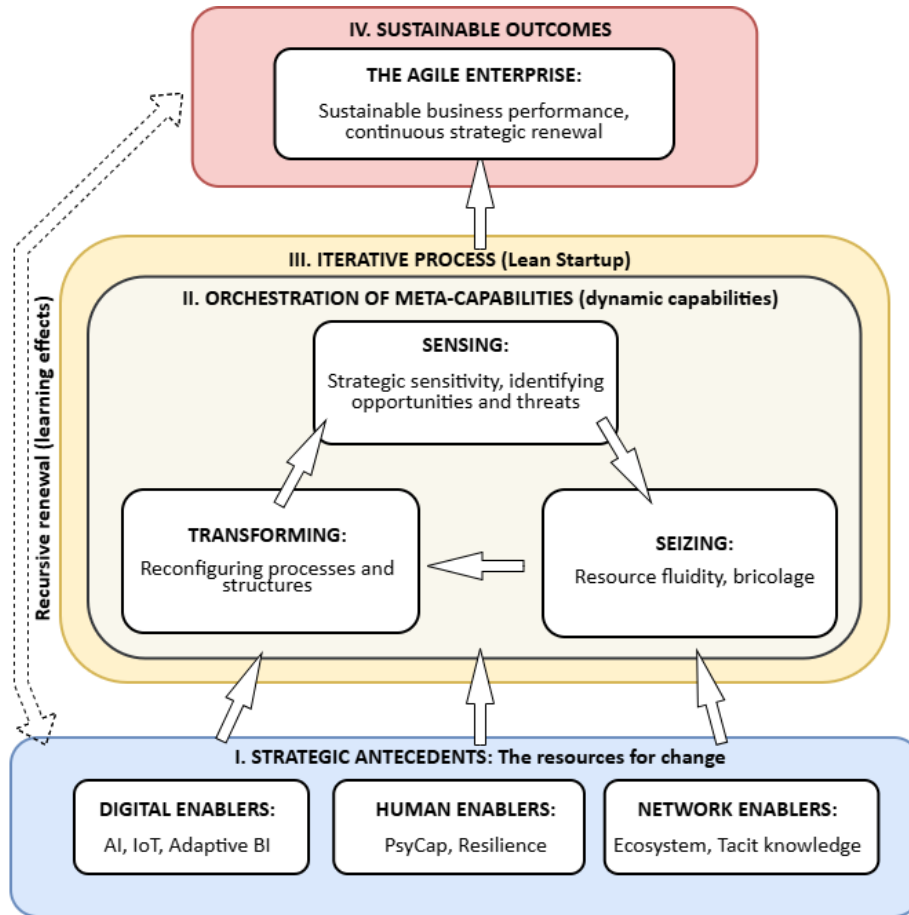


Figure 17. The Strategic Agility Architecture (SAA).

6 Discussion

This chapter begins with a summary of the key findings on how SMEs pivot in volatile markets. Next, it discusses the theoretical implications, focusing on the role of dynamic capabilities in small and medium-sized companies. The chapter then provides managerial implications, offering practical advice for business owners facing uncertainty. Finally, it acknowledges the limitations and trustworthiness of this study and suggests recommendations for future research.

6.1 Summary of The Key Findings

This section synthesizes the findings of the systematic literature review to answer the central research question: *How the strategic management literature conceptualizes the shift from formal planning to adaptive pivoting in SMEs, and which mechanisms enable this transition under conditions of volatility.* The summary is structured around the three sub-questions introduced in Chapter 1.

6.1.1 The Conceptual Shift: From Linear Planning to Strategic Agility

Addressing SQ1: *How has the academic literature on SME adaptation evolved, and how has the focus shifted from linear planning to strategic agility within the literature?*

The literature demonstrates a clear conceptual shift in how SME adaptation is understood. Traditional strategy theory was built on a foundation of stability. The assumption was that through linear planning, long-term forecasting, and hierarchical control, uncertainty could be effectively quantified and managed (Ansoff, 1975). However, this assumption has become increasingly difficult to defend. Empirical and conceptual studies consistently show that in high-velocity markets, rigid planning frameworks reduce responsiveness and intensify organizational inertia when speed is needed most (Aponte-López & Torrealba, 2025).

As a result, strategic management research has moved toward frameworks that prioritize adaptability over prediction. Frameworks such as dynamic capabilities and strategic agility have shifted our understanding of strategy, recasting it as an ongoing process of adjustment (Teece et al., 1997; Eisenhardt & Martin, 2000). For SMEs, this distinction is existential. The consensus in recent literature is that competitive advantage is inherently a temporary condition that requires constant renewal (D'Aveni, 1994). The capacity to pivot has effectively replaced forecast accuracy as the primary metric for survival in high-volatility environments.

6.1.2 Mechanisms of Transition: The Role of Dynamic Capabilities

Addressing SQ2: How do dynamic capabilities, specifically strategic agility, i.e., strategic sensitivity, leadership unity, and resource fluidity, facilitate the transition from planning to pivoting?

The transition is primarily explained through the dynamic capabilities framework, where adaptation relies on the interplay of three core mechanisms: strategic sensitivity, leadership unity, and resource fluidity (Teece, 2007; Doz & Kosonen, 2010).

Strategic sensitivity allows SMEs to detect weak signals and new risks even when they don't have a lot of analytical resources. Companies become more responsive by bypassing formal market forecasts in favor of continuous interaction with consumers, partners, and operational data. Leadership unity is essential in translating sensed signals into action. The literature showcases that fragmented leadership structures delay pivots, while aligned decision-making accelerates commitment under uncertainty (Doz & Kosonen, 2010; Ruiz et al., 2024). Resource fluidity then enables execution by allowing assets, roles, and processes to be redeployed without excessive internal resistance.

Taken together, these capabilities explain how SMEs move from intention to action. Pivoting is not portrayed as a spontaneous response, but as an outcome of organizational conditions that enable rapid reconfiguration. This directly addresses the theoretical gap

identified in the introduction regarding how resource-constrained companies can operationalise adaptability.

6.1.3 SME Constraints, Volatility, and the Resilience-Pivoting Relationship

Addressing SQ3: How do SME-specific resource constraints and environmental volatility shape the relationship between strategic pivoting and company resilience?

The literature consistently emphasizes that SME-specific constraints shape how pivoting contributes to resilience. Limited financial slack, concentrated decision authority, and dependence on key individuals increase vulnerability to environmental shocks, but they also reduce structural complexity. This paradox explains why the liability of smallness functions simultaneously as a constraint and an enabler of adaptation (Baker & Nelson, 2005; Liu & Yang, 2019).

In volatile environments, SMEs are more likely to rely on entrepreneurial bricolage, network collaboration, and effectual logic to compensate for resource scarcity (Sarasvathy, 2001; Kuckertz et al., 2020). In this context, pivoting supports resilience by enabling directional changes that preserve organizational viability. The literature, therefore, conceptualizes resilience fundamentally as a forward-looking adaptive capacity. This aligns with crisis management perspectives that emphasize learning and transformation (Boin & van Eeten, 2013; Koporcic et al., 2025).

This relationship clarifies why traditional planning fails to ensure survival. Planning assumes continuity, while resilience in volatile environments requires discontinuity managed through controlled experimentation and rapid reallocation of resources.

Figure 18 visualizes the alignment of the key research findings with the sub-questions. It demonstrates how the conceptual shift from planning to agility (SQ1) is operationalized through dynamic capabilities (SQ2), enabling SMEs to transform resource constraints into resilient, forward-looking outcomes (SQ3).

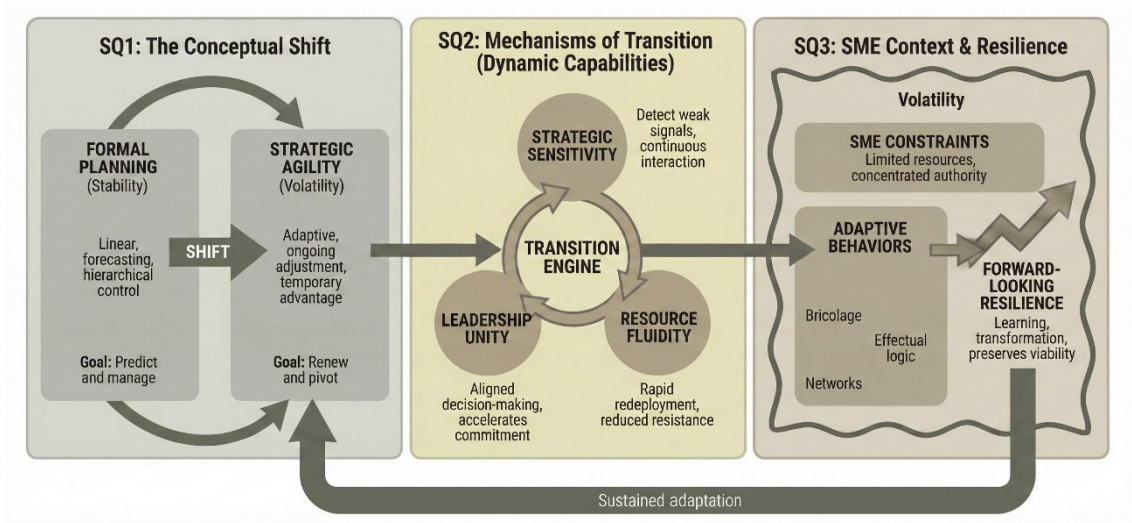


Figure 18. Alignment of Research Findings with the Sub-Questions.

6.2 Theoretical Implications

This thesis contributes to the strategic management literature by challenging the hegemony of linear planning models in the context of resource-constrained SMEs operating under high volatility. While traditional frameworks (Ansoff, 1975; Porter, 1980) emphasize prediction, positioning, and the defense of static competitive advantages, this study provides empirical and conceptual support for a paradigm shift toward strategic agility and dynamic capabilities.

First, the study extends the dynamic capabilities view by clarifying the specific mechanisms required for SMEs to pivot. While Teece et al. (1997) and Eisenhardt and Martin (2000) established that dynamic capabilities are the routines used to reconfigure resources, this research identifies digitalization not merely as an operational tool, but as a foundational dynamic capability for sensing and seizing. The findings support Sambamurthy et al.'s (2003) concept of "digital options", demonstrating that in modern SMEs, digital maturity acts as a precursor to agility by decoupling information from physical assets, thereby lowering the transaction costs of strategic redirection. This challenges the view that technology is a support function, repositioning it as a generative mechanism for strategic renewal.

Second, the thesis offers a theoretical reframing of the "liability of smallness". The traditional resource-based view argues that SMEs are disadvantaged by a lack of slack resources required to buffer against shocks. However, this study suggests that in highly volatile environments, the lack of structural inertia and bureaucratic ossification allows SMEs to pivot faster than MNEs. By employing entrepreneurial bricolage and effectual reasoning, SMEs convert their resource constraints into a flexibility advantage. This contributes to the entrepreneurship literature by suggesting that "resourcefulness" serves as a meta-capability that substitutes for "resources" during crises.

Third, the study elucidates the micro-foundations of strategic pivoting, integrating psychological and behavioral dimensions into strategy formation. The findings indicate that strategic agility is not solely an organizational property but is heavily dependent on the psychological capital and leadership unity of the top management team. This supports the behavioral strategy perspective that cognitive flexibility and resilience in leadership are antecedents to organizational pivoting. The "silent killers" of strategy implementation identified by Beer and Eisenstat (2000) are shown to be mitigated in agile SMEs through high-velocity decision-making loops rather than rigid long-term planning.

Finally, the research reinforces the relational view of strategy. It demonstrates that for SMEs, the unit of analysis for resilience is not the isolated firm but the firm-in-network. Successful pivoting is often an ecosystemic act, reliant on external knowledge absorption and cooperative alliances to compensate for internal deficits. This implies that strategic agility is a collective phenomenon, where the capacity to pivot is tethered to the fluidity of the firm's external relationships.

6.3 Managerial Implications

The findings of this study offer actionable insights for SME owner-managers navigating the friction between the necessity for operational stability and the imperative for strategic adaptation. Survival in volatile environments requires a fundamental shift in managerial logic: leaders must move from a posture of prediction to one of preparedness.

6.3.1 Adopt "Disciplined Flexibility" over Rigid Planning

Managers should abandon the attempt to predict the future through 3-5-year static plans. Instead, they should adopt a "disciplined flexibility" approach. This involves setting a broad strategic vision but keeping the execution strategy fluid. Managers should implement agile processes, such as the Lean Startup's "build-measure-learn" loop, to test business model assumptions cheaply and quickly. Strategy meetings should shift from annual reviews to shorter, more frequent cycles (e.g., quarterly or monthly) to assess environmental changes and pivot triggers.

6.3.2 Leverage Digitalization as a Sensing Mechanism

Investment in digital technologies should not be viewed solely as an efficiency play but as a strategic survival mechanism. Managers must utilize digital tools (e.g., big data analytics, social media listening, cloud platforms) to enhance their "sensing" capabilities. By detecting weak signals of market shifts early, such as changes in customer sentiment or supply chain disruptions, SMEs can buy themselves the necessary time to reconfigure resources before a crisis hits. Digital platforms also provide the "resource fluidity" necessary to scale operations up or down rapidly without heavy asset accumulation.

6.3.3 Cultivate Leadership Unity and Psychological Safety

The ability to pivot rests on the leader's ability to foster Leadership Unity and a culture of psychological safety. SME leaders must actively manage the tension between

commitment to the current strategy and the flexibility to abandon it. This requires creating an environment where "honest conversations" about what is not working are encouraged rather than punished. Leaders must demonstrate high levels of resilience (PsyCap) to maintain workforce morale during the chaos of a pivot, reframing threats as opportunities for renewal rather than signals of failure-

6.3.4 Utilize the Ecosystem to Overcome Resource Scarcity

SMEs should not attempt to weather volatility in isolation. Managers must actively cultivate external networks and strategic alliances to access "slack" resources they cannot afford to own. This includes engaging with suppliers, customers, and even competitors (co-opetition) to share the burden of uncertainty. By embedding the firm in a supportive ecosystem, managers can access external knowledge and capabilities that facilitate faster pivoting and innovation.

6.3.5 Operationalize Bricolage

When facing sudden shocks, managers should apply bricolage, solving new problems by combining existing resources in novel ways. Rather than waiting for perfect information or ideal resources (which may never arrive), managers should act with the means at hand. This "effectual" approach allows the company to maintain momentum and create new value propositions without requiring significant capital injection.

6.4 Limitations

Every research design involves a series of trade-offs, and this study is no exception. While the Mixed-Method Review (B-SLR) provides a rigorous way to map the field, the findings should be interpreted within specific methodological and contextual boundaries.

First, the scope of the data collection is inherently shaped by the search strategy. By selecting specific keywords such as "strategic agility", "pivoting", and "dynamic capabilities", the study prioritizes a specific theoretical lineage. This decision effectively

filters out adjacent literature, such as "turnaround management" or generic "crisis response", that might describe similar phenomena without using this specific terminology.

Second, this study acknowledges limitations related to the article selection protocol. While systematic literature reviews commonly rely on journal quality rankings (e.g., ABS/AJG) to ensure rigor and consistency (Tawse & Tabesh, 2025), this review employed a citation-based purposive sampling strategy. This approach was adopted because the SME adaptation literature is fragmented and interdisciplinary, with relevant insights frequently published in specialized or cross-disciplinary journals that may not be highly ranked in the AJG. Relying exclusively on journal quality rankings could therefore limit the coverage of the review and risk excluding theoretically or empirically relevant contributions.

Specifically, the core sample consisted of the 45 most-cited articles identified as highly relevant to SME adaptation using Scopus and Web of Science. However, reliance on citation counts introduces a potential "time-lag bias", whereby older and more established theories are disproportionately privileged over recent empirical contributions (Wang et al., 2017). To mitigate this limitation, the foundational sample was supplemented with 33 high-relevance recent studies published between 2023 and 2025. Nevertheless, this trade-off should be considered when interpreting the findings, particularly concerning the balance between theoretical depth and contemporaneity.

Third, the "SME" category itself presents a challenge of generalization. This thesis synthesizes findings across a broad spectrum of small businesses, ranging from 10-person family firms to 249-person medium enterprises. Treating this group as a single, undifferentiated unit oversimplifies their complex reality. The "liability of smallness" manifests very differently for a high-growth tech startup than it does for a traditional manufacturing firm. Consequently, the conceptual framework proposed here operates

at a high level of abstraction and may require adaptation when applied to specific industry sectors or firm sizes.

Fourth, there is a limitation regarding the "publication lag" inherent in academic research. This study investigates how firms handle extreme volatility and speed. However, the academic publishing cycle is slow. The literature analysed here reflects strategies that were successful in the past (such as during the influence of COVID-19), but it may not fully capture the real-time, emerging tactics companies are using right now. The data is, by definition, historical, whereas the phenomenon of agility is immediate.

Finally, while the bibliometric analysis (VOSviewer) offers objective statistical data, the qualitative thematic synthesis involves an element of interpretive subjectivity. Despite the use of a rigorous protocol, the coding of themes and the construction of the conceptual framework are influenced by the researcher's own theoretical lens. The connections drawn between "resource fluidity" and "leadership unity" represent one possible interpretation of the data, not the only one. Future empirical testing would be necessary to validate these relationships in a live business setting.

6.5 Suggestions for Future Research

This thesis identified a significant limitation regarding the heterogeneity of the SME sector. The current analysis treated SMEs largely as a unified category, yet the "liability of smallness" manifests differently for a high-growth technology startup compared to a traditional family-owned manufacturing firm. Future studies should conduct comparative analyses to investigate how the pivoting mechanism differs across these contexts. Specifically, researchers should investigate whether traditional family firms rely more heavily on "leadership unity" and social capital for resilience, while high-tech ventures prioritize "digital options" and rapid experimentation.

The bibliometric analysis highlighted a growing emphasis on sustainability and social responsibility as critical factors in organizational adaptation. Future research should investigate how resource-constrained SMEs reconcile long-term green investments with the immediate liquidity needs of crisis survival. Specifically, scholars must determine whether "sustainable entrepreneurship" functions as a resilience mechanism or if rigid adherence to circular compliance creates new structural inertias that limit rapid pivoting.

Finally, the findings in Chapter 5 exposed a tension regarding the role of networks. While alliances are generally seen as enablers of resource fluidity, some literature suggests that excessive reliance on close-knit networks can lead to groupthink and rigidity. Future research could explore the weaknesses of social capital in SMEs, investigating at what point strong network ties cease to be a buffer and begin to act as a barrier to identifying disruptive market signals.

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Appendices

Appendix 1. Bibliographic Details of Included Studies in the SLR (n=78)

ID	Author(s) & Year	Article Title	Journal / Source	Methodology	Context (Country / Industry)	Primary Thematic Focus
P01	Adomako et al. (2022)	Strategic agility of SMEs in emerging economies: Antecedents, consequences and boundary conditions	International Business Review	Quantitative (Survey)	SMEs (Ghana)	SME-Specific / Outcomes
P02	Afonso & Franco (2024)	Business alliances, shared resources and environmental uncertainty: A qualitative study	Not specified	Qualitative (Thematic Analysis)	SMEs (General)	Network
P03	Akpe et al. (2022)	The role of adaptive BI in enhancing SME agility during economic disruptions	Not specified	Systematic review (Narrative)	SMEs / Economic disruptions	Digital
P04	Ali & Varoğlu (2022)	Revisiting the Mintzberg, Lawrence, and Lorsch theories about organisational structure, strategy, and environmental dynamism	Technology Analysis & Strategic Management	Conceptual	Small firms (Pakistan)	Theoretical
P05	Ampong et al. (2025)	Technology deployment and SME sustainability: The moderated mediation effect of innovation strategy and SME performance	Business Process Management Journal	Quantitative (PLS-SEM)	SMEs (Ghana)	Digital / Outcomes
P06	Aponte-López & Torrealba (2025)	From strategic planning to agility: Strategic management approaches	Revista DYNA	Systematic literature review	General management	Theoretical / Process
P07	Arsawan et al. (2022)	Developing organizational agility in SMEs: An investigation of innovation's roles and strategic flexibility	Journal of Open Innovation	Quantitative (PLS-SEM)	SMEs (Indonesia)	Process / Outcomes
P08	Autio (2017)	Strategic entrepreneurial internationalization: A normative framework	Strategic Entrepreneurship Journal	Normative framework	International new ventures	Theoretical
P09	Beer & Eisenstat (2000)	The silent killers of strategy implementation and learning	Sloan Management Review	Conceptual / Qualitative	General management	Human / Process
P10	Belahcene & Chaib (2025)	A bibliometric study of strategic agility based on the Scopus database	VSS	Bibliometric analysis	General management	Theoretical
P11	Belitski et al. (2022)	Economic effects of the COVID-19 pandemic on entrepreneurship and small businesses	Small Business Economics	Systematic literature review	SMEs (Global)	SME-Specific / Outcomes
P12	Bin Hameed & Creazza (2025)	Exploring the adoption of blockchain by a small and medium-sized enterprise: An Italian action research case study	Business Process Management Journal	Action research	SME (Italy)	Digital
P13	Cimino et al. (2025)	Artificial intelligence and dynamic capabilities: Enhancing sustainable competitive advantage in business organizations	International Entrepreneurship and Management Journal	Quantitative (PLS-SEM)	Startups (Italy)	Digital / Network
P14	Company's & McMullen (2007)	Strategic entrepreneurs at work: The nature of discovery and search in the context of strategic change	Small Business Economics	Conceptual	Entrepreneurship	Theoretical

P15	Covin & Lumpkin (2011)	Entrepreneurial orientation theory and research: Reflections on a needed construct	Entrepreneurship Theory and Practice	Conceptual	General entrepreneurship	Theoretical
P16	Dabić et al. (2020)	Pathways of SME internationalization: A bibliometric and systematic review	Small Business Economics	Bibliometric & systematic review	International SMEs	Theoretical / Network
P17	de Diego & Almodóvar (2022)	Mapping the research trends on strategic agility: A bibliometric analysis	European Journal of Management and Business Economics	Bibliometric review	Strategic agility	Theoretical
P18	Demil et al. (2015)	Business models in strategic entrepreneurship	Strategic Entrepreneurship Journal	Conceptual	Strategic entrepreneurship	Theoretical
P19	Doz & Kosonen (2010)	Embedding strategic agility: A leadership agenda for accelerating business model renewal	Long Range Planning	Conceptual	General strategy	Theoretical
P20	Duan et al. (2025)	Coping flexibility and psychological resilience: Small tourism entrepreneurs' coping strategies during the COVID-19 pandemic	Current Issues in Tourism	Quantitative	Tourism entrepreneurs	Human
P21	Eisenhardt & Martin (2000)	Dynamic capabilities: What are they?	Strategic Management Journal	Conceptual	General strategy	Theoretical
P22	El Idrissi et al. (2023)	Organizational crisis preparedness during the COVID-19 pandemic: An investigation of dynamic capabilities and organizational agility roles	International Journal of Organizational Analysis	Quantitative (PLS-SEM)	Firms (Morocco)	Process
P23	Fernández-Mesa & Alegre (2015)	Entrepreneurial orientation and export intensity: Examining the interplay of organizational learning and innovation	International Business Review	Quantitative	SMEs (Spain)	Process / Outcomes
P24	Ferreira et al. (2020)	Dynamic capabilities, innovation and competitive advantage	Technovation	Quantitative	Firms (Portugal)	Theoretical / Outcomes
P25	Foss et al. (2008)	Entrepreneurship and the resource-based view of the firm	Strategic Entrepreneurship Journal	Conceptual	General management	Theoretical
P26	Gautam et al. (2025)	SME Hotel Business Performance: Entrepreneurship, Distribution-Centric Recovery, and Trade-Oriented Network Relations Strategies	Cogent Business & Management	Mixed methods	SME hotels (Nepal)	SME-Specific / Human
P27	Gayed & Ebrashi (2023)	Organizational ambidexterity and firm resilience: Empirical evidence from uncertain transition economic context	International Journal of Organizational Analysis	Quantitative	Manufacturing (Egypt)	Outcomes
P28	Genc et al. (2019)	SME internationalization and innovation performance: The role of market orientation	Industrial Marketing Management	Quantitative	International SMEs	Network / Outcomes
P29	Ghezzi & Cavallo (2020)	Agile business model innovation in digital entrepreneurship: Lean startup approaches	Journal of Business Research	Qualitative (Case study)	Digital startups (Italy)	Process
P30	Griffith et al. (2006)	Entrepreneurial proclivity and performance: A structural equation modeling	Journal of Retailing	Quantitative	General business	Outcomes
P31	Guo et al. (2020)	Digitalization and the crisis response of SMEs: Evidence from China	Frontiers of Business Research in China	Quantitative	SMEs (China)	Digital
P32	Hmieleski et al. (2015)	Entrepreneurial action, response to surprise, and the cognitive perspectives	Strategic Entrepreneurship Journal	Quantitative	New ventures (USA)	Human

P33	Horváth & Szabó (2019)	Driving forces and barriers of Industry 4.0: Do multinational and small and medium-sized companies have equal opportunities?	Technological Forecasting & Social Change	Qualitative	SMEs vs MNCs (Hungary)	Digital / SME-Specific
P34	Jafari-Sadeghi et al. (2022)	The role of agility in the internationalization of high-tech SMEs	Technological Forecasting & Social Change	Mixed methods	High-tech SMEs	Process / Network
P35	Kah et al. (2025)	Minoritised social entrepreneurs' adaptation to the crisis: The role of community support	International Journal of Entrepreneurial Behavior & Research	Qualitative	Social entrepreneurs (UK)	Human / SME-Specific
P36	Koporcic et al. (2025)	SME resilience in times of crisis: A systematic literature review	Review of Managerial Science	Umbrella review	SMEs	SME-Specific / Outcomes
P37	Kuckertz & Brändle (2022)	Creative reconstruction: A structured literature review of the early empirical research on the COVID-19 crisis and entrepreneurship	Management Review Quarterly	Structured literature review	Entrepreneurship	Theoretical / SME-Specific
P38	Larabi (2025)	Strategic renewal, dynamic capabilities, and sustainable performance: The moderating role of environmental dynamism	Business Strategy and the Environment	Quantitative (SEM)	SMEs (Saudi Arabia)	Process / Outcomes
P39	Lefebvre (2025)	Lean inventory management in SMEs during the COVID-19 crisis	International Journal of Production Economics	Quantitative	SMEs (France)	SME-Specific / Outcomes
P40	Li et al. (2016)	E-leadership adoption in SMEs: The role of strategic alignment	Journal of Information Technology	Qualitative	SMEs (UK / NL / China)	Human / Digital
P41	Lindbjerg & Vladasel (2025)	Hiring entrepreneurs for innovation: The role of human capital	Strategic Management Journal	Quantitative	Firms (Denmark)	Human
P42	Linnenluecke (2017)	Resilience in business and management research: A review of influential publications and a research agenda	International Journal of Management Reviews	Bibliometric review	General management	Theoretical
P43	Liu & Yang (2019)	Network resources, dynamic capabilities, and competitive advantage	Journal of Small Business Management	Quantitative (SEM)	SMEs (Taiwan)	Network
P44	Mahamat et al. (2025)	Psychological resilience of entrepreneurs and organizational resilience of SMEs in the face of crisis	International Entrepreneurship and Management Journal	Quantitative	SMEs (Central Africa)	Human
P45	Maiolini et al. (2025)	Digital transformation and crisis-driven innovation: The case of social enterprises	Journal of Small Business and Enterprise Development	Qualitative	Social enterprises (Italy)	Digital / SME-Specific
P46	Martin & Javalgi (2016)	Entrepreneurial orientation, marketing capabilities and performance: The moderating role of competitive intensity	Journal of Business Research	Quantitative	New ventures (Mexico)	Process / Outcomes
P47	Meier et al. (2025)	Digital competitiveness of incumbent SMEs: A systematic literature review	Journal of Business Research	Systematic literature review	Incumbent SMEs	Digital
P48	Merín-Rodrigáñez et al. (2024)	The impact of digital transformation on SME performance: The mediating role of innovation	Technovation	Quantitative (PLS-SEM)	SMEs (Spain)	Digital / Outcomes
P49	Morrish & Jones (2020)	Post-disaster business recovery: An entrepreneurial marketing perspective	Journal of Business Research	Qualitative	SMEs (New Zealand)	SME-Specific / Process
P50	Motley et al. (2025)	Feedback-driven pivoting in the entrepreneurial process	Strategic Entrepreneurship Journal	Quantitative	Academic entrepreneurs	Process

P51	Mueller-Saegebrecht & Walter (2025)	Strategic agility and business model innovation in the digital era	Strategic Change	Conceptual	General	Theoretical / Process
P52	Naman & Slevin (1993)	Entrepreneurship and the concept of fit: A model and empirical tests	Strategic Management Journal	Quantitative	Manufacturing (USA)	Theoretical / Process
P53	Noble (1999)	The eclectic roots of strategy implementation research	Journal of Business Research	Literature review	General strategy	Theoretical
P54	Ogrean (2025)	Dynamic capabilities in a digital world: A bibliometric analysis	Studies in Business and Economics	Bibliometric analysis	Digital strategy	Theoretical / Digital
P55	Ott et al. (2017)	Strategy formation in entrepreneurial settings: Past insights and future directions	Strategic Entrepreneurship Journal	Conceptual	Entrepreneurship	Process
P56	Portuguez Castro & Gómez Zermeño (2021)	Entrepreneurial resilience in times of crisis: A systematic literature review	Journal of Entrepreneurship in Emerging Economies	Systematic literature review	Emerging economies	SME-Specific / Human
P57	Priem et al. (2012)	Demand-side perspective on innovation and strategic management	Journal of Management	Conceptual review	Innovation	Theoretical
P58	Radovic & Petkovic (2023)	Digitalization and innovation in SMEs	Technological Forecasting & Social Change	Quantitative	SMEs (Europe)	Digital
P59	Ritala et al. (2021)	Digital strategy implementation: The role of individual capabilities	Technological Forecasting & Social Change	Quantitative	SMEs (Finland / UK)	Digital / Human
P60	Rodrigo-Alarcón et al. (2018)	Social capital and dynamic capabilities: The role of network structure	European Management Journal	Quantitative	SMEs (Spain)	Network / Process
P61	Ruiz et al. (2024)	Internationalization and the development of dynamic capabilities	International Entrepreneurship and Management Journal	Quantitative	International firms	Theoretical / Network
P62	Sambamurthy et al. (2003)	Shaping agility through digital options: Reconceptualizing the role of IT in contemporary firms	MIS Quarterly	Conceptual	IT strategy	Digital / Theoretical
P63	Sari & Ahmad (2022)	Strategies for sustaining SME competitiveness in the post-pandemic era	Global Business Review	Quantitative	SMEs	Outcomes
P64	Sinani & Zijl (2025)	Navigating geopolitical pressure: The case of high-tech SMEs	British Journal of Management	Quantitative	High-tech SMEs	Network / SME-Specific
P65	Solano Acosta et al. (2018)	Market orientation and international performance: The mediating role of innovation	International Business Review	Quantitative	SMEs (Mexico)	Network / Outcomes
P66	Štrukelj & Dankova (2025)	Ethical leadership and the adoption of AI in SMEs	Administrative Sciences	Literature review	SMEs / AI	Human / Digital
P67	Suder (2025)	The influence of the external environment on strategic agility	International Entrepreneurship and Management Journal	Quantitative	SMEs (Poland)	Theoretical
P68	Tan (2001)	Innovation and risk-taking in a transitional economy: A comparative study of Chinese managers	Journal of Business Venturing	Quantitative	Managers (China)	Process / Human
P69	Tawse & Tabesh (2025)	Strategy implementation: A review and an agenda for future research	European Management Journal	Systematic review	General strategy	Theoretical

P70	Troise et al. (2022)	How digital transformation enables SME agility in VUCA environments	Technological Forecasting & Social Change	Quantitative	SMEs (Italy)	Digital / Process
P71	Uimonen (2024)	Agile transformations and strategic risk management: A mixed methods study	PhD dissertation (Tampere University)	Mixed methods	Financial services	Process / Human
P72	Wales et al. (2011)	The organizational pervasiveness of entrepreneurial orientation	Entrepreneurship Theory and Practice	Theoretical review	Entrepreneurial orientation	Theoretical
P73	Warsono et al. (2025)	The role of digital platforms in MSME empowerment: A study in Indonesia	Business Process Management Journal	Quantitative	MSMEs (Indonesia)	Digital / Human
P74	Wiklund et al. (2009)	An integrative model for small business growth	Small Business Economics	Quantitative	SMEs (Sweden)	SME-Specific
P75	Wu (2007)	Entrepreneurial resources, dynamic capabilities and start-up performance	Journal of Business Research	Quantitative	High-tech SMEs (Taiwan)	SME-Specific / Outcomes
P76	Zahra et al. (2006)	Entrepreneurship and dynamic capabilities: A review, model and research agenda	Journal of Management Studies	Conceptual review	Entrepreneurship	Theoretical
P77	Zighan & Dwaikat (2023)	Organisational agility in SMEs: The role of leadership and culture	International Journal of Entrepreneurial Behavior & Research	Qualitative	SMEs (Jordan)	SME-Specific / Process
P78	Zollo & Winter (2002)	Deliberate learning and dynamic capabilities	Organization Science	Conceptual	General	Theoretical

Appendix 2. The Concept-Centric Matrix

The Concept-Centric Matrix						
Citation	Context / Volatility	The "Planning" Constraint (Barrier)	The Pivot Type	KEY ENABLER (What allows the pivot?)	Mechanism (How it works)	Outcome
I. THEORETICAL FOUNDATION: The Shift from Static to Dynamic						
Beer & Eisenstat (2000)	Org. change / Strategy Implementation	"Silent Killers" : Top-down style, unclear strategy, poor coordination	Strategic Alignment	Open Dialogue	Engaging employees to expose barriers turns "silent killers" into capabilities.	Implementation Effectiveness
Belahcene & Chaib (2025)	Business environment changes	Agile stagnation	Strategic Agility	Dynamic Capabilities	Sensing, decision-making, and practice agility allow swift responses.	Survival; Evolution
Companys & McMullen (2007)	High velocity/ambiguous markets	Structural inertia; path dependence	Opportunity Exploitation	Bricolage & Improvisation	Recombining existing resources in novel ways to overcome structural rigidities.	Competitive Advantage
Covin & Lumpkin (2011)	General competitive environments	Bureaucracy; lack of innovation	Entrepreneurial Behavior	Entrepreneurial Orientation (EO)	A sustained firm-level attribute comprising risk-taking, innovativeness, and proactiveness.	Firm Performance

Demil et al. (2015)	Disruptive innovation	Conflicting assets; inertia	Business Model Innovation (BMI)	Business Model Consistency	Aligning the various components of the business model to adapt to environmental changes.	Competitive Advantage
Doz & Kosonen (2010)	Strategic discontinuity	Cognitive Inertia: Trapped in existing business models	Business Model Renewal	Strategic Sensitivity & Leadership Unity	Collective commitment allows the top team to make bold decisions without politics.	Avoiding Strategic Paralysis
Eisenhardt & Martin (2000)	High-velocity markets	Resource Rigidity: Inability to shed resources	Reconfiguration	Dynamic Capabilities	Simple, experiential routines (e.g., cross-functional teams) to integrate and release resources.	Competitive Advantage
Foss et al. (2008)	Uncertainty	Heterogeneous mental models	Opportunity Discovery	Subjectivism / Judgment	Entrepreneurial judgment allows firms to value resources differently than the market.	Competitive Advantage
Linnenluecke (2017)	External threats	Rigidity; collapse of sensemaking	Resilience Activation	Liminal Suspension	Psychological and relational processes that allow organizations to "bounce forward."	Adaptation / Recovery
Mueller-Saegebrecht & Walter (2025)	Dynamic markets	Conflicting priorities; cognitive biases	Business Model Innovation	Strategic Agility (SA)	SA (Sensitivity, Unity, Fluidity) enables the iterative process of BMI.	Successful BMI
Naman & Slevin (1993)	Environmental turbulence	Misalignment of structure/strategy	Strategic Fit	Organic Structure	Adopting an entrepreneurial style and organic structure to match turbulence.	Financial Performance
Noble (1999)	Strategy Implementation	Structural/Interpersonal barriers	Strategy Execution	Interpersonal Process	Communication and consensus-building to overcome structural rigidity.	Implementation Success

Ogrean (2025)	Digital age; VUCA	Traditional static capabilities	Digital Transformation	Digital Dynamic Capabilities	Rethinking dynamic capabilities to include digital sensing, seizing, and transforming.	Competitive Advantage
Portuguez Castro... (2021)	Post-COVID-19 crisis	Economic shutdown	Business Resilience	Resilience Capabilities	Adaptability and flexibility allow entrepreneurs to recover from the crisis.	Recovery
Priem et al. (2012)	New technology threats	Demand uncertainty	Value Creation	Demand-Side Perspective	Focusing on consumer heterogeneity and downstream value creation to pivot.	Innovation Adoption
Ruiz et al. (2024)	Environmental turbulence	Organizational rigidities	Strategic Agility	Strategic Sensitivity & Fluidity	Turbulence enhances the effect of dynamic capabilities on strategic agility.	Competitiveness
Tawse & Tabesh (2020)	Dynamic environments	Implementation Breakdown: Poor communication	Strategy Implementation	Dynamic Managerial Capabilities	Reconfiguring competence, commitment, and coordination to bridge the gap.	Implementation Effectiveness
Wales et al. (2011)	Environmental dynamism	Core rigidities; inertia	Entrepreneurial Orientation	EO Pervasiveness	Spreading EO throughout the organization (not just top management) to enable adaptation.	Firm Performance
Wiklund et al. (2009)	Dynamic environments	Limited access to capital	Small Business Growth	Entrepreneurial Orientation	EO drives growth by allowing firms to discover and exploit opportunities.	Growth
Zahra et al. (2006)	Volatile/complex environments	Inertia; fear of disruption	Competitive Advantage	Dynamic Capabilities	The ability to reconfigure resources and routines to match market changes.	Competitive Advantage
Zollo & Winter (2002)	Task frequency/heterogeneity	Implicit knowledge hard to transfer	Capability Evolution	Knowledge Codification	Codifying experience into routines allows firms to replicate success.	Dynamic Capability Building

de Diego & Almodóvar (2021)	Digital age; VUCA	Static strategic management	Strategic Agility	Science Mapping	Identifying key themes in strategic agility research (e.g., relationship with digital transformation).	Future Research Directions
II. DIGITAL ENABLERS: Technology as a Pivot Tool						
Akpe et al. (2022)	Economic disruptions	Static Reporting: Manual updates	Operational Resilience	Adaptive Business Intelligence	Using real-time analytics to replace static reporting for rapid decision-making.	Business Continuity
Belitski et al. (2022)	COVID-19 Pandemic	Lockdown restrictions	Digital Pivot	Digital Safety Net	Digital tools allow shifting resources and modifying business plans to continue operations.	Survival
Bin Hameed & Creazza (2025)	Traceability/sustainability	Financial constraints; lack of staff	Technology Adoption	Blockchain Technology	Adopting blockchain to fill operational gaps in traceability and sustainability.	Operational Gains
Cimino et al. (2025)	Disruptive tech change (AI)	Resource constraints; skill shortages	AI Integration	Dynamic Capabilities	Sensing and seizing opportunities to integrate AI into organizational processes.	Ecosystem Success
Guo et al. (2020)	COVID-19 Outbreak	Physical Limits: Production stagnation	Business Model Pivot	Digital Transformation	Rapidly moving to online business models and telecommuting.	Crisis Response Performance
Horváth & Szabó (2019)	Industry 4.0	Financial resource shortage	Industry 4.0 Adoption	Management Functions	Adjusting management functions (strategy, finance) to support digital transformation.	Competitiveness

Maiolini et al. (2025)	Social challenges; COVID-19	Digital gaps; hierarchical structures	Digital Transformation	Platform Management	Adopting digital platforms to manage volunteers and deliver social value remotely.	Social Impact
Meier et al. (2025)	Digital disruptions	Cognitive inertia	Digital Competitiveness	SME-Specific Agility	Leveraging simple structures and quick decision-making to adopt digital tools faster than MNEs.	Competitiveness
Merín-Rodrigález et al. (2024)	The emergence of digital technologies	Employee resistance; inertia	BMI	Digital Transformation (DT)	DT acts as an antecedent that triggers changes in value creation and capture.	Firm Performance
Radacic & Petkovic (2023)	Industry 4.0	Limited financial resources	Technological Innovation	Digitalization	Digital technologies enable product and process innovation in SMEs.	Innovation Performance
Sambamurthy et al. (2003)	Digital economy turbulence	Adaptation lag: Slow processes	Competitive Actions	Digital Options	IT creates "options" (digitized knowledge/processes) that can be exercised quickly.	Agility & Firm Performance
Strukelj & Dankova (2025)	Technological development	Ethical concerns	Decision Making	Artificial Intelligence (AI)	AI supports decision-making in SMEs, provided ethical leadership is present.	Competitive Advantage
Troise et al. (2022)	VUCA environment	Vulnerability; lack of finance	Organizational Agility	Digital Technology Capability	Digital tools (social media, big data) enable sensing and responding to VUCA.	Financial Performance
Warsono et al. (2025)	Rapidly evolving markets	Core capability gaps; low literacy	Business Resilience	Business Acumen (5E Model)	A staged model (Endowment to Enhancement) of building acumen for digital adoption.	Sustainability

III. PROCESS ENABLERS: Methodologies for Agility						
Autio (2017)	Internationalization	Liability of foreignness	BM Experimentation	Lean Entrepreneurship	Using heuristics and simple rules to adjust routines "on the fly."	Competitive Advantage
El Idrissi et al. (2023)	COVID-19 pandemic	Organizational inertia	Organizational Agility	Dynamic Capabilities	DC enables customer, operational, and partnering agility, driving crisis preparedness.	Crisis Preparedness
Fernández-Mesa & Alegre (2015)	Economic recession	Managerial expertise gaps	Export Intensity	Organizational Learning Capability	OLC mediates the relationship between EO and export performance by facilitating knowledge acquisition.	Export Performance
Gayed & Ebrashi (2023)	COVID-19	Resource scarcity	Organizational Resilience	Organizational Ambidexterity	Balancing exploration (innovation) and exploitation (efficiency) to build resilience.	Firm Resilience
Ghezzi & Cavallo (2020)	High uncertainty	Resource Scarcity: Cost of failure	Agile BMI	Lean Startup Approaches	Hypothesis testing and iterative cycles (Build-Measure-Learn) to validate changes cheaply.	Business Model Innovation
Koray et al. (2025)	Volatile business environment	Limited financial/human resources	SME Sustainability	Innovation Strategy	Innovation strategy mediates the effect of technology deployment on sustainability.	SME Sustainability
Larabi (2025)	Vision 2030; digital disruption	Short-term focus	Strategic Renewal	Innovation Capability (IC)	IC and Strategic Orientation drive Strategic Renewal, which leads to sustainable performance.	Sustainable Performance

Martin & Javalgi (2016)	Turbulent environment	Liability of newness	Performance	Marketing Capabilities	EO enables marketing capabilities, which are crucial for performance in competitive markets.	INV Performance
Morrish & Jones (2020)	Post-disaster (Earthquake)	Loss of premises; regulations	Business Recovery	Entrepreneurial Marketing	Opportunity-seeking and resource-organizing (Effectuation) to recover after a disaster.	Survival; Recovery
Motley et al. (2025)	Negative stakeholder feedback	Psychological Attachment: Stuck on an idea	Core Pivot	Negative Feedback Integration	Using negative feedback to change the <i>core</i> of the idea rather than just the periphery.	Commercialization Outcomes
Ott et al. (2017)	Entrepreneurial settings	Ambiguity; unpredictability	Strategy Formation	Decision Weaving	Combining "doing" (learning by experience) with "thinking" (holistic understanding).	Competitive Advantage
Sinani & Zilja (2025)	Geopolitical risk	Liability of foreignness	Investment Decisions	Innovation Capability	Using innovation (patents) to manage legitimacy and geopolitical risk.	International Investment
Wu (2007)	Rapid environmental change	Fleeting competitive advantages	Start-up Performance	Dynamic Capabilities	Resource integration and reconfiguration capabilities drive start-up success.	Start-up Performance
Zighan & Dwaikat (2023)	Unanticipated changes	Financial frictions	Organizational Agility	Process Optimization	Redefining and optimizing processes to achieve agility despite resource constraints.	Survival
IV. HUMAN ENABLERS: Leadership, Culture & Resilience						

Ali & Varoğlu (2022)	Dynamic external environment	Mechanistic structures	Strategic Fit	Organic Structure	Adopting decentralized, informal structures allows firms to match high environmental dynamism.	Strategic Fit / Performance
Ayuso & Navarrete-Báez (2018)	Sustainable development pressure	Resource limitations	Adoption of SD Practices	Entrepreneurial Orientation (EO)	Proactiveness and risk-taking allow SMEs to adopt sustainability practices despite resource limits.	Sustainable Development
Duan et al. (2025)	COVID-19; natural disasters	High stress	Individual Coping	Coping Flexibility	The psychological ability to discontinue ineffective strategies and produce new ones.	Psychological Resilience
Ferreira et al. (2020)	Turbulent environments	Limited resources	Competitive Advantage	Creativity & Innovation	Creativity acts as a micro-foundation for dynamic capabilities, enabling innovation.	Firm Performance
Gautam et al. (2025)	COVID-19 lockdown	Static resource management	Business Model Adaptation	Entrepreneurial Intentions	Converting entrepreneurial intentions into resilient actions (e.g., diversification).	Resilience; Recovery
Genc et al. (2019)	Global competition	Lack of resources	Innovation Performance	Market & Entrepreneurial Orientation	EO and Market Orientation facilitate internationalization, which in turn drives innovation.	Innovation
Griffith et al. (2006)	Dynamic market/tech env	Inability to convert knowledge	Market Responsiveness	Entrepreneurial Proclivity	Enhances the conversion of supplier/competitor knowledge into responsiveness.	Firm Performance
Hmieleski et al. (2015)	Creation contexts (Uncertainty)	Lack of reliable information	Opportunity Exploitation	Psychological Capital (PsyCap)	Optimism, resilience, and hope allow CEOs to navigate uncertainty where data is missing.	New Venture Performance

Jafari-Sadeghi et al. (2022)	Technological evolution	Smallness; newness	Agility	Micro-foundations	Individual-level traits (speed, flexibility) of entrepreneurs drive organizational agility.	International Performance
Li et al. (2016)	Digital Age	Strategic Misalignment: IT vs Business	Strategic Alignment	e-Leadership	Leaders who bridge the gap between IT and business strategy enable digital adoption.	Competitive Advantage
Lindbjerg & Vladasel (2025)	Innovation uncertainty	Innovation Inertia: Specialized knowledge	Innovation Pivot	Hiring Founders	Hiring former entrepreneurs injects "generalist" human capital that improves decision-making.	Sales from Innovation
Mahamat et al. (2025)	Crises (Security, political)	Centralized structure	Organizational Resilience	Entrepreneur Psychology	The entrepreneur's psychological state (resilience) directly influences organizational resilience.	Prosperity / Survival
Ritala et al. (2021)	Digitalization; COVID-19	Organizational inflexibility	Digital Strategy Imp	Individual Entrepreneurial Orientation	Employees' proactiveness and risk-taking enable the execution of the digital strategy.	Digital Strategy Performance
Sari & Ahmad (2022)	Post-pandemic	Lack of technology/skills	Strategic Agility	Intellectual Capital (IC)	Human and social capital, combined with tech capabilities, drive strategic agility.	Competitiveness
Suder (2025)	Pandemic crisis	Resource limitations	Firm Performance	Entrepreneurial Orientation	Adapting EO (innovativeness, proactiveness) to match the external environment.	Firm Growth
Tan (2001)	Economic transition	Institutional disadvantages	Entrepreneurial Strategy	Risk-taking & Speed	Private firms use speed and risk-taking to outperform state-owned enterprises.	First-mover Advantage

Uimonen (2024)	Increasing uncertainty	Rigid risk management	Business Agility	Agile Leadership	Transforming leadership style and communication to support agile transformation.	Competitive Advantage
V. SME-SPECIFIC ENABLERS: Surviving Scarcity						
Adomako et al. (2022)	Emerging economy; dynamism	Resource constraints	Strategic Agility	Technological Capability	Tech capability enables sense-making and operational flexibility to respond to changes.	International Performance
Kah et al. (2025)	Cost-of-Living Crisis	Institutional Pressure: Funding cuts	Hybrid Response	Proactive Innovation	Creating new revenue streams to cross-subsidize social missions during a crisis.	Organizational Resilience
Koporcic et al. (2025)	Crises (Pandemic, wars)	Firm size limitations	Resilient Strategy	Interactive Approach	Combining internal capabilities with external stakeholder relationships to build resilience.	Survival; Continuity
Kuckertz & Brändle (2022)	COVID-19 Shock	Resource Constraints: Revenue loss	Creative Reconstruction	Bricolage	"Making do" with available resources to reconstruct the business model.	Survival
Lefebvre (2025)	Supply Chain Disruption	Financial Dependence: Weak power	Operational Pivot	Lean Inventory Management	Reducing inventory waste to free up cash flow and increase flexibility.	Financial Performance (ROA)
VI. NETWORK ENABLERS: Leveraging the Ecosystem						

Afonso & Franco (2024)	Environmental uncertainty	Tangible Resource Scarcity	Alliance Formation	Intangible Resources	Leveraging reputation and culture (intangible assets) to form alliances that compensate for resource gaps.	Survival
Arsawan et al. (2022)	Market turbulence	Weak internal drivers	Organizational Agility	Collaborative Knowledge Creation	Social capital facilitates knowledge sharing, which drives innovation and agility.	Sustainable Competitive Advantage
Dabić et al. (2020)	Globalization; rapid change	Liability of foreignness	Internationalization	Network Strategy	Using strategic alliances and networks to overcome resource constraints during expansion.	International Success
Liu & Yang (2019)	Volatile Environment	Resource Shortage: Small home market	Competitive Advantage	Network Resources	Using external networks to acquire knowledge that the SME cannot generate internally.	Competitive Advantage
Rodrigo-Alarcón et al. (2018)	Changing environments	Inertia; blindness from social capital	Entrepreneurial Orientation	Dynamic Capabilities	DCs mediate the relationship between social capital and entrepreneurial orientation.	Competitive Advantage
Solano Acosta et al. (2018)	Globalization	Limitation of resources	International Performance	Network Capability	Networking enables market orientation and EO to drive international performance.	International Performance

Appendix 3. Declaration on the Use of Artificial Intelligence in the Study

The University of Vaasa encourages the responsible integration of artificial intelligence into academic work. In line with current policy, this thesis includes a transparent declaration regarding the specific AI tools and language models employed, detailing both their selection and function (University of Vaasa, 2023).

Various artificial intelligence tools were utilized at different stages of this research process to support critical thinking and streamline workflow:

- Gemini Pro (Gemini 3) and ChatGPT (GPT-5): These language models were used interchangeably as critical sparring partners. They assisted in brainstorming, testing the logical coherence of arguments between chapters, and conceptualizing the visual figures presented in the study.
- Consensus and Perplexity AI: These research assistants were utilized to locate supplementary literature for the contextual chapters (introduction, theoretical background, methodology, and discussion). It is important to note that they were not used for the Systematic Literature Review (SLR) findings. The data and articles for the SLR findings were gathered exclusively from the structured searches in Scopus and Web of Science to ensure methodological integrity.
- Quillbot Premium: To ensure clarity and stylistic variety, this tool was employed for linguistic polishing. They helped refine sentence variation and correct grammatical inconsistencies without altering the underlying academic tone or register.

This study adheres to the university's regulations regarding artificial intelligence tools. The final interpretation of data and all intellectual conclusions remain the sole responsibility of the author.