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Toward a multidimensional concept of organizational agility: a systematic literature review

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Abstract

Organizational agility (OA), the ability of an organization to adapt to rapidly changing environments and reconfigure its structure and operations, has become a critical capability for achieving and sustaining competitive advantage. However, existing frameworks for OA often adopt narrow, industry-specific perspectives, neglecting the broader interplay of contextual factors, internal and external antecedents, and multidimensional capabilities. This study addresses this gap by conducting a systematic literature review (SLR) of 110 peer-reviewed articles from three leading academic databases. Guided by an inductive approach and the grounded theory methodology, this research identifies and categorizes the key antecedents of OA into four interconnected dimensions: contextual factors, fundamental attributes, vital enablers, and dynamic capabilities. The findings reconceptualize OA as a bundle of interrelated dynamic capabilities—encompassing macro-agility (e.g., strategic and partnering agility) and micro-agility (e.g., operational, innovation, and workforce agility)—rather than a singular construct. This multidimensional concept bridges theoretical gaps, integrating insights from contingency, agency and resource-based theories to explain the dynamic relationship between internal and external antecedents. The study offers a foundation for future research and provides actionable guidance for practitioners seeking to design agile organizations capable of thriving in dynamic capabilities.

Keywords Organizational agility · Dynamic capabilities · Systematic literature review

JEL Classification L20 · M10

1 Introduction

In a constantly and rapidly changing world, organizations must adapt quickly to external factors and market changes to sustain competitive advantages (Harraf et al. 2015). This capability, often described as organizational agility (OA) (Felipe et al. 2017), is increasingly recognized as one of the most critical capabilities for long-term success. However, despite its strategic importance, the skepticism in the corporate world is still present (Žitkienė and Deksnys 2018). This skepticism is mainly rooted in the disconnect between the “how” and imprecise concept of OA (Girod et al. 2023). For practitioners, different institutions, such as Scrum.org or Scaled Agile Inc., offer various frameworks and tools for implementing agile methods and organizational structures (Magistretti and Trabucchi 2024). As Girod et al. point out, these frameworks compete for attention and only vary slightly in their framings (2023). The literature analysis reveals an incohesive understanding of the concept of OA. Existing frameworks vary widely, relying on fragmented perspectives that focus on specific industries or narrow aspects of OA, such as agile manufacturing (Sharifi and Zhang 1999) or software development (Cunningham 2001). These approaches fail to account for the broader interplay of internal and external antecedents, resulting in a lack of holistic understanding of OA as a multidimensional construct.

The current state of OA research highlights three key issues. First, many frameworks classify OA as a singular dynamic capability (Teece et al. 2016; Clauss et al. 2021), neglecting the nuanced relationships between contextual factors, fundamental attributes, vital enablers and capabilities and furthermore, as pointed out by Leeman and Kanbach (2022), a better understanding of the concept of dynamic capabilities is needed. Second, these frameworks are often industry-specific and lack generalizability across diverse organizational contexts. Over time, additional organizational context, such as knowledge management (Dove 1999) and IT capabilities (Sambamurthy et al. 2003), were integrated into the concept of OA. Additionally, definitions of functional disciplines, such as supply chain agility (Fayezi et al. 2016), workforce agility (Qin and Nembhard 2010), and strategic agility (Doz and Kosonen 2008), introduced further intricacy and ambiguity to the concept of OA. Third, while theories such as the resource-based view, agency theory, and contingency theory have been used sporadically to explain specific aspects of OA, an integrative approach that combines these theoretical lenses into a comprehensive multidimensional concept is still missing. Especially, the understanding of dynamic capabilities and the definition of such is crucial to understand the multidimensional concept of OA. This lack of clarity creates challenges for both scholars seeking theoretical consistency and practitioners aiming to implement effective agility strategies.

If these gaps remain unaddressed, organizations may struggle to develop a coherent strategy to enhance their agility, thereby risking their ability to respond to dynamic environmental changes. For scholars, the absence of a multidimensional concept impedes theoretical progress in understanding OA’s full potential. For practitioners, fragmented frameworks and competing tools, such as those

from Scrum.org or Scaled Agile Inc. (Magistretti and Trabucchi 2024), provide limited guidance for implementing agility at scale. Without a comprehensive and actionable conceptualization, the disconnect between academic insights and practical applications will persist.

Given the diverse and fragmented nature of OA research, a systematic literature review (SLR) offers a robust and transparent method to synthesize diverse perspectives and identify patterns across disciplines. Building on the method of Tranfield et al. (2003), this study employs a structured approach to review, evaluate, and synthesize findings from 110 peer-reviewed articles retrieved from three scientific databases. Previous SLRs have made valuable contributions by addressing specific aspects of OA, such as IT agility (Ridwandono and Subriadi 2019) or agile manufacturing (Potdar et al. 2017). Building on these foundations, this study takes a broader and more comprehensive approach. By applying rigorous quality thresholds (AJG > 2 or SCJ IF > 1.5) and utilizing an inductive grounded theory approach (Gioia et al. 2012), this study systematically identifies and synthesizes antecedents from diverse disciplines. This approach facilitates an updated understanding of the literature and supports the development of a multidimensional concept that integrates both internal and external antecedents of OA. The concept proposed in this study is grounded in the contingency theory, which explains how external factors influence organizational structure and strategy (Darvishmotevali et al. 2020), agency theory, which contextualizes stakeholder alignment and governance (Fayezi et al. 2020), and the resource-based view, which highlights the role of internal resources in sustaining competitive advantages (Baškarada and Koronios 2018). Providing a richer understanding of OA.

This paper aims to fill the identified gaps by conceptualizing OA as a multidimensional construct comprising contextual factors, fundamental attributes, vital enablers, and dynamic capabilities. Specifically, the study seeks to address the following research questions: “*What are the key internal and external antecedents of organizational agility?*”(RQ1), “*How can these antecedents be integrated into a comprehensive multidimensional concept?*” (RQ2), and “*What theoretical foundations explain the relationship among these dimensions?*” (RQ3).

By answering these questions, this study contributes to advancing both theoretical and practical understanding of OA, offering actionable insights for researchers and practitioners alike.

In the era of rapid artificial intelligence (AI) advancements, Block and Kuckertz (2024) emphasize the importance of leveraging the “human factor” in SRLs. By acknowledging this perspective, this study integrates a nuanced and contextualized understanding of OA, emphasizing the role of human decision-making, judgment, and creativity in addressing complex organizational challenges. The outlined approach reflects this by crafting individualized research questions, engaging in problematization, and theorizing based on both empirical findings and theoretical gaps. For example, while AI can analyze large datasets efficiently, the interpretative process of understanding the interplay between macro-agility (e.g., strategic agility) and micro-agility (e.g., workforce agility) requires human intuition to contextualize findings within diverse organizational settings. Similarly, the identification of internal antecedents such as knowledge management and agile leadership is rooted in

the human-driving synthesis of qualitative insights, demonstrating the added value of the human factor in constructing actionable concepts. By combining rigorous methodology with critical human oversight, this study not only addresses gaps in the literature but also ensures the development of a concept that is both theoretically robust and practically relevant. This approach aligns with the broader aim of advancing OA as a multidimensional construct and bridging the disconnect between academic research and practical applications.

2 Conceptual background

2.1 Organizational agility

Brown and Agnew were among the first to discuss the capabilities of organizations to react fast to changing circumstances (1982). They defined OA as the “capacity to react quickly to rapidly changing circumstances” (Brown and Agnew 1982, p. 29). In 1990 the US congress decided to instruct the Department of Defense to develop together with academics a framework to improve the competitive manufacturing of the US. The results were presented as the “21st Century Manufacturing Enterprise Strategy” by the Iacocca Institute at Lehigh University in 1991. *Continues change, rapid responses, quality improvements and social responsibility* were the identified issues (Jin-Hai et al. 2003).

Sharifi and Zhang (1999) and Gunasekaran (1999) provided a taxonomy on different antecedents of agility. Their focus remained on agile manufacturing. Yusuf et al. introduced the differentiation of various layers of OA. They described three different layers: elemental (Resources), micro-agility (Enterprise) and macro-agility (Inter-Enterprise) (1999). With the introduction of the agile manifesto 2001, a software development perspective was added to the landscape. Since then, the discussions and investigations were extended to different fields such as IT capabilities (Overby 2006), strategic agility (Doz and Kosonen 2008), workforce agility (Qin and Nembhard 2010), supply chain agility (Bi et al. 2013) and innovation capabilities (Chakravarty et al. 2013).

Over time, research on OA has increasingly addressed organizational culture (Carvalho et al. 2019) and agile leadership (Tandon et al. 2024). Recent studies have categorized OA as a dynamic capability, emphasizing its adaptability and integration within broader organizational strategies (Lee et al. 2015). Furthermore, various theoretical perspectives have been used to contextualize and explain the internal and external antecedents of OA. The contingency-based view rationalizes these antecedents by emphasizing the influence of external environmental factors (Darvishmotevali et al. 2020). Agency theory focuses on the alignment of stakeholders relationships and mitigating uncertainties (Fayezi et al. 2020), while resource-based view highlights the critical role of internal resources, such as knowledge and IT capabilities, in driving agility (Baškarada and Koronios 2018; Crick and Chew 2020).

The growing interest in OA is evidenced by the increasing number of published papers in recent years, reflecting a shift from predominantly conceptual studies to

more quantitative approaches. This trend underscores the importance of providing empirical evidence for the internal and external antecedents of OA, contributing to a deeper and more actionable understanding of its multidimensional nature.

2.2 Dynamic capabilities

In the strategic management literature, a dynamic capability is defined as “the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments” (Teece et al. 1997, p. 516). In his further research Teece (2007) identified three main types of dynamic capabilities: sensing, seizing and transforming. The capability of sensing the environment supports activities used to identify opportunities and threats and derive a managerial strategy for the future (Hutter et al. 2023). After the environment has been sensed and concrete actions for commercializing the strategy the seizing of those opportunities must take place (Teece 2007). On the one hand the current market opportunities must be exploited while at the same time new threats and opportunities must be explored. This tension is described as “organizational ambidexterity” (Bodwell and Chermack 2010). And lastly the capability of transforming the identified opportunities describes the ability to continued renewal of assets, structures and deployments (Teece 2007). The understanding of dynamic capabilities is crucial to grasp the nature of OA as the dimensions of OA include various dynamic capabilities. Two different complementary perspectives on the research on dynamic capabilities can be differentiated in the literature (Leso et al. 2024). One is focused on implementing routines and processes, whilst highlighting the ability of an organization to learn and adapt (Teece et al. 1997). Whereas the other is more focused on the development of processes that reallocates and reconfigures resources, whilst highlighting leadership and culture aspects (Eisenhardt and Martin 2000).

For the inductive development of the multidimensional concept of OA, this study adopts an integrative perspective that acknowledges the idiosyncratic nature of dynamic capabilities and their varied definitions across the literature (Leeman and Kanbach 2022). This approach aligns with the RQ3, which seeks to identify the theoretical foundations that explains the relationships among the dimensions of OA. By integrating insights from these diverse perspectives, the concept provides a more comprehensive understanding of how dynamic capabilities underpin the multi-dimensional nature of OA, bridging the gap between theoretical discourse and practical application.

2.3 Existing literature reviews

During the research process, several prior literature reviews were identified (see Table 1). One of the earliest reviews was conducted by Gunasekaran (1999), who investigated 60 papers on agile manufacturing and identified key enablers and attributes within this domain. Yusuf et al. (1999) also focused on agile manufacturing, analyzing 28 papers and deriving a concept that distinguished between different layers of agility, including elemental, micro-agility, and macro-agility. As the body

Table 1 A selection of past literature reviews on organizational agility. *Source:* Created by authors

Authors (Date)	Sys-tematic review	Quality filters	Sample size	Databases	Findings
Gunasekaran (1999)	No	No	60	n/a	Seminal work on agility attributes; manufacturing focus
Yusuf et al. (1999)	No	No	28	n/a	Introduction of different layers of agility; manufacturing focus
Sanchez and Nagi (2001)	No	No	73	n/a	Reviewed papers and proposed new classification within agile manufacturing
Trinh-Phuong et al. (2012)	Yes	No	37	n/a	Systematic review with focus on enterprise systems and IT
Potdar et al. (2017)	Yes	No	300	Emerald, Elsevier, Taylor, and Francis	Systematic review with focus agile manufacturing and identifying gaps in the research
Ridwando and Subriadi (2019)	Yes	No	37	IEEE, ScienceDirect, Springer, Emerald and Google Scholar	Systematic review with focus on IT
Walter (2020)	Yes	Yes	75	Academic Search Complete, Business Source Complete, and EconLit	Systematic review and conceptualization of four agility categories
Our research	Yes	Yes	110	EBSCO Discovery Service, ScienceDirect and Web of Science Core Collection	Systematic and transparent approach by Tranfield et al. (2003), Quality threshold of AIG > 2 or SCJ IF > 1.5, and developing a multidimensional concept

of research on agile manufacturing expanded, Sanchez and Nagi (2001) analyzed 73 papers, offering a classification of agile manufacturing research. Later, Potdar et al. (2017) reviewed 300 papers to identify gaps, noting that while much attention had been given to performance management and process analysis, less research addressed the practical implementation of agile manufacturing.

Although early work on OA emerged from agile manufacturing, subsequent decades have seen growing interest in OA across diverse fields. For example, Trinh-Phoung et al. (2012) reviewed 37 papers to explore the interlink between enterprise systems and OA, ultimately deriving a concept for future empirical studies. Ridwandono and Subriadi (2019) conducted a review examining the relationship between IT and OA, categorizing existing studies and identifying commonly used terms and themes. Walter (2020) provided a broader review of agility research, analyzing 75 papers published between 1994 and 2018, focusing on different agility categories across various domains.

As OA research has expanded beyond agile manufacturing and IT, the need for a more comprehensive understanding of its dimensions has grown. This study addresses this need through a systematic literature review, analyzing more recent qualitative and quantitative studies to develop a multidimensional concept for OA. The proposed concept is not industry-specific, and integrates internal and external antecedents, contextual factors, and dynamic capabilities. By addressing RQ2, the study seeks to synthesize these diverse elements into a cohesive concept, advancing the conceptual understanding of OA. Additionally, the concept incorporates insights from contingency theory, agency theory, and the resource-based view, providing a theoretical foundation of interpreting the relationships among these dimensions, as outlined in RQ3.

This approach contributes to bridging gaps identified in prior literature reviews by extending the focus beyond specific domains, such as manufacturing and IT, and incorporating a multidimensional perspective that aligns with the evolving needs of both scholars and practitioners. By doing so, the study offers actionable insights for understanding and implementing OA in diverse organizational contexts.

3 Methodology

3.1 Research approach

To address the gaps in the current understanding of OA, this study employs a SLR following the methodology outlined by Tranfield et al. (2003). This SLR approach allows for a systematic and transparent review of the existing literature, enabling the identification of recurring themes, patterns, and gaps. By additionally employing an inductive grounded theory method (Gioia et al. 2012), this study extends beyond summarizing the literature to develop a new multidimensional concept of OA. The inductive method was selected to allow for the emergence of themes and dimensions directly from the data, ensuring that the concept captures the complexity and interrelated nature of OA antecedents. This approach aligns with the study's aim to

develop a comprehensive, theory-grounded concept that integrates both internal and external factors.

The following research questions guided the design and execution of this study: The RQ1 “*What are the key internal and external antecedents of organizational agility?*” necessitated a broad and inclusive search strategy to identify studies discussing both internal (e.g. fundamental attributes, such as flexibility, or vital enablers, such as agile leadership) and external (e.g., changing customer behaviour, or rapid technological enhancements) antecedents. Content analysis enabled the systematic categorization of these factors. The RQ2 “*How can these antecedents be integrated into a comprehensive multidimensional concept?*” informed the data analysis and synthesis stages, where first-order concepts and second-order themes were iteratively clustered into overarching dimensions (e.g., contextual factors, fundamental attributes). And lastly, the RQ3 “*What theoretical foundations explain the relationships among these dimensions?*” required the evaluation of theoretical underpinnings in the literature, including contingency theory, agency theory, and the resource-based view.

To ensure the rigor and transparency of the research process, the study adhered to established SRL guidelines (Fisch and Block 2018; Kraus et al. 2022). The articles were retrieved from EBSCO Discovery Service, ScienceDirect and Web of Science Core Collection to maximize the coverage across management and organizational studies (Kraus et al. 2020). Moreover, as recommended by Dabić et al. (2021) two or more databases were selected to avoid biased outcomes. Keyword such as “organizational agility” for the title section and “concept” for the abstract section were used to construct search strings. The search strategy aligned with RQ1, ensuring a focus on antecedents and foundational elements of OA. During the research process further keywords were found. Therefore, “business agility” for the title section and “framework”, “conceptual framework”, and “model” for the abstract section were added into the search strings. The final search string was defined as “TI (organizational agility OR organisational agility OR business agility) AND AB (concept OR framework OR conceptual framework OR framework OR model)”. To increase the quality of the results the document type was defined as “academic journals” which must be peer reviewed. It was also decided to use “English” as preferred language to get a broader result base, but also most academic papers are written in English. To set a quality threshold for the SLR, the authors decided additionally to utilize the extended table of Kraus et al. (2020), hence applied the AJG ranking of > “2” or SCJ impact factor of > 1.5. Through the outlined methodology, the authors endeavor not solely to attain scientific rigor but also to formulate a concept applicable to practitioners and managers, thereby harmonizing the dual facets of rigor and relevance (Tranfield et al. 2003; Kraus et al. 2024; Öztürk et al. 2024).

3.2 Sample selection

To define the scope of the SLR, an a priori review of the current literature on OA was undertaken to gain a better understanding of relevant keywords, search terms, and suitable databases. Existing literature review on the topic of OA were also

consulted (see Table 1). In the subsequent step, a systematic literature review was conducted using the databases EBSCO Discovery Service, ScienceDirect and Web of Science Core Collection. The search, conducted between January and March 2024, along with a completeness check performed in January 2025, initially identified 1,433 papers. Following the removal of duplicates, 1,196 unique papers remained.

Quality thresholds were applied, limiting the selection to journals ranked with either AJG > “2” or SCJ impact factor of > “1.5”, which reduced the sample to 808 papers. Titles and abstracts were carefully screened against the research objective, leading to the exclusion of articles unrelated to the concept of OA, those focusing on company internals, other literature reviews, and conference proceedings. This process resulted in a reduced sample of 102 papers. A completeness check was then conducted by analyzing the references within the sample to identify any potentially relevant studies not initially captured. This step added eight additional papers, bringing the final sample size to 110 articles for the SLR. The selection process is displayed in Fig. 1.

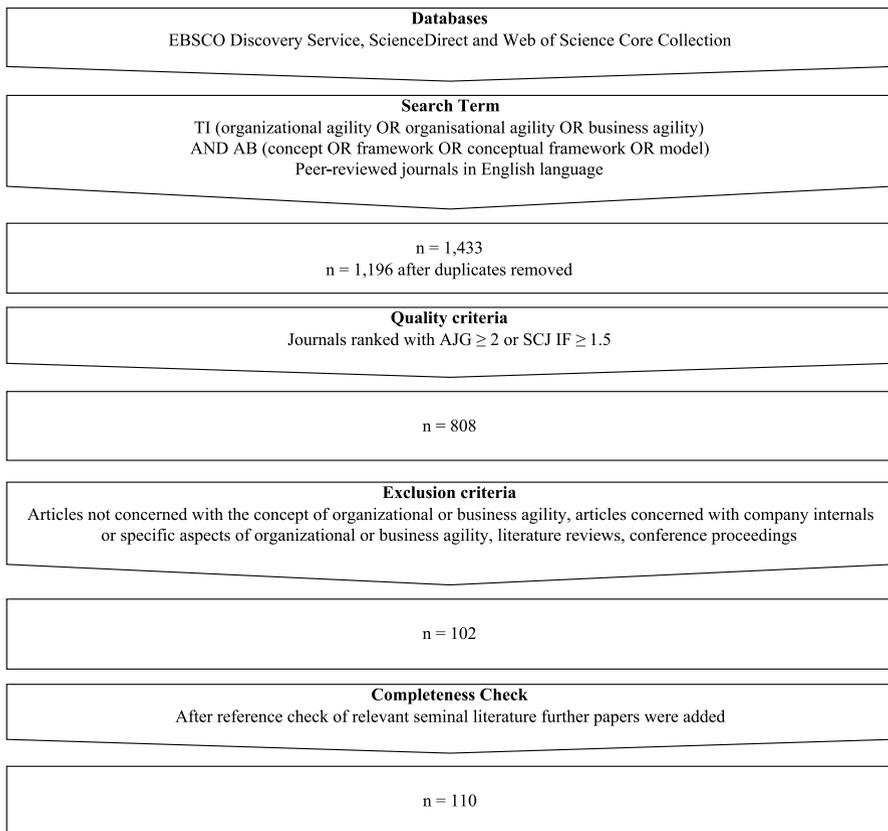


Fig. 1 Systematic literature review approach. Source: Created by authors

3.3 Data processing

The qualitative content analysis followed the grounded theory method of Gioia et al. (2012), ensuring that the findings emerged inductively and were guided by the research questions. The use of MAXQDA24 software for coding and analysis provided traceability, allowing for replication and validation of findings. The coding process was divided into three steps: (1) open coding and identification of first-order concepts, (2) axial coding and clustering of second-order themes and (3) selective coding and development of aggregated design dimensions (Corbin and Strauss 1990; Gioia et al. 2012).

To answer the RQ1, the first-order concepts were identified through repeated readings of the articles, focusing on specific antecedents, attributes, enablers and capabilities related to OA. Examples of identified concepts included “changing customer needs”, “leadership unity”, and “IT infrastructure”. To answer the RQ2, the derived first-order concepts were grouped into second-order themes based on shared characteristics. Themes such as “customer” and “knowledge management” began to emerge, directly aligning with the development of a multidimensional concept. The third step of the coding process answered the RQ2 and RQ3. The second-order themes were aggregated into four overarching dimensions: contextual factors, fundamental attributes, vital enablers, and dynamic capabilities. The integration of theoretical foundations allowed the concept to address RQ3 by explaining how these dimensions interrelate. The contingency theory explains how the external antecedents, such as the “business environment” and “changing customer needs”, influence organizational design and agility. The agency theory highlights the mechanism that address uncertainty in internal and external stakeholder relationships, such as partnering agility and agile leadership. Lastly, the resource-based view provides a lens for understanding the role of internal enablers, such as knowledge management and workforce management, in building dynamic capabilities. Furthermore, the coding process was validated through iterative reviews, ensuring consistency and alignment with the research questions. The derived data structure is displayed in Fig. 2 and will be discussed in the next section.

4 Results

4.1 Descriptive results

A total of 110 papers were identified as relevant to the topic of OA. Of these, 72 papers were published between 2019 and 2024 (up to December 2024), representing 65% of the sample. The oldest paper in the final sample dates back to 1995. The increase in publications over the past five years suggests growing interest in OA and its antecedents. The current review expands on previous SLRs, such as the one by Walter (2020), by incorporating a larger proportion of recent articles and focusing on studies that explore internal and external antecedents of OA through quantitative methods. This methodological shift, observed over time,

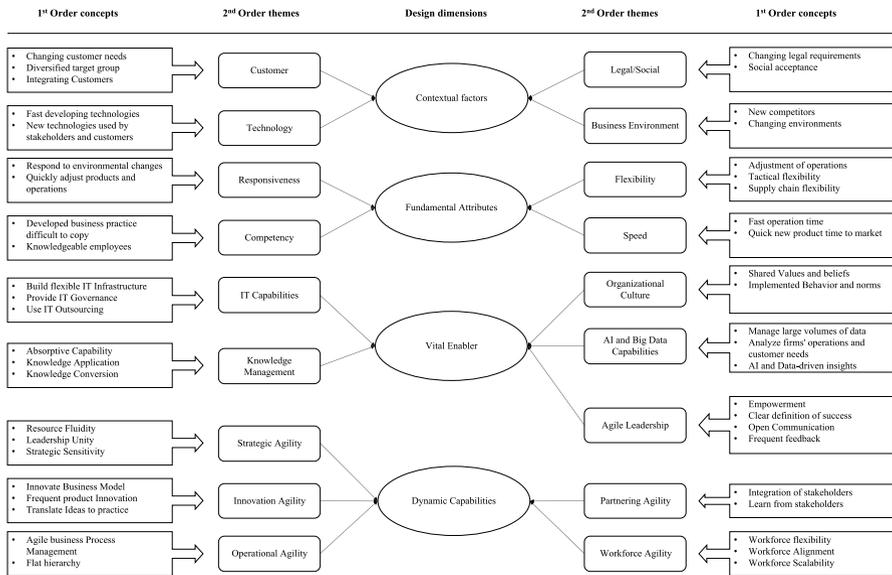


Fig. 2 Data structure derived first-order concepts, second-order themes and aggregated design dimensions. *Source:* Created by authors

highlights the transition from predominantly qualitative research to a stronger emphasis on quantitative approaches.

A particularly noticeable increase in 2024 can be attributed to several key factors. First, the rapid integration of AI, big data, and analytics into OA research has driven new empirical investigations. Recent studies have increasingly focused on AI's role in OA, such as AI-driven decision-making (Seo et al. 2024) and the impact of human resource analytics on OA (Vadithe and Kesari 2024). This aligns with broader trends in management research, where digital transformation and data-driven strategies are becoming essential enablers of OA.

Second, the post-pandemic business landscape has heightened interest in OA as a resilience mechanism. Several 2024 paper explicitly investigate how OA helps firms to recover from crises, particularly in supply chain (Fernández-Miguel et al. 2024), hospitality (Chasapi et al. 2024), and public services (Almazrouei et al. 2024). This trend suggests that the growing complexity and volatility of business environments have made OA a more critical research focus.

Third, scholars are increasingly applying established quantitative models (e.g., structural equation modelling (SEM)) to examine OA's impact on firm performance, leadership, and digital transformation. Recent works have systematically explored how transformational leadership (Dimple 2024), top management support (Zhang et al. 2024), and knowledge management (Satar et al. 2024) enable OA. The presence of validated measurement models and available datasets has allowed more studies to apply SEM and regression-based approaches reinforcing the ongoing shift toward quantitative methodologies. As a result, 2024 saw 17 out

of 22 papers in the sample employ quantitative methodologies, further highlighting the field’s transition toward empirical validation.

Figure 3 illustrates the distribution of publications across the years and highlights the methodological trend within the sample. This figure plays an important role in contextualizing the research by demonstrating the temporal evolution of OA studies and the growing emphasis on quantitative approaches. By depicting these trends, the figure supports the study’s aim of synthesizing diverse insights and providing a comprehensive concept for understanding OA, reflecting the field’s progression and merging areas of focus.

4.2 Multidimensional concept of organizational agility

The a priori research and the final sample of the systematic literature review revealed the inherently diverse nature of organizational agility. The descriptive analysis further indicated a growing interest in the field, with an increase in studies published in recent years. These studies examined various capabilities and antecedents of OA from diverse perspectives, leading to the conclusion that OA cannot be adequately captured as a one-dimensional model or a single dynamic capability. To address this complexity, a multidimensional concept of OA was developed through a systematic and inductive approach grounded in the content analysis of 110 peer-reviewed articles. The content analysis followed Gioia et al. (2012) method, involving the three stages of open coding, axial coding and selective coding. With open coding, first-order concepts were identified from the data, capturing elements related to OA such as contextual factors, attributes and dynamic capabilities. With the step of axial

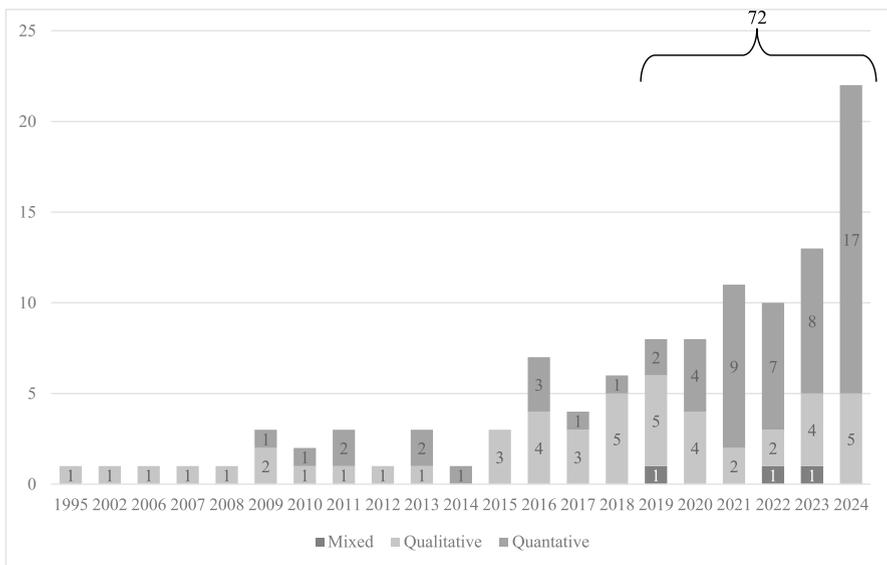


Fig. 3 Sample distribution over the years of publication. Source: Created by authors

coding, these first-order concepts were grouped into second-order themes, reflecting broader categories such as “customer” or “knowledge management”. Lastly, with the selective coding the second-order themes were synthesized into overarching dimensions, aligned with the theoretical foundations such as contingency theory, agency theory and the resource-based view. This process ensured that the concept (Fig. 4) was rooted in empirical evidence from the reviewed literature and theoretical rigor. Specifically, the contingency theory was applied to rationalize external antecedents, such as business environment and technological factors, emphasizing the role of environmental fit. The agency theory informed the understanding of both internal and external antecedents, addressing stakeholder dynamics and decision-making processes. And the resource-based view was used to explain internal antecedents, highlighting the importance of organizational resources and capabilities.

Figure 4 illustrates the resulting multidimensional concept, which integrates contextual factors, fundamental attributes, vital enablers and dynamic capabilities. Each dimension is interconnected, reflecting the interplay of external and internal antecedents in shaping OA. The development of this concept will be described in greater detail in the following sections, providing transparency on its derivations and theoretical grounding.

4.2.1 External antecedents

The contingency theory explains how contingent factors such as the environment, the technology and the market influence the structure and design of organizations (Islam and Hu 2012). Contingent factors for OA have been discussed by many scholars over time. Amongst others customer needs and expectations on quality/price were discussed by Zhang and Sharifi (2000). The technology, which was used, was

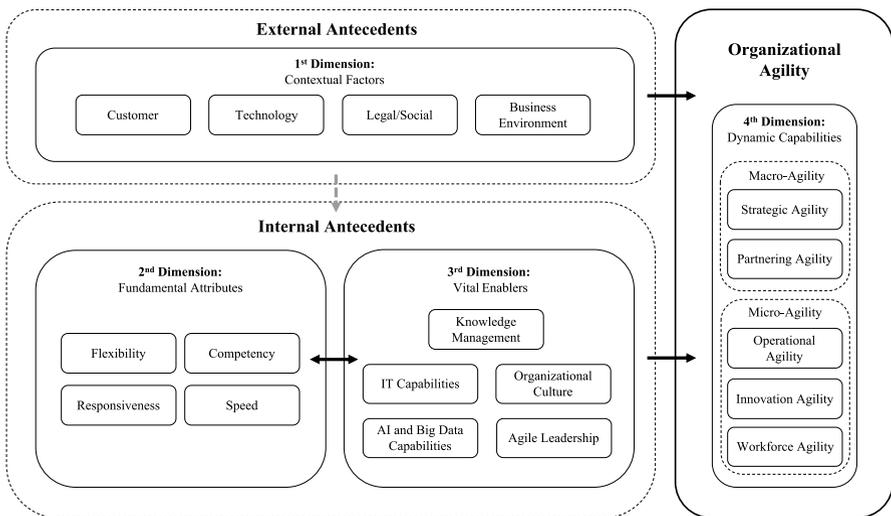


Fig. 4 Conceptual Model of Organizational Agility. Source: Created by authors

also categorized as a contingent factor by Gunasekaran (1999). The relevant contextual and environmental factors of OA, which influence the value generation from IT capabilities were investigated by Felipe et al. (2020). Heine et al. also adopted the contingency-based view to develop a framework for analyzing the fit between strategy, organizational culture, and OA (2016). Lin et al. (2006) discussed the legal and political pressure resulting in the organizations to change. The business environment containing the marketplace and the competitors was later defined by Zhang and Sharifi (2007). These insights informed the development of this study's multidimensional concept of OA, particularly in addressing RQ1: "*What are the key internal and external antecedents of organizational agility?*".

The contingency theory provides a foundation for understanding external antecedents, including customer, technology, legal and social changes, and the broader business environment. These factors were incorporated as the first dimensions of the conceptual model to reflect their influence on the development of OA. While not all contingent factors can be exhaustively investigated due to their dynamic and evolving nature, the growing body of literature supports their inclusion as pivotal components in the concept.

Additionally, the agency theory can be utilized to explain the nature of external antecedents of OA. In this vein, Fayezi et al. (2020) introduced the behavior and buffer-based management mechanisms within the research of OA to address the agency uncertainties. Behaviour-based mechanisms aim to create a "shared framework" (Stank et al. 2001). Buffer-based mechanisms, such as manufacturing and distribution flexibility, can be used to reduce the effect of opportunistic behaviours of the suppliers (Fayezi et al. 2020). These mechanisms were identified through the grounded theory approach applied in the SLR and were integral in addressing the RQ2: "*How can these antecedents be integrated into a comprehensive multidimensional concept?*".

By categorizing external antecedents into customer, technology, legal and social changes, and business environment, the study establishes the *1st dimension* of the conceptual model of OA. This categorization aligns with the overarching research aim of developing a multidimensional concept that integrates diverse antecedents and theoretical perspectives. The contingency and agency theories collectively offer a robust explanation for the interaction between external and internal factors, supporting the study's objective of advancing a comprehensive understanding of OA.

4.2.2 Internal antecedents

Understanding the internal antecedents of OA involves leveraging both agency theory and the resource-based view. Bai et al. (2023) explored the application of agency theory to explain the micro-view of agility within the organizations, particularly addressing the impact of information asymmetry between business units. This micro-level perspective is considered critical for differentiation among the various dynamic capabilities of OA and is incorporated into the multidimensional concept proposed in this study.

The resource-based view (Penrose 2011) has also been widely used to explain how internal antecedents of OA, such as resources and capabilities, influence

organizational strategy and performance. Scholars like Crick and Crew (2020) have emphasized that the effective utilization of resources contributes significantly to OA. Panda and Rath (2016) argue that IT resources, when well-managed, enhance overall IT capabilities, itself recognized as a key antecedent of OA. The resource-based view further posits that resources possessing attributes such as heterogeneity, mobility, and value creation can lead to a sustained competitive advantage (Baškarada and Koronios 2017). These theoretical insights inform the study's concept by categorizing internal antecedents such as knowledge management, organizational culture, and agile leadership as vital enablers of OA. These enablers directly address RQ1 by identifying key internal factors and their role enabling agility.

To emphasize the importance of internal antecedents, agility attributes and enablers are positioned as foundational elements of sustainable organizational capability. As noted by Sadikoglu and Ozorhon (2022), these elements serve as critical drivers of agility. Attributes are categorized as fundamental, while enablers are deemed vital. These categorizations form the 2nd and 3rd dimensions of the study's multidimensional concept, aligning with RQ2, which seeks to integrate antecedents into a coherent model.

2nd dimension: fundamental attributes Gunasekaran (1999) was one of the first to discuss a taxonomy on agility attributes. This classification contained separate groups, such as virtual enterprise formation tools/metrics or physically distributed. Later Yusuf et al. (1999) provided a more extensive list of different agility attributes. Amongst others it contained integration, quality, partnership and competence. Sharifi and Zhang (1999) provided a categorization of agility attributes as well, but in a more succinct manner. Namely *responsiveness*, *competency*, *flexibility* and *speed*. These categories were adopted and contextualize in this study as *fundamental attributes* due to their essential role in organizational survival and competitiveness. This conclusion is made due to the following reasons: First, without having the ability to identify and respond to change, no organization can survive in a highly competitive environment (Teece 2007). Second, without a competency of productivity, efficiency and effectively achieving the companies' goals and aims, no company can perform financially sustainable (Aurélio de Oliveira et al. 2012). Third, without the ability to flexibly change the resources and adapt to modern technologies and methods, a company will not meet the changing customer demands (Nijssen et al. 2012). And lastly, without the ability to carry out tasks and operations fast a company will consume too many resources and not be competitive over a longer time (Sherehiy et al. 2007).

These attributes are defined as the 2nd dimension of the proposed concept, directly enabling the activation of the 3rd dimension of vital enablers. Their inclusion addresses RQ2 by highlighting foundational internal factors essential for achieving agility.

3rd dimension: vital enablers Over time, the list of OA enablers has evolved. Gunasekaran (1999) identified seven key enablers, including virtual enterprise formation tools, rapid partnership-formation metrics, and prototyping tools. Sharp et al. (1999) expanded this with enablers such as an empowered workforce and IT. Later, agile strategy (Brown and Bessant 2003) and organizational culture (Conforto et al. 2014) were also recognized. However, there is no universally agreed-upon list, and

research continues to refine these factors. Recent studies have further expanded this perspective. Drawing from Bottani’s (2009) definition of enablers as factors that enhance agility, this study identifies the following as *vital enablers* through its inductive approach: Knowledge management (facilitates organizational learning and adaptability), IT capabilities (provide the technological foundation of agility), AI and Big Data capabilities (enhance decision-making through advanced data analytics and machine learning), organizational culture (supports agility through shared values and norms) and agile leadership (drives strategic alignment and responsiveness).

Each enabler must be actively practiced to establish and sustain the dynamic capabilities required for OA. These enablers constitute the 3rd dimension of the concept and directly contribute to addressing RQ2, which seeks to integrate diverse antecedents into a multidimensional model. Table 2 summarizes the key studies supporting each enabler, providing further theoretical grounding. The active implementation of these enablers facilitates the next stage of established capabilities, forming a critical link in the proposed concept.

4.2.3 Organizational agility

A novel perspective on OA is introduced, conceptualizing it as an interlinked bundle of dynamic capabilities rather than a single dynamic capability, as suggested by earlier scholars (Teece et al. 2016; Walter 2020). Reflecting the complexity and diverse nature of OA, the identified dynamic capabilities are categorized into two groups: *macro*-agility and *micro*-agility. Macro-agility, comprising strategic and partnering agility, focuses on the external environment and stakeholders, while micro-agility, encompassing operational, innovation, and workforce agility, addresses the internal optimization of resources to achieve competitive advantages.

Table 2 Selection of studies of vital enablers. *Source:* Created by authors

Vital enablers	Studies
Knowledge management	Van den Bosch et al. (1999), Zahra and George (2002), Rafi et al. (2022)
IT capabilities	Van Oosterhout et al. (2006), Lu and Ramamurthy (2011), Tallon and Pinsonneault (2011), Lee et al. (2015),
AI and big data capabilities	Davenport (2014), Ghasemaghaei et al. (2018), Arias-Pérez et al. (2023), Shafiabady et al. (2023), Xu et al. (2024)
Organizational culture	Crocitto and Youssef (2003), Benitez-Amado et al. (2010), Felipe et al. (2017)
Agile leadership	Silva-Martinez (2023), Hutter et al. (2023), Ly (2023)

Strategic agility has three main interrelated elements: (1) strategic sensitivity—the ability to sense environmental trends and forming them into a strategic planning process; (2) leadership unity—the mutual agreement of the management to executive the strategic plans and (3) resource fluidity—the enablement of all resources of the company to flexibly adjust according to the strategic focus (Doz and Kosonen 2008). Even though dynamic capability and strategic agility can analytically be separated, they are strongly interlinked (Teece et al. 2016). Within the proposed concept, strategic agility is conceptualized as an outcome of established dynamic capabilities, supported by vital enablers. This perspective directly addresses RQ2 by integrating strategic agility as a macro-level dynamic capability essential for OA.

Partnering Agility describes the ability of an organization to leverage the assets of its stakeholders through alliances, partnerships and joint ventures (Sambamurthy et al. 2003). As a result of the strategic alignment, organizational culture and the sharing and exploiting of external knowledge, the partnering agility becomes an outcome of vital enablers. Together, strategic and partnering agility form the macro-agility dimension of the concept, emphasizing the external perspective of OA.

Operational agility describes the capability of an organization to be able to operate in an innovative, fast, accurate and cost-effective manner (Chen and Siau 2020). Furthermore, the ability of operational agility is described as redesign processes rapidly to exploit fast changing market conditions (Felipe et al. 2017). Operational agility aligns with RQ1, as it exemplifies how internal resources are mobilized to address external market demands.

Innovation Agility describes the capability to innovate processes, products and business models (Franco and Landini 2022). It can be distinguished between external and internal factors, which contribute to innovative performance of an organization. External factors are namely for example knowledge management (D'Este and Immarino 2010) and technology capability (Conte and Vivarelli 2014). Internal factors are namely for example management practices or governance structures (Laursen 2003). These capabilities are already included in our 3rd dimension of vital enablers. Scholars also draw a direct connection from business model innovation and OA (Bhatti et al. 2021; Zare and Persaud 2024). By integration these insights, innovation agility is positioned as a micro-agility capability, focusing on the organization's internal capacity to adapt and innovate in response to external pressures.

Workforce agility can be defined as the capability of an organization to redirect its workforce efficiently and effectively to value creating activities (Alavi et al. 2014). This capability can be viewed from two perspectives: employee-driving flexibility, where individuals decide how and when to work (Hill et al. 2008), and organizational flexibility, emphasizing scalable workforce models to adaptable structures (Franco and Landini 2022). Key elements of workforce agility include rapid organizational learning, a flexible workforce, and a highly adaptable structure (Harsch and Festing 2020). Without an empowered and knowledgeable workforce, achieving sustainable and established OA is unattainable (Alavi et al. 2014). Workforce agility, as a micro-agility capability, directly supports RQ2, illustrating the role of the internal dimensions in achieving broader organizational agility.

This categorization into macro- and micro-agility aligns with the research aim of developing a multidimensional concept for OA, integrating external and internal perspectives and linking them to dynamic capabilities. By distinguishing these dimensions, the concept addresses the interdependencies between the external environment and the internal resources, offering a comprehensive understanding of how OA operates across organizational levels.

5 Conclusion

5.1 Theoretical contributions

This paper makes several contributions to the ongoing research on OA. First, it offers a comprehensive systematic literature review, employing the methods of Tranfield et al. (2003) and Kraus et al. (2022). Previous SLRs have explored various aspects of OA, often focusing on specific domains such as agile manufacturing or IT, or on narrower conceptualizations of OA. This study builds on these efforts by incorporating a more recent dataset and utilizing a grounded methodology to provide greater transparency and capture the field's ongoing evolution. As highlighted in RQ1, the study synthesizes diverse internal and external antecedents of OA, addressing the shift in recent research from qualitative to quantitative methods (see Fig. 3). This shift has led to a growing focus on specific capabilities such as IT capabilities (Tallon et al. 2019), workforce agility (Franco and Landini 2022), knowledge management (Rafi et al. 2022), agile leadership (Ly 2023), big data capabilities (Davenport 2014), and innovation agility (Ramadan et al. 2023). By building on seminal works like Sharifi and Zhang (1999) and Overby et al. (2016), this study integrates these more recent findings into a cohesive concept, as outlined in the research aim.

Second, the study advances the conceptual understanding of OA by applying a grounded theory approach to identify its multidimensional nature. External contextual factors, such as customer and technology, were categorized as 1st dimension of the proposed concept. Internal antecedents, including fundamental attributes like speed and flexibility, form the 2nd dimension, while vital enablers such as knowledge management and IT capabilities constitute the 3rd dimension. Together, these dimensions lead to the 4th dimension: dynamic capabilities, which encompass macro-agility (e.g., strategic and partnering agility) and micro-agility (e.g., operational, innovation, and workforce agility). This differentiation addresses the RQ2, which seeks to integrate diverse antecedents into a coherent, multidimensional concept, and contributes to advancing the understanding of OA's internal and external dynamics.

Third, the study leverages underlying theories—contingency, agency, and the resource-based view—to inductively explain the nature of OA's antecedents. Contingency theory provides insights into how external antecedents, such as market and technological factors, influence agility. Agency theory clarifies the mechanisms through which internal and external stakeholders align their efforts, while the resource-based view underscores the importance of internal resources like knowledge management and IT capabilities in enabling agility. These theoretical

foundations are integral to explaining the interplay between antecedents, aligning with the study's aim to bridge theoretical and practical perspectives.

Lastly, the paper contributes to the ongoing discussion on the fields of dynamic capabilities and strategic management. Previous research has often categorized OA as a singular dynamic capability (e.g., Crick and Chew 2020; Clauss et al. 2021). However, this study identifies a broader set of interlinked dynamic capabilities through the SLR and grounded theory approach. These capabilities include strategic agility (Doz and Kosonen 2008), innovation agility (Chakravarty et al. 2013), and workforce agility (Harsch and Festing 2020), which are inherently linked to the broader concept of OA. By presenting OA as a bundle of dynamic capabilities rather than a singular construct, the study positions itself within the strategic management and organizational behaviour domains, addressing a gap in the literature. This conceptualization aligns with the RQ3, which seeks to identify and explain the theoretical foundations of OA's multidimensional nature.

In summary, this study positions its contribution within the growing body of research on OA by offering a recent, grounded, and theory-driving concept. It bridges the fragmented perspectives, incorporates dynamic capabilities, and integrates internal and external antecedents into a multidimensional model. These contributions aim to provide both scholars and practitioners with a nuanced understanding of OA, enhancing its applicability in diverse organizational context.

5.2 Practical implications

In addition to offering an overview of the evolution of agility definitions, this research provides an interrelated, multidimensional perspective on the concept of OA, with actionable insights for practitioners. The proposed multidimensional concept is designed to assist CEOs, managers, and other decision-makers in understanding the internal and external antecedents and prerequisites necessary to foster OA effectively. A comprehensive understanding of the interconnected mechanisms of OA's antecedents is critical for enabling agility. Without such understanding, efforts to enhance OA are likely to be fragmented and ineffective, particularly in dynamic and complex business environments (Felipe et al. 2017).

External contextual factors, such as customer behavior, technology adaption, and regulatory changes, are crucial antecedents that organizations must carefully monitor and respond to. For example, companies operating in consumer-driven industries, such as retail or technology, must continually assess changing customer preferences and integrate these insights into their strategic planning processes (Sharifi and Zhang 1999). Similarly, advancements in technology, such as AI, Big Data, digital platforms, should be leveraged to enhance operational and strategic agility (Al-Omouh et al. 2024; Overby et al. 2006). Practitioners can use the proposed multidimensional model's 1st dimension, which focuses on external antecedents, as a guide to assess their external environment systematically. This dimension directly addresses RQ1 by identifying key external drivers that organizations must prioritize to remain competitive.

The multidimensional model also emphasizes the important fundamental attributes, such as responsiveness, flexibility, and speed, as essential internal capabilities. These attributes influence the activation of vital enablers, such as knowledge management systems, IT infrastructure, and agile leadership. For instance, responsiveness in supply chain operations can be achieved through investments in real-time inventory tracking systems, which enhance flexibility and operational speed (Gunasekaran et al. 2008). Similarly, effective knowledge management practices, such as capturing and sharing organizational insights through digital platforms, can empower employees to make informed decisions quickly, enabling workforce agility (Qin and Nembhard 2010). Practitioners can leverage these attributes and enablers to create the foundation for achieving dynamic capabilities, which are at the core of RQ2.

Dynamic capabilities, as conceptualized in this study, offer a nuanced view of OA by encompassing both macro- and micro-agility (Teece et al. 2016; Yusuf et al. 1999). Macro-agility emphasizes strategic sensing and the ability to build effective partnerships with external stakeholders. For example, a manufacturing company seeking to expand into new markets can utilize macro-agility by identifying potential partners with complementary resources or by adapting its strategy to emerging market trends (Doz and Kosonen 2008; Sambamurthy et al. 2003). Micro-agility, on the other hand, focuses on internal organizational capabilities, such as operational flexibility, innovation, and workforce agility. A technology firm, for instance, might enhance innovation agility by fostering cross-functional collaboration and embedding innovation processes into its culture (Franco and Landini 2022). This dual categorization highlights the interplay between external and internal dimensions of OA, providing practitioners with a structured approach to enhance agility at both the strategic and operational level.

Furthermore, the multidimensional concept clarifies the relationships among contextual factors, attributes, enablers, and dynamic capabilities, offering a roadmap for implementation. Decision-makers can utilize the concept in several practical ways to enhance OA. First, they can assess organizational readiness by conducting organizational audits to identify strengths and gaps in agility-related capabilities. For instance, IT systems must be evaluated to determine if they are equipped to support rapid decision-making or require upgrades (Li et al. 2025). Additionally, prioritizing investments is crucial, with resources allocated to capabilities that align with the organization's industry and context. Companies in fast-paced industries, for example, might prioritize investments in workforce agility and innovation while those in regulated industries might focus on technology adoption and compliance (Chakravarty et al. 2013). Finally, organizations can develop agile leadership by building teams capable of navigating uncertainty, inspiring innovation, and fostering a culture of continuous learning. Agile leadership training programs can support managers and executives in effectively leading their teams through periods of rapid change (Tandon et al. 2024).

To address the typical “so what?” question for practitioners, this study provides specific examples and pathways for implementing the findings. For instance, a retail organization aiming to enhance customer responsiveness could deploy big data analytics to predict customer preferences, while a healthcare provider could use agile

methods to adapt its workforce allocation to meet fluctuating patient demand (Felipe et al. 2020). By offering practical guidance grounded in the multidimensional concept, this study ensures that its findings are not only theoretically robust but also directly applicable in real-world scenarios.

In summary, this multidimensional concept enables practitioners to prioritize and implement specific capabilities to their organizations context. By addressing both external and internal antecedents, as well as the interplay between macro- and micro-agility, organizations can enhance their agility across strategic and operational levels, ensuring long-term competitiveness and resilience in dynamic environments.

5.3 Limitations and future research

Despite the study's aim to conceptualize the internal and external antecedents of OA from a multidimensional perspective, several limitations should be acknowledged, and opportunities for future research should be outlined.

5.3.1 Limitations

First, the selection of articles in the sample and the application of exclusion criteria may have led to the omission of potentially relevant research. Specifically, conference papers, books, and company-specific internal reports were excluded, which might contain valuable insights not captured in the analysis. The quality thresholds applied, while ensuring the inclusion of high impact studies, also contributes to the exclusion of some potentially relevant articles. Additionally, the reliance on automated search strategies using predefined search strings carries the inherent risk of omitting relevant studies due to limitations in keyword coverage or database indexing.

Second, while the study aimed to develop a conceptual model of OA that incorporates various dimensions, it is acknowledged that the contingent nature of certain variables may limit the model's comprehensiveness. Contingency factors, by their nature, are dynamic and context-dependent, which makes their full encapsulation challenging. However, the proposed multidimensional concept offers a novel perspective by conceptualizing OA as a bundle of dynamic capabilities rather than a singular construct. This approach addresses RQ2 by integrating diverse antecedents into a cohesive concept and highlights the interplay between macro- and micro-level dimensions of OA.

5.3.2 Future research

Building on the limitations and contributions identified in this study, several promising avenues for future research can be proposed to advance both theoretical and practical understanding of OA.

The multidimensional concept developed in this study requires empirical validation across diverse organizational contexts and industries. Future research should focus on testing the concept in real-world settings to evaluate its applicability and

generalizability. Mixed-method approaches, such as case studies combined with large-scale surveys, could offer valuable insights by providing both depth and breadth in validating the concept. For instance, longitudinal studies could examine how internal antecedents like knowledge management and IT capabilities evolve over time in response to external pressures and organizational dynamics.

The distinction made in this study between macro-agility, such as strategic and partnering agility, and micro-agility, such as operational and workforce agility, highlights the need for more granular exploration of microlevel dimensions. These micro-level antecedents remain underexplored in terms of their individual contributions and interdependencies. Future research should examine how specific internal antecedents interact to create sustainable OA and investigate the mechanisms that enable organizations to scale micro-agility to achieve macro-level outcomes. Multi-case research designs could be particularly useful in analyzing how micro-agility is implemented across industries, while employee-level survey could capture the internal dynamics underlying these processes.

Another key area for future exploration is the role of vital enablers, such as knowledge management, IT capabilities, and agile leadership, in developing dynamic capabilities. These enablers are foundational for achieving OA but are insufficiently studied in existing literature. Future research could investigate the influence of these enablers on both micro- and macro-agility and explore how organizations balance their investments in enablers to maximize agility outcomes. Such studies could make significant theoretical contributions to the dynamic capabilities discourse by explaining how these enablers interact to foster organizational resilience and adaptability.

The relevance of OA is likely to vary significantly across industries and business environments, necessitating contextualized research. Future studies could examine how external antecedents, such as market dynamics and regulatory changes, influence OA in industries with varying levels of complexity, such as technology, manufacturing, or retail. It is equally important to investigate whether the proposed multidimensional framework holds across different organizational sizes, geographies, and strategic orientations. Comparative studies across industries could provide insights into universal versus context-specific dimensions of OA, offering valuable guidance for both scholars and practitioners.

With the rapid evolution of technologies such as AI, Big Data analytics, and digital platforms, future research should explore the implications of these advancements for OA. Emerging technologies have the potential to shape internal enablers and dynamic capabilities in profound ways. Future studies could address questions such as how AI-driving decision-making systems enhance operational agility or how digital tools influence workforce and innovation agility. Empirical studies, including experimental designs, could test the specific impacts of these technologies on agility outcomes, shedding light on their transformative potential.

Finally, this study emphasizes the importance of bridging the gap between theory and practice. Translating theoretical insights into actionable guidance for practitioners remains a critical area for future work. Research could focus on operationalizing the multidimensional concept across diverse organizational contexts by developing industry-specific toolkits or frameworks. For instance, agile maturity models could

be adapted to reflect the multidimensional concept proposed in this study, providing a practical roadmap for organizations to implement agility strategies effectively.

By addressing these research directions, future studies can build on the findings of this work to deepen theoretical insights and provide meaningful guidance for practitioners, ultimately enhancing the relevance and applicability of OA in dynamic and complex environments.

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Declarations

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