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Agility and Resilience as Sources of Competitive Advantages a Theoretical and Empirical Investigation

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AGILITY AND RESILIENCE AS SOURCES OF COMPETITIVE ADVANTAGES

A THEORETICAL AND EMPIRICAL INVESTIGATION

BY

Celso Roberto de Aguillar Pinho

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ACCEPTANCE

This dissertation was prepared under the direction of the *Celso Roberto de Aguillar Pinho* Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Business Administration at the J. Mack Robinson College of Business of Georgia State University.

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ABSTRACT

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April 13th, 2023

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Today's hypercompetitive global climate makes lasting competitive edge unsuitable. Firms face increasing complexity due to the rapid entry and growth of internationalizing firms from emerging markets, technological breakthroughs, discontinuous innovation, and the uncertainties surrounding unexpected shocks transmitted across world markets, such as the Covid-19 pandemic. In this research, I examine how firms have built and applied two adaptive abilities (agility and resilience) to respond to environmental changes and disruptions to create sustainable competitive advantage. An agile organization is simultaneously a resilient organization. Despite agility's increased relevance in the academy and practitioners' publications, its epistemological and ontological analyses are superficial at best. Specifically, supported by inductive and deductive analysis, I bring clarity to agility's concept and its boundary conditions. Thus, I propose an integrative multilevel framework of the antecedents, the enablers, and the outcomes of the process of agility performance. Moreover, through in-depth interviews with executives, I explore how agility and resilience manifested in emerging market multinational firms (EMNEs) enhance their competitiveness by using both adaptive abilities in their international operations. The findings reveal that all organizations possess some degrees of agility and resilience simultaneously as two faces of the same coin. Furthermore, agility and resilience are interdependent, comprising five common domains.

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INTRODUCTION TO THE ESSAYS

The Motivation for the Study

Firms have faced an increasingly integrated and complex global landscape due to fast changes in customers' needs and tastes, in the technological basis of the industry and the competitive landscape. The traditional sources of sustainable competitive advantage have become unfit in today's hypercompetitive global environment. With high uncertainty, fast changes, and unexpected shocks, organizational agility, and organizational resilience concepts have gained increasing attention in academic and management circles. This dissertation explores through three essays how firms have built and applied two adaptive abilities (agility and resilience) to respond to environmental changes and disruptions and create sustainable competitive advantage.

Although it has become popular, the agility concept seems to be carelessly applied in research streams. Several studies in the literature do not define the concept and leave its interpretation to the reader. Moreover, studies use scales and measurements borrowed from other studies without adjusting them to the content and scope of their own study. Thus, in the academic literature, we find that the term agility has been assigned to a variety of conceptualizations. Such references in managerial usage push the scholarly understanding of the concept. Indeed, there is a considerable debate among scholars, practitioners, and consultants about the meaning of agility (Prange, 2012; Weber & Tarba, 2014). Such discord extends the concept's purpose, leading to a lack of common understanding and making it difficult to elaborate on previous research findings (Walter, 2021). Thus, this dissertation's first and second essays are dedicated to a better understanding and clarification of the concept of agility, while the third one is empirical research on how multinationals build and apply agility and resilience.

Agility has been defined using different facets such as ability, capability, adaptiveness, changes, knowledge, quickness, and responsiveness. Firstly studied as associated with manufacturing flexibility and responsiveness, agility is currently present in studies about human resources, strategy, innovation, and business models, providing the contextualization in which organizations can be agile (Arbussa et al., 2017; Cheng et al., 2020; MäkiKohtaa et al., 2020; McIver et al., 2018). The diversity of this body of knowledge points to a need for consolidation of conceptualizations to provide clarity to the agility construct (Nemkova, 2017). In this dissertation, I propose to assess and explore agility's conceptual and theoretical place in research through three essays.

In the first essay, I adopt a multi-method approach to capture the concept of agility and its relevant sense-making (i.e., Bernardes & Hanna, 2009; Gligor et al., 2019), measurables, and patterns through tracking the evolution of the concept over three decades of research (1991-2021). Based on this longitudinal development of the concept and the theoretical bases of the research, current trends are presented, suggesting guidance for future research. This essay was published in volume 53 of the Journal of Business Research in 2022.

The second essay is a conceptual study to provide more clarity on the agility construct. Building on a systematic literature review of 196 articles published between 2013 and 2022, I explore four essential elements to clarify the concept of agility: definitions, scope conditions, the relationship with other constructs, and coherence or logical consistency (Suddaby, 2010b). From the literature review, different facets of agility are captured and analyzed. Searching for common elements among these facets in different contexts narrows the expansive scope that these several facets represent, increasing the specificity of the construct and its use by scholars.

The third essay investigates how six internationalized firms from Brazil (EMNEs) develop and apply resilience and agility abilities – two adaptive capabilities to change their strategies in turbulent environments. In this essay, building on an inductive analysis of semi-structured interviews with executives from these firms, I apply multiple case studies methodology to better understand how resilience and agility allow Brazilian firms to adapt and respond to uncertainty, fast changes, and disruptions.

Significance of the Study

In recent years, the competitive landscape has changed dramatically due to factors like globalization, the internet, rapid technological changes, increasing innovation and knowledge transfer rates, imitation, financial crises, and obsolescence of business models and products. At the same time, marketplaces have been experiencing increasing turbulence and unpredictability, bringing a scenario of deep uncertainty (Teece, Peteraf, & Leigh, 2016). The current global business environment has been characterized by constant change, unexpected shocks (i.e., Covid-19), shorter product life cycles, and increasing demand uncertainty. To achieve a sustainable competitive advantage, companies embedded in those environments must be resilient, agile, and capable of making quick transitions from one product, service offer, or business model to another (Dyer & Ericksen, 2005). When combined with complementary resources, skills, and competencies, agility and resilience are considered crucial to navigating smoothly in turbulent and disruptive environments (McCann et al., 2009).

The agility literature has experienced remarkable growth in the last 30 years, spreading to diverse research fields. Although scholars have expressed great interest in agility, its study has remained ambiguous and questionable for several reasons. These problems and divergence regarding the definition of agility itself and lack of clarity in the research object and context lead

to several issues, such as a lack of comparability of the research results, confusion between agility and its antecedents and outcomes, lack of specificity of agility referents affecting the definition of the levels of analysis, and a failure in the measurement of the construct.

Moreover, the definitions used to represent agility are considered "incomplete, sometimes overlapping and divergent" (Conforto, Amaral, da Silva, Di Felippo, & Kamikawachi, 2016, p. 661) no matter the context (i.e., strategic or operational) and the focus of research (i.e., project management or supply chain), "remaining ambiguous and lacking consensus" (Sharma et al., 2017). Thus, the theoretical basis for understanding agility has remained fragmented and fuzzy due to its empirical use as an antecedent, moderator, mediator, or outcome construct, depending on the context and unit of analysis. Moreover, little is known about the drivers of agility as firm capabilities that help firms overcome disruptions and continue to create value and competitive advantages (Gölgeci et al., 2019).

Launching and sustaining a successful business in emerging markets entails unique challenges, such as high frequency and several changes of varying kinds associated with severe surprises and unanticipated shocks. The international business literature, while extensive, has given scant attention to how these adversities enable or hinder the development of superior abilities and sustainable competitive advantages for firms from emerging markets operating internationally (Ramamurti et al., 2019). Few is known how internationalized firms from emerging markets take advantage of these abilities to overcome environmental changes and disruptions in their operations in their home country and abroad (Hernandez and Guillen, 2018), demanding further investigation.

Research Purpose and Questions

The purpose of this dissertation is threefold. First, I look back and ask how the concept of agility has evolved over time, approaching the evolution marks of the epistemology (how we know) and the concept's ontology (how it fits together in the broader research streams), proposing future research directions. Second, by conceptually clarifying the agility construct and its theoretical discipline and analyzing its coherence in the current literature, I propose a parsimonious and comprehensive definition of agility and its boundary conditions. Finally, I explore how emerging market multinationals (EMNE) build and apply agility and resilience to make and implement strategic decisions in their increasingly uncertain and fast-changing home and host environments.

The first essay examines how the agility concept has evolved over three decades of research (1991-2021) by mapping the critical phases of development of the concept of agility in research and analyzing each evolutionary phase to help attain a better understanding of the concept. Additionally, it explored the role of the agility concept in theorizing to reveal how different theories have been used to explain the phenomenon in organizational strategy and structure. This essay extends the agility literature by showing its past development and proposing new venues that emerge from those analyses. The second essay sheds light on the agility construct. It resolves the conflicting problems in using it, providing an in-depth understanding of the agility construct by applying a systematic literature review to investigate the ambiguity surrounding its dimensions, definitions, and contexts in which agility is studied. The third essay explores both the academic and practitioner operationalizations of the agility and resilience concepts. Building on the context of the internationalized firms from an emerging country

(Brazil), it informs scholars about the underlying structure and dynamics of agility and resilience and how it is operationalized in EMNE research and implemented in practice.

Contribution of the Essays

The present dissertation offers academic and practitioner contributions. In responding to our research questions, I extend the theorizing on EMNEs regarding the use of agility and resilience in dealing with changes and disruption. It also extends the knowledge of agility and resilience by capturing and discussing the interplay and interconnectedness between them and offering a dynamic integrative framework. Additionally, this dissertation expands the understanding of agility by providing a clear definition and boundary conditions to the construct, proposing an integrative framework for agility, and suggesting several research venues.

This dissertation provides at least three insightful contributions to the practitioners. First, the integrative framework proposed in the second essay offers directions to firms to build the main abilities and mechanisms to employ agility successfully. Additionally, firms can build on the typology and the dynamic integrative framework provided in the third essay to evaluate their current positioning regarding agility and resilience abilities and plan objectives for improvements across the dimensions. Finally, organizations must adopt the dynamic framework to build their balanced agile-resilient positioning through direct agency and strategic management.

ESSAY 1: THE AGILITY CONSTRUCT IN THE LITERATURE - CONCEPTUALIZATION AND BIBLIOMETRIC ASSESSMENT

Abstract/Acknowledge

This essay is based on the previously published article: Pinho, C. R., Pinho, M. L. C., Deligonul, S. Z., & Cavusgil, S. T. (2022). The agility construct in the literature: Conceptualization and bibliometric assessment. Journal of Business Research, 153, 517-532.

I have permission from my co-authors and publishers to use this work as part of my dissertation.

Introduction

The competitive landscape has been changing dramatically in recent years due to many factors, including globalization, the internet, rapid technological changes, increasing rates of innovation and knowledge transfer, imitation, financial crisis, and obsolescence of business models and products. At the same time, marketplaces have been experiencing increasing turbulence and unpredictability, bringing a landscape of deep uncertainty (Teece, Peteraf, & Leih, 2016), and bringing new urgency to the companies for adaptation and responsiveness. In this context, the concepts of agile or agility have increasingly called for attention in academic and management circles.

This published article assessed how research addressed the concept of agility for three decades (1991-2021), aiming to answer the following research questions: what we know about the concept (epistemology) and how it fits in research streams (ontology). By mapping the critical phases of the concept's evolution in the literature, it was possible to better understand agility and its foundations. Analyzing how it appears in theorizing, it was possible to consider it a semiotic construct used in developing responses to changes external to organizations. Answering the previous research questions allowed us to discuss the concept's future.

The epistemological perspective of agility provided at least three contributions to knowledge advancements. First, using two quantitative approaches (factor analysis and MDS) and a theory-driven examination allowed an in-depth analysis of the concept and its foundations. Second, we provided details on how the five most used theoretical perspectives are present in agility studies. Finally, departing from the patterns provided by factor analysis and MDS mapping of agility's intellectual structure, several future research avenues were provided.

Background

Agility is not a new concept. Originally, agility was a concept used by sports and military sciences (Gligor, Holocomb, & Stank, 2013), being borrowed by manufacturing in 1991 to deal with the needs of production systems' adaptation to changes in the business environment requiring speed, flexibility, responsiveness, and infrastructure (Yusuf, Sarhadi, & Gunasekaran, 1999). Later, those operational features were extended into agility as an organizational orientation: "agility is a business-wide ability that embraces organizational structures, information systems, logistics processes and, in particular, mindsets" (Christopher, 2000a, p. 37).

Although this definition brings agility to the context of the organizations, it shows what agility encompasses but not what agility is. Conceptually, agility has been used to study a broad range of phenomena and research streams, such as manufacturing (Kumar & Motwani, 1995), supply chains (Christopher, 2000b), information systems (Sambamurthy et al., 2003), organizations (Felipe et al., 2016), strategy (Doz & Kosonen, 2010), and marketing (Hagen et al., 2019). This broad range of contexts in which the concept has been used led to a proliferation of definitions, disagreements, and a lack of common understanding, making it difficult to build a theory on previous research findings (Walter, 2021). Accordingly, there is a need for consolidation and structuration of the extant literature to understand the construct better. The

published article attempts to fill this gap by assessing the agility concept through varying perspectives by exploring its conceptual and theoretical positioning in scholarly works.

Methodology

The article applied bibliometrics to explore and analyze agility's conceptual and theoretical positioning in scholarly works. Bibliometrics is regarded as a valuable tool for systematically assessing, visualizing, and analyzing scientific research (Donthu et al., 2021). As a methodological approach, it is particularly suitable for mapping the structural and dynamic aspects of scientific research, supporting explanations about the evolution of a given theme in a specific domain (Cobo et al., 2011). As science mapping and interpretation are complex, requiring rigorous systematization and analyses (Aria & Cuccurullo, 2017), I adopted a research design coherent with its research questions.

Results

The final dataset was comprised of 476 articles from 45 top-tier journals in business and management literature and was analyzed with the support of R-Bibliometrix across three periods (1991-2008; 2009-2016; 2017-2021), providing valuable results. First, semantic maps were built using the author's keyword and co-word analysis. Then a bibliographic coupling analysis was applied to detect which documents shared references, being similar in scope. As a result of this, the article provided a mapping of the main themes and how they evolved in the literature (Donthu. Kumar, & Pattnaik, 2020). Second, it was conducted a co-citation analysis of the references to reveal the intellectual structure and thematic clusters of themes for each one of the periods. Using factor analysis and MDS, it was possible to interpret the core links between each reference within the clusters (Di Stefano, Gambardella, & Verona, 2012). These maps provided sensemaking and insights that resulted in a better understanding of the ontology of agility. Third,

content analysis was applied to data, providing information about what theories were most adopted to explain phenomena related to agility. As a result, the article sheds light on the main theories employed in agility research, discussing their perspectives, application, and limitations. Finally, the joint conceptual and theoretical interpretation of the outputs allowed me to build a chart showing the longitudinal development of agility research that helped to uncover future trends (Ferreira et al., 2014).

Discussion

This essay attempted to determine how research on agility has progressed over three decades (1991-2021) by employing jointly a qualitative analysis and a quantitative analysis applying bibliometrics over 476 articles and reviews on this topic. As previously mentioned, the literature on agility has experienced a tremendous expansion over the past three decades, expanding into several academic domains. Nevertheless, this development takes the formalization of the agility concept lightly, disregarding the required theoretical rigor. This statement was reinforced by the fact that around 30 percent of the documents within the data have employed theoretical approaches as the basis for their premises and findings. In addition, it is evident that the concept has enormous potential for advancing theory as the importance of rapid response to disruptions increases. To this purpose, adopting theoretical perspectives related to the four major trends provided in the article could extend the knowledge about agility. Besides that, the article discusses five other future research streams involving supply chain agility, how dynamic capabilities relate to agility within specific contexts (i.e., industry, country), how culture influences agility deployment, the role of knowledge management in building agility, and how agility and strategy interplay.

Conclusion

The present essay aimed to investigate the ontology and epistemology of agility. By mapping the evolution of the concept and its foundations between 1991 and 2021, the concept's positioning in the research domain was established, providing the basis to propose future research. However, as in many investigations, this essay was not devoid of limitations.

Although the data retrieved is extensive, it is incomplete, and some relevant documents can be missed. Another limitation is the subjectivity of the analysis of clustering due to MDS and factor analysis, which can bring some bias to the interpretations.

ESSAY 2 - WHAT IS AGILITY? ADDRESSING THE ESSENCE OF THE AGILITY CONSTRUCT

Abstract

Agility has gained managerial relevance in the last three decades in light of the profound transformations in the world economy. Surprisingly, it has not received sufficient research attention. Studies that are published on agility have not defined it comprehensively. In this essay, we explore the use of the agility construct in the literature over the past decades to evaluate the concept's internal consistency to bring greater clarity to agility's meaning. We do so by systematically reviewing 196 articles from top-ranked academic journals. We propose an integrative multilevel framework that shows the antecedents and the outcomes of the agility formation process. We discuss our findings and offer suggestions for future research.

Introduction

Building and implementing a sustainable competitive advantage is the essence of competitive strategy (Porter, 1996). However, executing it for improved market performance is difficult in turbulent environments (Eisenhardt & Brown, 1998). Agility has become increasingly crucial for competitive success in the current business environment since it represents a firm's ability to timely sense and quickly respond to environmental changes and do so continuously. As a result, the growing interest of practitioners and researchers in agility has led to a large and diverse literature. Since its first conceptualization as a manufacturing ability (Nagel & Dove, 1991), and during the last three decades, agility has evolved from a structural advantage to a strategic competitive advantage in highly uncertain and turbulent environments (Teece, Peteraf, & Leih, 2016). For example, a recent McKinsey survey with 22 organizations across six business sectors implementing agile processes showed that they improved customer satisfaction, employee engagement, and operational and financial performance (Aghina et al., 2020). Several recent

studies brought new theoretical perspectives, developed conceptual models, and conducted empirical research to extend the understanding of agility (Pinho et al., 2022).

Although scholars have shown interest in agility, their studies have failed to provide theoretical coherence and guidance for a systematic research program on agility (Singh et al., 2013). These studies have remained ambiguous and fuzzy due to several reasons. These include broad and sometimes divergent definitions; issues of clarity in the research object and context, leading to a lack of comparability of the research results; confusion between agility and its antecedents and outcomes; lack of specificity about agility referents affecting the definition of the levels of analysis; and, a failure in the measurement of the construct itself (Pinho et al., 2022). Moreover, several terms have been used interchangeably with agility (i.e., responsiveness, flexibility, and adaptability), producing confounds (Fayezi, Zutshi, & O'Loughlin, 2017).

In this essay, we aim to contribute to a better comprehension of the meaning and positioning of the agility construct by theorizing through a review of the critical literature published in the last ten years in the top-ranked journals. To provide a clear sense-making of the meaning of the agility phenomenon, we apply the normative prescription suggested by Suddaby (2010), capturing and analyzing the four dimensions that constitute the essence of the construct from our reviewed articles. Following Suddaby, we first searched for common elements in agility definitions in different contexts. This process resulted in several diverse common facets of agility. Applying the semantic analysis to this set of facets, we synthesized the expansive representations of agility into its main facets and then into a conceptual framework, resulting in a parsimonious definition of agility that captures its essential properties and avoids tautologies. Second, we captured the scope conditions through which agility is performed, explicating its scopes of use, duration, and values (Bacharach, 1989). Third, we analyzed the referential relationships of agility

with other constructs (i.e., flexibility, adaptability), capturing similarities and explaining their differences. Finally, to provide coherence to our findings, we captured the multiple attributes through which agility is built and operates.

Our normative investigation suggests that agility is the organizational ability of timely sensing and quickly and effectively responding to environmental changes. Building on this definition of agility, its scope conditions, and contexts of performance, we propose an integrative framework that sheds light on the underlying dimensions of agility, its multilevel antecedents, the contextual factors that affect agility, and the outcomes of performing in agile ways. Our research on agility answers two questions. First, by examining its conceptual evolution, we identify agility's main facets, mapping the main contexts in which agility is applied within organizations. From this mapping of facets and contexts, we develop a clear sense of what agility is. Second, building on this theoretical clarification of agility, we discuss how agility works within organizations, providing an integrative and nomological framework to the construct.

By answering these questions, the present study offers at least three contributions to the literature. First, providing conceptual clarity of the agility construct enables the systematic development of future agility research. In doing so, it also provides guidance for practitioners. Second, it contributes to agility research by analyzing and synthesizing observations from several streams and providing an integrative framework, which can be used as a venue for future research. Finally, research boundaries of the agility construct emerge from the building blocks of our conceptual framework, which could guide future work.

The remainder of this essay is organized as follows. We first present and discuss the evolutionary path of the agility concept. We then present the methodological approach used. Next, we analyze and discuss the main facets within the previous conceptualizations according to

Suddaby's (2010) normative prescriptions. From our theorizing, we then propose an integrative framework, adopting a multidimensional approach. Building on the previous sections, we finally present several venues for future research to enlarge the body of knowledge on agility.

Agility's Evolution as a Concept

In the earlier business literature, agility has been associated with manufacturing industries seeking new strategies to overcome the challenge of global competition. In this context, agility meant the ability of firms to quickly adapt their production systems to respond to changes in customers' needs. Several studies focused on drivers and outcomes of agility, discussing the firm's ability to reconfigure its resources and structure to respond to fast-changing markets. Becoming agile was viewed as a source of competitive advantage (Pinho et al., 2022; Teece et al., 2016).

In the early 2000s, supply chain agility rose to prominence as a source of competitive advantage in turbulent and uncertain global environments (Christopher, 2000b). Scholars incorporated other features into the conceptualization of agility (i.e., speed, flexibility, and responsiveness), expanding its scope to include knowledge management, integration of information systems, and using partnerships with suppliers as antecedents of agility. For example, the term agility was applied to project management contexts, spreading its use to other areas of the value chain. However, this wider use of agility led to misunderstandings about its definition and lack of precision in its use (Conforto & Amaral, 2016).

The financial crisis of 2008 brought new momentum to agility research since firms shifted their attention to mechanisms and response strategies under circumstances of great environmental uncertainty and turbulence. Scholars focused their research on the external (i.e., partnerships and networks) and internal (i.e., new products and services design, innovation) antecedents of agility (Tavani, Sharifi, & Ismail, 2014). The studies on supply chain agility were amplified, shedding

light on the central role of strategic and operational alignment and integration with core suppliers (Qrunfleh & Tarafdar, 2013). The agility research context also shifted from a single firm-level to a network-level (Yang & Liu, 2012). In the agile project management literature, several authors described the practices, techniques, and tools applied in the development of software. One study argued that firms should develop new products and innovate to respond quickly to uncertainty and turbulence through self-managed and cross-functional teams within projects, called agile teams (Annosi, Foss, & Martini, 2020). Scholars also emphasized the core role of learning and knowledge management in achieving a higher performance of agile teams (Sheffield & Lemétayer, 2013).

The COVID-19 pandemic increased interest in agility research, reflecting the willingness of scholars to understand the phenomenon of the expansion of agile performance by firms in uncertain and turbulent environments. Several empirical studies shed light on how agility might operate in the different parts of the value chain, such as strategy, project design and management, product development, innovation, marketing, and supply chain, and the relationships that arise between these activities. Additionally, empirical tests were conducted to better understand how firms can become agile, mapping the antecedents, enablers, and mechanisms due to this transformational process (e.g., Shams et al., 2021; Swafford, Ghosh, & Murthy, 2006). Even with this increased interest in agility, its definition remained fuzzy, often leaving its interpretation to the reader when applied across a broad range of organizational contexts. Table 1 shows the different contexts within which agility has been studied in business and management fields and some exemplars of its definitions and authors. Some scholars have emphasized that this profusion of literature has led to a lack of a coherent typology or theory of agility's meaning (i.e., what it is)

and significance (i.e., why it matters), undermining the development of a systematic program of research (Singh et al., 2013).

Table 1 – Different representations of Agility, Definitions, and Exemplars

Representations of Agility	Examples of Definitions	Exemplars
Agile co-creation of services	Agility encompasses the features of flexibility, velocity, learning, response to change, and leanness in close collaboration with customers.	Sjodin et al. (2020)
Agile Decision Making	A firm can quickly shift its development focus to incorporate new technology into its product line.	Kock & Gemunden (2016)
Agile Human Resource	An operational strategy to minimize waste and optimize the flow of value to the organizational's customers.	McMackin & Heffernan (2021)
Agile Manufacturing	Agility, as a capability, entails the exploitation of existing internal and external firm-specific capabilities, developing new ones, and renewing them to respond to shifts in the business environment. It emphasizes the importance of adapting, responding to changing market conditions, and rapidly improving manufacturing lead time.	Tavani et al. (2014); Awan et al. (2022)
Agile new product development	Agile refers to a family of iterative software development methods, including different tools and techniques pertaining to the technical, management, customer collaboration, organization, and team.	Bianchi et al. (2020)
Agile Practices	Agility is the capability of firms to detect changes in their business environment and reconfigure their resources, processes, and strategies to rapid responses to a changing environment.	Geyi et al. (2020); Qi et al. (2020)
Agile Project Management	The continual readiness to rapidly or inherently create change, proactively or reactively embrace change, and learn from change. Agile projects are defined as composed of team autonomy, team diversity, incremental development, and agile communication	Sheffield & Lemétayer (2013); Serrador & Pinto (2015) Malik et al. (2021)
Agile Teams	Agility is the project team's ability to quickly change the project plan as a response to customer or stakeholder needs and market or technology demands in order to achieve better project and product performance in an innovative and dynamic project environment.	Conforto et al. (2016)
Agile Workforce/Employee	Employee agility is characterized by the ability to perform fast learning processes within as well as across a variety of experiences inside and outside the organization, including flexible navigation between different ideas and their implementation in the organizational context.	Salmen & Festinig (2021)
Human Resource Agility Performance	It refers to the ability of an employee to react and adapt to changes promptly and appropriately and take advantage of changes to benefit his/her firm.	Cai et al. (2018)
Business Model Agility	Agility refers to responsiveness, flexibility, and speed.	Alberti-Alhtaybat (2019)
Business Unit Agility	The ability of the Business Unit to respond to disruptive, sudden, and unexpected market events with ease, speed, and dexterity	Queiroz et al. (2022)
Customer Agility	Agility is about being able to efficiently and effectively redeploy organizational resources to value-creating and value protecting higher-yield activities as warranted by internal and external circumstance	Hajli et al. (2020)
Digital Agility	Agility is the organizational ability to sense and respond	Grover (2022)
Government Agility	Agility is responding to changing public needs in an efficient way.	Mergel et al. (2021)
Innovation Agility	Organizational innovation agility is how nimble a firm is in its translation process from ideation to implementation.	Carmelo & Dothan (2017)
Inventory Agility	The extent to which a firm quickly adjusts its relative inventory level to meet changing demand realities, thus avoiding inventory underage and overage.	Udenio et al. (2018)
Learning Agility	Learning agility, a relatively new construct borrowed from the area of organizational behavior, refers to the desire and ability to rapidly learn to respond to changes.	Carmeli et al. (2021)
Marketing Agility	Market agility is the firm-wide ability to stay alert to changes that occur in the dynamic business environment and quickly deploy resources to respond creatively.	Zhou et al. (2019); Li et al. (2021)
Operational Agility	Operational agility refers to the ability to sense and execute the identification and implementation of business opportunities quickly, accurately, and cost-efficiently, and is an important determinant for the success of the firm.	Huang et al. (2014); Akhtar et al. (2018)
Organizational Agility	Organizational agility is defined as an organization's ability to (1) respond to changes in its external environment; (2) detect and seize market opportunities efficiently and effectively.	Fayezi et al. (2015); Cegarra-Navarro et al. (2016); Teece et al. (2016); Cai et al. (2019)
Post-Merger and Acquisition Agility	Agility is the ability to continuously adjust and adapt the core business strategic direction as a function of strategic ambitions and changing circumstances. Agility has been referred to as one of the key capabilities companies have to change quickly and adjust to changing business environments.	Khan et al. (2020)
Social Media Agility	a multidimensional construct composed of two critical constructs: internal and external social media agility rooted in the micro and macro environment, defined as the ability of firms to use social media to cope with demands and changes.	Chuang (2020)
Strategic Agility	Strategic agility is the organizational ability to continuously adjust and adapt strategic direction in the core business as a function of strategic ambitions and changing circumstances and create not just new products and services but also new business models and innovative ways to create value for a company.	Vecchiato (2015); Arbussa et al. (2017); Cumming et al. (2020)
Supply Chain Agility	Agility refers to the capability of a supply chain to be alert and respond to sudden changes in demand or supply.	Li, Wu, & Holsapple (2015); Gligor et al. (2020); Sturm et al. (2021)

Methodological Procedures

We conducted a systematic literature review of 196 articles published in top-tier journals in the last ten years (2013-2022), following four main phases, as shown in Figure 1.

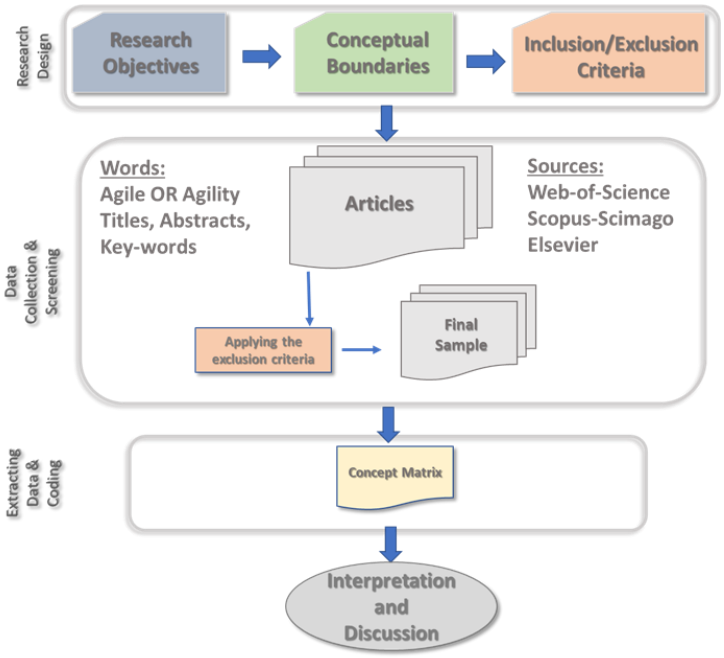

Figure 1 -Flowchart with the stages of the literature review.

We began with setting the boundary conditions for the study by refining the data collection and screening stages. As we searched for how agility has been defined, its scope, and its positioning in scholarly research, we decided to retrieve only published articles, not scholarly reviews. We focused on articles referring to "agile" or "agility" thinking and management, considering documents from different contexts (i.e., strategic or operational) and research focus (i.e., manufacturing, project management, or supply chain). To provide guidance and quality in retrieving and screening initial data, we created an inclusion/exclusion criterion (Appendix 1). As a high-quality review on a subject demands a well-structured process in selecting which journals will be included in the study, we applied the h-index provided by Scopus-Scimago as a measure of the quality of the journals (Vanclay, 2007). We adopted 100 as the h-index cutoff level for

journals from the following databanks (areas): Clarivate-Web-of-Science (Business and Management), Scopus-Scimago (Business, Management & Accounting), and Sage Journals (Management & Organizational Studies). Applying these criteria, we created a list of the top-ranked academic journals which published studies about agility. We included articles from journals that are not listed in the cited lists but were also relevant for other reasons, searching for highly cited ones using Publish and Perish. We also included highly cited articles from widely recognized journals with a more practical approach, such as California Management Review, MIT Sloan Management Review, and Harvard Business Review. Following our inclusion/exclusion, we extracted data from the databases within the last ten years (2013-2022) due to the huge increase in published articles about agility during this period (Pinho et al., 2022).

In the third phase, we extracted and codified data. The main output of this stage was a table with the main classification variables of interest. Three scholars carefully read each article to codify the sample articles. A consolidated table was prepared as the result of comparing the three tables with the support of MS-Excel. Differences were discussed to achieve consensus. The inter-reliability of the results was checked by calculating Krippendorff's Alpha (Danese, Manfè, & Romano, 2018). The consolidated table (Appendix 1) contains several entries for each article, including the name(s) of the author(s), paper title, journal title, volume and issue, year of publication, research focus, research methodology (qualitative or quantitative), what method was used, if it is conceptual or empirical research, research type (exploratory, theory building or theory testing), in case of empirical study if it is single or multi-country, and the country(ies) in which the study occurred. Due to our research objectives, we also collected the agility definition, the scope of use, the unit of analysis, constructs (antecedents and measures of agility), and the

positioning of agility in the framework used in each paper (antecedent, output, mediator, moderator).

The final table containing the data extracted by the coding procedure was used to provide information about the different definitions used, the scope conditions under which agility was applied, the main contexts and measurements used, and the agility's conceptual distinctions from and relationships with, other constructs (i.e., flexibility, responsiveness). The analysis of this raw data provided the basis for clarifying the agility construct and building an integrative framework.

Clarifying Agility as a Construct

As unobservable conceptual abstractions, constructs are created by researchers for a special scientific purpose, representing a logical building of the phenomenon the construct is construed to represent. (Podsakoff, Mackenzie, & Podsakoff, 2016; Suddaby, 2011). How a theorist conceptualizes a construct's ontology (what it is) reflects its epistemology (what we know about it). A shift in ontology must be accompanied by a shift in epistemology (Shepherd & Suddaby, 2016). In research, the construct is a source of agency or causality. Accordingly, it is essential for researchers to clearly state the construct and its relationship with the phenomenon studied, providing clear definitions and boundary conditions or contexts of its application. According to Suddaby (2010), the core of construct clarity consists of four fundamental components. First, definitions are considered vital. Clarifying a construct requires the application of language to create a precise and parsimonious definition, providing categorical distinctions between concepts. Construct clarity also demands scholars to clearly characterize the contextual and scope conditions in which the construct is used. It is important for authors to show the scope of their constructs' relationships with other, associated constructs. Finally, researchers must establish the coherence of the construct with respect to a larger theoretical argument.

Clearly framing the agility definition

In our search for a strong and clear definition of agility (Bacharach, 1989), we created a corpus with the support of N-Vivo 12 containing the definitions extracted from each article of our dataset. The initial corpus was comprised of 710 different words. This corpus was refined by excluding several unimportant words (i.e., next, four, fourth), allowing us to focus on the important words instead; 590 words were left. We then grouped words used with the same meaning (e.g., corporation, firm, and organization; ability and capability; fastly, quickly, rapidly, and speedily) and removed agility and agile since they were the core focus of our research. This final step resulted in a corpus of 502 words, accounting for 2505 occurrences among 196 articles that comprised our dataset. This number of words suggested a highly fragmented and dispersed corpus of word tokens used to define agility. This can be attributed to the fact that several definitions consider the contexts in which agility is employed, while others include specific antecedents and outcomes of agility.

In our attempt to clarify the definition of agility, we followed natural language processing (NLP) techniques, as suggested by Manning & Schutze (1999). First, we calculated the weighted relative frequency of our corpus's words by dividing each word frequency by the total occurrences of all words. The weighted relative frequency of occurrence is commonly used to infer the relative importance of word tokens within a text. Overall, 32 words tokens of our corpus account for slightly over half the accumulated relative frequency of words token in our corpus (52.89% of 502 words), being considered relevant in understanding the subject of the corpus. An interesting feature of our corpus is that 229 word-tokens appear just once, accounting for 9.14% of all the relative weight frequency. As part of this step, we empirically tested the goodness of fit statistics of the

statistical distribution of all weighted percentages of the word-tokens of our corpus, applying Zipf's law[1].

Next, we built a scatterplot of the 32 most used words to represent agility (Figure 2). To support our interpretation of the words presented in the agility definitions, we plotted the dendrograms of cluster analysis of the most used word tokens of the corpus based on their similarities with the support of N-Vivo. Our analysis of the scatterplot resulted in a framework through which we built our clarification and simplification of agility's construct definition (Figure 3).

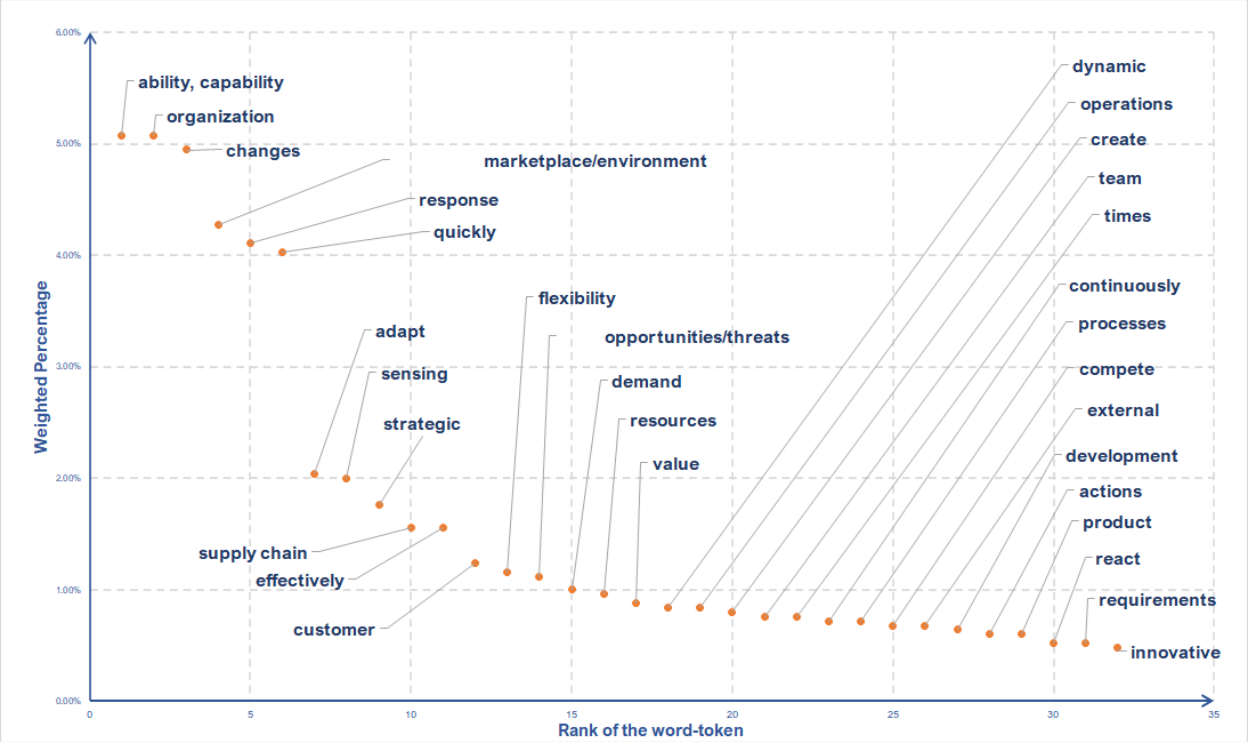

Figure 2 - 32 words of the definitions' corpus with the highest relative occurrence.

[1] Zipf's law states that the frequency of a word-token in a corpus is directly proportional to its position (or rank) in a sorted list. By plotting frequency versus ranking using logarithmic scales, we can check the fit of the word-tokens to our corpus (Powers, 1998).

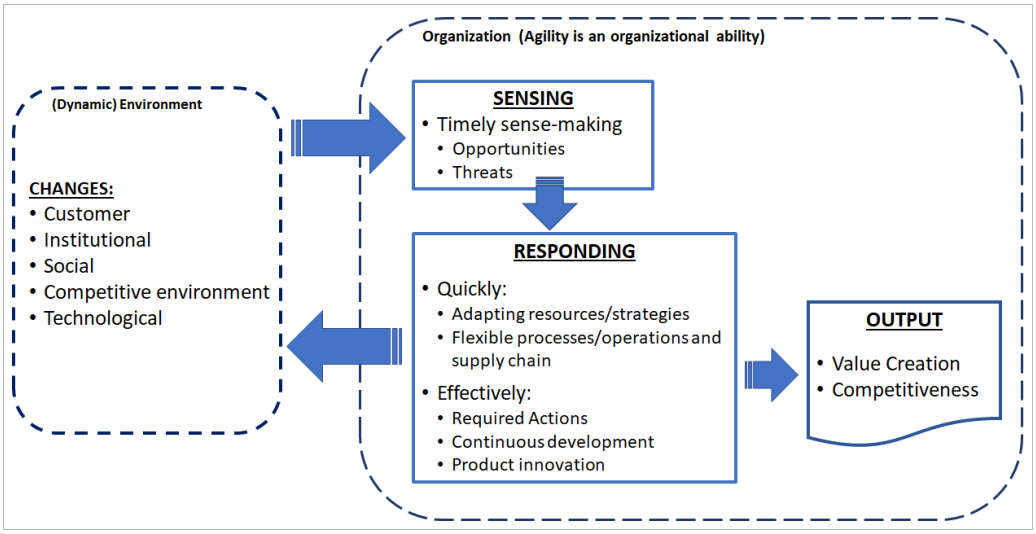

Figure 3 – A Framework for the Agility Concept based on the most cited word-tokens.

Agility as an organizational ability

The terms "ability/capability," "organizational," and "changes" compound a first and detached group, considering the relative frequency analysis of our corpus of 196 definitions (Figure 2). At first glance, these results suggest that agility is "an organizational ability." The word-token "ability" (or "capability") occurs at least once in 67.1% of our corpus, showing agility as an ability for 44.0% of the articles of our dataset and a capability for 23.1% of the articles, no matter the context (i.e., organizational, supply chain) or the level of analysis (i.e., firm, team, workforce). Another important feature that emerges from our analysis is that 65% of the authors in our sample identify organizations (or firms or businesses or enterprises) as the holders of agility. Depending on the context of the analysis, some authors describe distinct agile holders, such as teams and decision-makers. However, even when the unit of study is not the organization, more than a third of the authors identify agility as an organizational ability or capability, suggesting that agility is an "organizational ability."

Environmental dynamics as the stimuli of agility

Agility is performed after its agent perceives changes in the organization's surroundings. The weight percentage analysis indicates that the term "environment" is strongly associated with "changes" in the definitions. This strong association suggests that organizations deploy agility to respond to changes in the external environment (Felipe et al., 2016) or in the business environment (Battistella et al., 2017). Those environmental changes also encompass different agents, such as consumers (i.e., preferences and demand for products or services), industries (i.e., technological and competitive bases), and institutions (Chakravarty et al., 2013).

What is agility for

"Sensing" and "responding" are the word-tokens that represent agility when organizations deal with environmental changes. To be agile in their responses, firms need to "timely sense" the environment and become aware of changes and configure opportunities to take advantage of those changes (Zhou, Mavondo, & Saunders, 2019) or remediate threats (Liang et al., 2017).

Two qualifiers help us to understand how responses are built – quickly and effectively. "Response" appears in 103 definitions in our corpus, 86 times as the action associated with agility; that is, agility being a "response to sudden changes in supply" (Gligor, 2014), "response to changes" (Oliva et al., 2019), or "responsiveness to market change" (Nath & Agrawal, 2020). However, agility means not only responding but responding "quickly" (89.5% of the corpus) and "effectively" (30% of the corpus) to environmental changes. This difference between the appearance of qualifiers in definitions suggests that scholars have been less interested in how effective the employment of agility has been, opening new venues for research. Besides the qualifiers of response, our analysis also shows how the responses are played.

Firms can quickly respond to changes if they are able to "adapt" (or reconfigure) the "resources" or "strategies" (Akter et al., 2022). Flexible processes, operations, supply chains, and business models are also considered core to achieving rapid responses (Oliva et al., 2019; Olsson & Aronsson, 2015). When use is linked to response, "effectively" means that being agile is not sufficient; firms need to respond not only quickly but also effectively (Gligor, Esmark, & Holocomb, 2015; Prange, 2021a). As response demands actions, being effective means taking the "required" and accurate "actions" (Lee et al., 2015). Moreover, as turbulence and uncertainty do not cease (Teece, Peteraf, & Leih, 2016), continuous improvement ("development") and innovation are core to enabling effective responses from firms (Darvishmotevali, Altinay, & Köseoglu, 2020; Tam et al., 2020).

What are the main outputs of performing with agility?

In answering the question, "what are the outcomes of performing with agility?" we noticed that the corpus is comprised of definitions related to the employment of agility by different actors in different contexts. Several definitions point to value-adding (Yusuf et al., 2014), value-capturing (Teece, Peteraf, & Leih, 2016), and value-creation (Hussain & Malik, 2022) as outputs of agility. Another output derived from our analysis suggests that agility allows firms to increase their competitiveness (Gao et al., 2020).

Proposed Definition and Theorization of Agility as a Construct

As a result of the previous discussion, we propose the following definition for agility: "*Agility is the organizational ability to timely sense and quickly and effectively respond to environmental changes."* This definition comprises all the elements of a good definition (Suddaby, 2010), capturing the concept's essential features, avoiding tautology or circularity, and being parsimonious. It also provides the core of agility, clearly stating what agility is. Being agile is not

only about timely sensing and quickly responding to changes. It is most of all taking all measures to make this response effective in achieving the firm's aimed goals – competitiveness, and performance. Three features of this definition deserve further discussion: changes, sensing, and responding.

Agility materializes due to changes in the external environment. Although it is considered an organizational ability, agility can be displayed at different levels within the organization, such as strategic (i.e., marketing, product or service adaptation or innovation) and operational (i.e., manufacturing, supply chain, project management) by different actors (e.g., individuals, teams). Accordingly, scholars have been theorizing about the use of agility in different processes and contexts within the organization, such as decision-making, project management, new product developments, and business models. All those studies depart from changes in the environment in which those processes and contexts are embedded.

Environmental changes are the main stimuli that trigger agility use. We can categorize these changes according to their agents and their nature. Changes are associated with six external sources – customer requirements, value chains, competition bases, technological developments, economic shifts, and institutional changes (Vecchiato, 2015). Customers can challenge the status quo of an organization by changing the products/services they need or their levels of demand. The value chain can be affected by unexpected events (e.g., Covid-19), making it difficult to meet the level of customers' demands for products or services. Competitors' acts can also cause changes in the competitive landscape, demanding a quick reaction from firms. Technological developments can also lead to changes in a firm's industry. For example, Tesla has changed the global automotive industry by introducing a new concept of electric vehicles on a large scale and surprising its competitors. Another category of agent changes is related to economic shifts, such as the global

economic recession due to the 2008 financial crisis. Similarly, social context, law, and regulation can bring relevant changes to the institutional environment in which firms are embedded. Although most of these sources are relevant to firms, their relative relevance can vary across industries and time. Nevertheless, to compete in the contemporary environment, firms must develop expertise in the abilities needed to assess and timely sense these changes, such as business intelligence, information systems, and data analytics. Additionally, changes can be classified according to their nature, based on how they are perceived by firms as threats or opportunities. Depending on the nature of the change, organizations will respond accordingly. The use of agility has helped organizations to challenge potential threats or take advantage of opportunities, increasing their competitiveness and creating value. For example, downturns in the overall economy or the entrance of new competitors using new technology can be classified as threats. On the other hand, the increase in customers' requirements, such as customization and quality expectations, is considered an opportunity. However, to take action toward changes, agile firms should timely sense the changes in order to be able to respond.

Sensing demands that firms use different abilities for each type of change. Although every employee may contribute to sensing, and sharing valuable information through scanning, being timely and effective in detecting relevant changes may demand more specialized staff. For example, a firm may need robust market intelligence capability to monitor the activities of rivals, shifts in customer tastes and needs, and changes due to economic shifts. Market intelligence is founded on two complementary abilities - information systems and data analysis, demanding that firms develop these abilities. Similarly, to anticipate legal and regulatory issues, firms may need to create a formal function to deal with governments and legal structures. Once changes have been timely sensed, responding follows.

Agile responses can be induced either by changes in average conditions or by changes in the variability of extreme events in the business environment. In the first case, the change is not extreme. Usually, it falls within the coping range of responses, mainly through exploitation, adapting, and improving upon competencies, technologies, and knowledge that firms already have. Two main capabilities are core in using agility through exploitation – flexibility and adaptability. While flexibility provides a buffer in the form of operational and strategic options, adaptability enables the application of those options. However, when changes are abrupt and outside this coping range, firms need to respond through exploration, experimenting with new alternatives, and quickly acquiring the necessary knowledge and technology to implement the designed responses (March, 1991). In this case, some abilities are key, such as knowledge management (R&D), learning, and absorptive capacity (Lichtenthaler & Lichtenthaler, 2009). To be effective in their responses, organizations must be able to shift from a current-state to a planned future state by shaping the required actions through exploitation or exploration. Most of these actions involve incremental changes and are built by cooperation between the organizational units involved and coordinated through information sharing and activity controlling. To measure the effectiveness of responding to changes, firms must continue sensing the environment to ensure that the planned results are achieved.

Scope Conditions

Organizational constructs (i.e., agility) are highly sensitive to contexts. For example, as agility performance comprises a sequence of sensing and responding to changes, researchers must define the time scope of their studies when analyzing agility performance. According to Bacharach (1989), there are three scope conditions: space, time, and values. Our analysis of these scope conditions aims to capture the features of agility as socially constructed and contextually specific,

which demand from researchers a clear acknowledgment of the spatial and temporal parameters associated with their studies.

Space Scope

Space scope refers to where the construct is located, whether it is transferrable or generalizable, and the extent to which it can be transferred to other settings. This speaks to what the unit of analysis is and how it is represented. As agility refers to the ability to respond quickly to environmental changes, several studies have analyzed the impacts of the changes and how the responses occur within different contexts, such as the organization itself, its strategy and business models (including partnerships, collaboration, and acquisitions), business units, manufacturing plants, projects (including innovation and product development), and teams. Accordingly, scholars have used different labels for agility when describing agility as a place in the value chain (i.e., organizational, strategic, supply chain, human resource, manufacturing) or associating agile as a qualifier of the unit of analysis of their studies – individual or collective. In our review, we captured the space scope associated with the different labels of agility and the respective unit of analysis adopted.

The examination of the research conducted on agility (Table 2) shows that scholars have mostly adopted a firm level of analysis to explore the role of agility as an antecedent, a mediator, or an outcome. Moreover, we also observe that agility has a very well-placed scope, mostly associated with the contexts of organizations – large enterprises, small and medium enterprises - SMEs, non-governmental (NGOs), and governmental entities. Accordingly, agile teams and projects are mostly analyzed using teams as the unit of analysis (Burga et al., 2022; Tam et al., 2020). These findings show that agility is generalizable and may be transferred across different contexts and, through different levels of analysis, observed in other boundary conditions.

Table 2 – The Labels of Agility and levels of Analysis.

Label of Agility	Number of Articles	Level of Analysis				
		Firm	Business Unit	Project	Team	Individual
Supply Chain Agility	55	x				
Organizational Agility	46	x				
Strategic Agility	32	x		x	x	
Agile project development/management	16	x		x	x	
Agile Manufacturing	5	x				
Agile teams	5	x		x		
Marketing Agility	5	x				
Agile Practices	4	x				
Agile working/employee	3					x
Operational Agility	3	x				
Agile Decision Making	2	x				
Agile new product development	2	x				
Agility Human Resource	3	x				
Agile co-creation of services	1	x				
Agile Transformation	1	x				
Agility in Business Models	1	x				
Agility in incident responses	1	x				
Agility Product Performance	1	x				
Business Unit Agility	1		x			
Contextual Agility	1	x				
Customer Agility	1	x				
Digital agility	1	x				
Government Agility	1	x				
Innovation Agility	1	x				
Inventory Agility	1	x				
Learning Agility	1	x				
Post-Merge &Acquisition Agility	1	x				
Social Media Agility	1	x				

Time scope of agility

Time scope explains how efficiently the firm can sense the changes and how quickly it responds to changes. Some authors argue that the degree of the firms' agility can be measured by the timeliness of sensing and the timeliness and quickness of the responses. Speed is key here. To take advantage of an opportunity or avoid a threat, the agility agents must move fast and efficiently

from an initial configuration toward a new state of the desired configuration. Although there is a trend of actors playing agility under the perspective that all responses are fostered at high speed, some environmental contexts require responses at a lower speed to fit the environmental requirements – agility as slowness (Prange, 2021). Accordingly, temporal boundaries are especially critical in agility research, mainly for agility's empirical applications. The main feature of agility is that the effects of the response to change tend to cease as soon as activities achieve a planned new state. Agility tends to act during the transient phase between the states. However, this speed can vary according to the causes of change (i.e., a new technology, regulatory change, competitor's move, etc.) and the industry. For example, a quick response in aircraft manufacturing may not be quick enough in the mobile phone industry. Moreover, in some complex environments, the development and application of actions due to response happen while other changes are still occurring. This feature demands that the agility agent would keep sensing the environment while acting to ensure the effectiveness of the response. As an ability that acts between the states, agility tends to depend on the previous state to be applied. Then, the temporal scope will reflect responses within short-term and long-term frames, comprised of several short periods interactively and continuously performing agile moves from one state to another until the desired end state is achieved. This time scope is aligned with the arguments that agility is a path-dependent ability since it evolves due to the process's history (Staber & Sydow, 2002), requiring firms to change and adapt to contingencies while being agile.

Value scope of the agility construct

Value scope deals with the hidden assumptions that researchers bring to theorizing a construct. Suddaby (2010) suggests that authors must clarify their hunches to readers, reflecting on their points of view and hypotheses. One interesting feature of the literature on agility is that

most authors have studied agility in the context of their mainstream research, such as Serrador (project management), Lewis (paradox theory), Teece (dynamic capabilities), and Gligor (supply chain). This critical perspective reinforces the need and relevance of studies that can guide building agility as a unified and generalizable construct. Several researchers on agility do not explicitly indicate their taken-for-granted assumptions and provide critical reflexivity on how these assumptions introduce limitations, bias, and distortion into their studies' agility applications. For example, the recent expansion of the agility literature brought together several empirical studies in single countries (e.g., Cegarra-Navarro, Soto-Acosta, & Wensley, 2016; Dubey et al., 2018) and in multiple countries (e.g., Kaufmann, Kock, & Georg, 2020; Wieland & Wallenburg, 2013). However, those studies do not discuss the impact of the cultural environment on how agility is performed, assuming the invariance of agility through different cultural contexts.

Agility's Relationships with other constructs

The research on agility has been built interchangeably using other constructs. In fact, several facets of agility are strongly related to other concepts in management theory, many of which have informed theorizing on agility, such as dynamic capabilities, strategic flexibility, responsiveness, and adaptability. The clarification of agility demands drawing out these relations, contrasting, comparing, and clarifying the discriminant differences from those constructs to agility.

Dynamic capabilities describe a firm's ability to integrate, build, reconfigure, share, and combine internal and external resources and capabilities to address rapidly changing environments and maintain competitiveness (Teece, 2007). Dynamic capabilities theory is the most applied in the empirical studies of our dataset to inform and test theoretical frameworks about agility. Although dynamic capabilities share many similarities with agility, including sensing and reconfiguring the resources and addressing (responding to) environmental changes, dynamic

capabilities are much broader. While agility refers to the core processes of sensing and responding to environmental changes, dynamic capabilities are present in all types of processes within the organization. Teece, Peteraf, & Leih (2016) reinforce this difference, stating that strong dynamics capabilities enhance organizational agility.

Flexibility, a term also developed in manufacturing, is considered an ability to respond to changing circumstances (Gerwin, 1987). Research on flexibility has also suffered from a lack of consensus on definition and difficulties in developing valid and reliable measures. According to Bernardes and Hanna (2009), flexibility has been associated with the features of adaptability and adjustment of a system, processes, and routines to attend to customers' expectations and variations in demand. Flexibility has also been theorized as strategic (Brozovic, 2018). According to this perspective, flexibility provides firms with a buffer of resources and strategic options, allowing them to respond to changes. Then, flexibility denotes a prospective capability that is put in place to satisfy customers' existing or latent needs, being perceived as a means rather than an end in itself (Bernardes & Hanna, 2009). Even when considering its strategic component (pre-design strategic options), flexibility is an inherent property of the existing physical systems, allowing firms to adapt their systems to new circumstances while maintaining their current configuration settings. Differently, agility is considered a business-level paradigm, an approach used at the organizational level to respond quickly to more than operational or strategic changes by resetting the configuration of the systems. Nevertheless, flexibility appears as a component of agility in our table of word-tokens from definitions, being used as an enabler of agility.

Responsiveness has been conceptualized as the ability of manufacturing, logistics, and supply chain systems to respond to "customers' requests and needs, timely adapting the output (Richey et al., 2022). The management literature associates responsiveness with changing the

organizational strategy to match opportunities and threats (Weick, 1989), denoting a reactive response to environmental changes. In addition, responsiveness is considered a time-based approach. However, we argue that agility differs from responsiveness because while responsiveness is a behavior or the act of being prepared to respond, agility incorporates "response" as the intrinsic action through which agility occurs in the presence of environmental changes. Bernardes & Hanna (2009) corroborate this view, labeling responsiveness as a propensity for behavior change and a performance outcome. To be agile, firms need to pursue a set of abilities that enables this propensity to the action or behavior of responding.

Adaptability refers to the ability to change (or be changed) to fit environmental changes (Dubey et al., 2018; Reeves & Deimler, 2011). In the management literature, adaptability originated from the contingency approach (Donaldson, 2001). Firms can adapt products, operations, business models, structures, and strategies to respond to environmental changes and circumstances. Then, adaptation emerges as one of the possible outcomes of responding to changes. A firm can use its flexibility buffer to adapt its production to customer demand changes. Doing so quickly, the firm is applying agility as the organizational paradigm.

Our work in this section provides a much better understanding of the agility concept through a cleaner and parsimonious definition, analyzing its constituents and scope conditions and comparing agility with other confounding constructs. However, Suddaby (2010) states that there is still a crucial task in demonstrating clarity, providing the coherence of the construct by drawing the main relationships between the concept and the other concepts that may be in its nomological network.

Integrative Framework

Over time, the conceptual and empirical developments of agility research have led to several interrelated attributes or dimensions. As a multidimensional construct, agility demands clarification of how it relates to these dimensions. The developments of agility through empirical studies provided us with numerous antecedents, mediators, moderators, and outcomes. In this section, we analyze those occurrences. Elaborating on the main features of those relationships, we draw an integrative framework for agility.

Agility in Empirical Settings

Our understanding of agility has increased due to empirical studies employing different methods (i.e., multiple-case studies, questionnaires, and surveys), covering several contexts (i.e., firms, supply chains, networks, teams) under the lens of distinct theories at different levels of analysis. This diverse set of investigations helps to bring reliability to agility construct, consolidating its meaning within the research field (Suddaby, 2010), delimiting the boundaries within which it has been applied, and providing sensemaking of its generalizability and enlightening venues to new research. We assess the agility concept by exploring its theoretical and conceptual positioning through 142 empirical articles within our data set. Among the theories informing agility within these articles, the most used are dynamic capabilities, resource-based view, contingency theory, absorptive capacity, and relational-based view. Some of this empirical work (122 pieces in total) have applied conceptual frameworks to measure how agility impacts and is impacted by other constructs. Almost half of them (59 articles) positions agility as a mediator, 22 as the independent variable, one as moderator, and 40 as the outcome. Our systematic analysis of this body of knowledge captured several antecedents, dimensions, mediators, moderators, and outcomes of agility. From the integrated analysis and integration of

results emerged the main building blocks of agility performance and its outcomes in a framework where commonalities among multilevel studies were consolidated. In our set of empirical studies, agility is generally represented as a firm level concept, capturing how firms perform it to respond to changes. However, the operationalization of the construct has been an issue in agility research.

One of the main causes of these operationalization problems is a poor definition of the concept (Podsakoff, Mackenzie, & Podsakoff, 2016). As scholars have applied agility in a broad space scope, using different definitions, conceptual frameworks, and measures to operationalize agility, some studies applied the measurement instruments without contextualization to the research settings. Other studies operationalize agility by measuring its antecedents, instead of its attributes, without realizing that they are measuring the level of 'preparedness' to be agile instead of the actual level of performing agility, leading to blurred results. To avoid the lack of reliability of the research, scholars should aim for precise definitions before focusing on measures, clearly specifying the context and the unit of analysis. Moreover, operationalizing demands a coherent positioning and measurements of the building blocks that frame the construct.

Proposing an integrative framework for Agility

Scholars have argued that agility manifests in several levels in an organization, such as elemental, which refers to an individual resource; micro, which refers to the collective agility of an organization; macro, which refers to inter-organizational agility (Yusuf, Sarhadi, & Gunasekaran, 1999). The development of agility as a multidimensional organizational ability has been supported by an increasing body of work, applying a large group of theoretical lenses to analyze empirical constructs. This empirical examination provides various antecedents, dimensions, mediators, moderators, and agility outcomes. Attempting to synthesize the most

important components of agility, I propose an integrative framework containing the main building blocks and outcomes (Figure 4). As an organizational ability, the framework presents a multilevel approach containing the environmental antecedents, the organizational antecedents, the process dimensions, and the outcomes of agility in place.

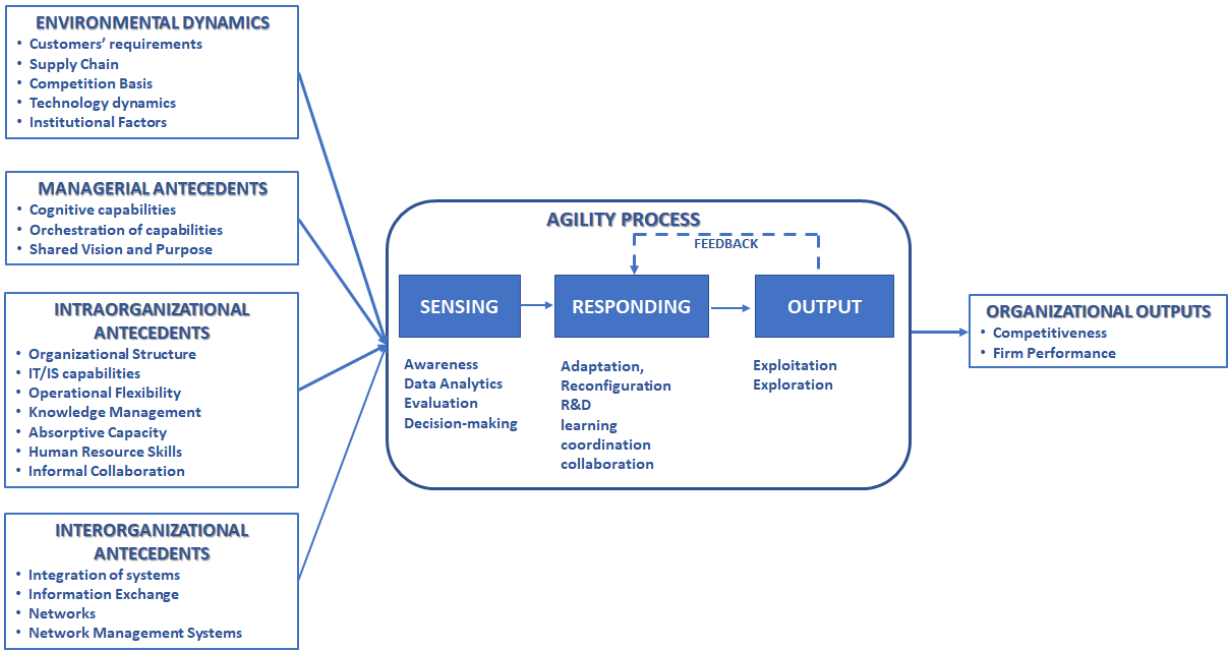

Figure 4 – Integrative Framework of Agility

Environmental Dynamics

As discussed previously, changes in the business environment are the main drivers of agility. Relevant forces of the external environment are considered sources of environmental dynamism, such as customer preference changes, the action of competitors, technological advancements, economic shifts, and institutional developments. Sensing those forces is core to agility, demanding organizations to develop, possess, and apply a set of intra- and inter-organizational capabilities. Top management also has an important role in building agility and addressing the application of these abilities for performing agility.

Organizational Level

At the organizational level, several elements are directly related to the ability of organizations to be agile. This bundle comprises elements due to its top management, leadership, strategic positioning, intra-organizational arrangements and capabilities, and relationships with other organizations outside the border of the organization. These features are the main antecedents of agility, providing the conditions for the organization to respond to changes.

Managerial and Strategic Antecedents of Agility

Agility building does not reside in any single capability. Still, it depends on the links of several individual abilities within the firm (Lengnick-Hall & Beck, 2009). Agility requires scanning the firm's business environment (i.e., customers, suppliers, competitors) to capture unexpected changes and manage under deep uncertainty due to the shifting competitive landscape. Managers should identify and use employees within the firm's boundaries as gatekeepers, building a matrixial information structure. Accordingly, larger firms have built information systems that allow tracing those changes by using big data analyses (Wamba et al., 2017). Although this business intelligence helps firms detect changes and turbulence, it is up to the top management to evaluate how firms will be affected and decide the response to address those changes. To recognize and address the issues that arise from those changes, managers need to pursue superior cognitive ability and a comprehensive framework, being an orchestrator that gives direction and coordination amongst activities and resources (Teece, Peteraf, & Leigh, 2016). This general and integrative framework allows them to cope quickly with complex, interdependent, and sometimes controversial subjects. Moreover, building agility requires leadership to dynamically create, extend or modify the ability of a firm to quickly act toward environmental changes. Furthermore, strategic decisions within agility demand top managers to

deal with multiple, often contradictory and competing demands, such as innovation and efficiency (Pereira et al., 2021), global and local demands (Fourné, Jansen, & Mom, 2014), or society and business outcomes (Ivory & Brooks, 2018). Thus, leadership should also be able to address the competing demands by identifying the rising tensions, avoiding traps of anxiety and quick but less effective solutions, communicating both/and visions to the organization, and dealing with both sides of the competing demands (Lewis, Andriopoulos, & Smith, 2014). Besides dealing with these contradictory features, organization's leadership has also to managing the firm's ability and skills applied to build agility.

In organizational agility, managers have a strategic role of coordination, creation, extension, adaptation, and combination of internal and external resources, capabilities, and skills, providing the strategic direction. Some scholars call this management capacity capitalizing ability (Battistella et al., 2017). This capitalization involves different organizational features, such as communication, collaboration, information technology (IT) capabilities, data analytics, and operational flexibility. Scholars argue that managers' cognitions influence this managerial role. Cognition refers to the individual's simplified mental representations of the world, encompassing the individual's knowledge and beliefs (Markóczy, 1997). An agile firm depends on top managers' superior cognition ability to succeed in turbulent and uncertain environments (Teece, Peteraf, & Leih, 2016). Complex environmental changes impede deliberate control. When confronted with changes, managers use their previous knowledge to format initial beliefs regarding them. As new information from suppliers and customers, among others, is continuously delivered by gatekeepers, managers tend to integrate them and update their cognitive patterns, shifting their mental representations. Then, managers shape a new shared mental template, which becomes the dominant logic applied in decision-making. This dominant

logic serves as an information filter for decisions across the firm (Prahalad & Bettis, 1986). Agility presumes faster changes in the dominant logic as the environment becomes more volatile and turbulent. In this context, the role of managers is to coordinate the strategic process of sensing the information and quickly formulating the response. To this end, clearly communicating to the workforce both the strategy and the context in which the organization is embedded contributes to building a shared vision and purpose (Dyer & Shafer, 2003) and enhances the employees' engagement and involvement in the decision-making process.

Due to the fast pace of changes in dynamic environments, involving employees in a quick decision-making process is critical to ensure the decisions' quality. Employees must be aware of and understand the organization's goals and objectives in order to be aligned and contribute to the decision-making process. Understanding the underlying logic and direction associated with responses toward changes, employees develop a shared mindset. These shared values and purposes provide a sense of direction, enabling their participation in fast decisions. Besides fostering common purpose and core values as attributes of the workforce, to perform agility, organizations must enrich work, promote personal growth and provide commensurable incentives and return (AlNuaimi et al., 2022). Some authors associate top managers in agile organizations with transformational leaders who are prepared and prepare the employees to respond effectively to threads and opportunities, constantly adjusting the course of action (Doz, 2020).

Intra-organizational Antecedents

The dynamics of agility influence and are influenced by how firms are structured. The formal scheme of relationships, communications, decision processes, procedures, and systems enables firms to achieve a higher level of agility (Singh et al., 2013). The organizational design

provides firms with the foundations to perform the agility process. Agile firms must account with gatekeepers across the organization formally encharged of scanning, processing, and communicating information from the environment to avoid threats and take advantage of opportunities. To this end, some firms have used IT-based systems (e.g., business intelligence) to increase the speed of data collection, data analysis, and dissemination of information (Cheng, Zhong, & Cao, 2020). These systems enhance organizational agility at different levels. For example, they can improve efficiency and increase productivity by using real-time information and performance metrics at the operational level. At the strategic level, IT-based systems can help firms assess and integrate data in real-time, recognizing patterns and simulating scenarios about environmental changes, timely sensing, and quickly responding to opportunities and threats. Information technology (IT) ability (i.e., infrastructure, knowledge, and operations) have been considered vital to perform those tasks, enhancing agility performance (Cai et al., 2019; Chakravarty et al., 2013). Scanning and sharing consolidated information may not be enough for firms to overcome severe environmental changes. They must quickly decide how to deal with those sensed changes and act.

Scholars suggest several ways through which firms have acted quickly in responding to environmental changes and uncertainties through exploitation or exploration of the threads or opportunities, such as adapting products or services to new customers' needs (Aslam et al., 2020), launching new products or services (Zhang et al., 2022), creating new business models (Battistella et al., 2017) and reconfiguring or restructuring processes (Gao et al., 2020). However, exploitation and exploration demand organizations to possess and apply other capabilities. Among them, Two abilities have mostly grounded agility performance: operational flexibility and knowledge management. Flexibility has been considered a firm's mechanism

related to operational processes and products. Organizations considered highly flexible in their operations are more prone to be agile (Fayezi et al., 2017). They spread this ability to the supply chain through collaboration and integration with other firms. Although some responses are seized by quickly adapting the production levels and variety, others may demand innovation (i.e., processes, products, or business models). In both cases, to be effective, firms need to possess superior knowledge management ability supported by high levels of absorptive capacity.

Absorptive capacity embraces the organizational processes and routines through which firms manage and operate knowledge using four mechanisms: acquisition, assimilation, transformation, and exploitation (Zahra & George, 2002). Acquisition and assimilation are related to the potential absorptive capacity of firms in using information and knowledge scanned by the gatekeepers. However, firms will be able to respond to changes only if this knowledge is realized, transformed, and exploited. Informal networks of individuals and teamwork within the firms are important in choosing what knowledge will be assimilated, shared, and transformed in actions (i.e., products or services customization and the launch of new products). Some studies suggest that absorptive capacity is key for performing several functions using information systems, such as knowledge repositories, information retrieving or communication and collaboration enabling, which in turn facilitate the integration of new and past knowledge, increasing the organizational absorptive capacity (Felipe et al., 2016). Accordingly, organizations with high levels of absorptive capacity are more prone to sense environmental changes and continuously learn from these experiences, increasing their agility (Kale et al., 2019).

Although organizational agility is a collective ability at the micro level, it also manifests at the level of individuals (employees) since only possessing a broad set of skills, employees

could play their roles in an agile organization (Nijssen & Paauwe, 2012). Employees must possess some key personal competencies, such as openness to change, interpersonal skills to collaborate, and the capacity to learn and apply learning to problem-solving (Dyer & Shafer, 1998). Additionally, organizations must develop five other desirable personal competencies across all levels and types of employees, allowing workforce fluidity (Doz, 2020) and a rapid and efficient transition in human resource configurations ever necessary. To this end, organizations must acquire talents, routinize employees' outplacement, enrich the talent pool, facilitate interpersonal connectivity and informal collaboration, expand role orientations, and provide incentives to employees' initiatives and responses to changes (Dyer & Ericksen, 2006).

Inter-organizational Antecedents

At the macro level, some inter-organizational antecedents are considered critical to building and performing agility, such as building and managing alliances and networks and acquiring information and knowledge, mainly through integrating systems. Then, being agile means capitalizing not only on internal but also on external skills and information when creating new products, expanding product lines, or coming up with innovative solutions as responses to environmental changes (Tavani et al., 2014). Some authors argue that organizations can enhance their agility by acquiring knowledge and learning from external partnerships through their built networks. The network is an extensive repository of external resources, such as information, knowledge, and innovation (Liu & Yang, 2020). Then, superior networks may leverage resources within the firms, enabling an agile organization to respond faster to changes than a standalone one. The network structure and the firm's relative position have a pivotal role in the firm's agility (Liu & Yang, 2020). Networks resources also have the implicit utility of information transfer, enabling firms to scan quickly and respond effectively to contingencies due to suppliers

and customers. Thus, the more networks a firm participates in, the more information is quickly available. Then, networks' structures and management have a central role in how firms acquire information and knowledge to perform agility.

Acquiring information and knowledge from external sources (e.g., suppliers and customers) are a sensitive part of the inter-organizational antecedents of agility (Battistela et al., 2017). Although, in some cases, suppliers and customers can be part of the environmental changes due to their core role in the firm's value chain, agile organizations also use them as part of the solution, providing knowledge that can help in the organizational responses to change. As information is key to timely sensing the threads and opportunities, organizations that share information through integrated information systems (e.g., ERM) gain traction on being agile. Some scholars suggest that firms must integrate IT resources and processes not only internally within departments but also externally within their supply chain, allowing the sharing of business processes' information (Gao et al., 2020; Wu et al., 2017). Due to the different sources from which data is acquired (i.e., electronic platforms, big data sources, internal systems), the process of quick integration and analysis requires distinctive knowledge and competencies from people of business intelligence and managers, such as big data analytics capability and strategic view of the firm (Lee et al., 2021). Besides the knowledge sharing that can be achieved through integrated systems, organizations that have superior relational ability may assess the members within the networks to develop and address the needed knowledge faster, taking advantage of their insertion in networks and building collaborative relationships.

The process of Agility

Although scholars have discussed the incomes, outcomes, and enablers of agility at different levels, few have addressed how agility works within organizations in detail. The

process of using agility can be comprised of three building blocks: sensing, responding, and performance outputs. The first block in the process is timely sensing environmental changes. This process involves receiving and evaluating data and information and timely identifying, assessing, and foreseeing opportunities and threats (Roberts & Grover, 2012). To this end, big data analytic capability has sparked an increasing interest in researchers. Some studies suggest that this capability can help enhance agility and performance (Dubey, Gunasekaran, & Childe, 2019). Moreover, they argue that integrating big data analytics into operational activities on a daily basis has enhanced the agility of several organizations in sensing changes in customers' requirements, such as Amazon, Uber, and Netflix (Wamba et al., 2020). To this end, intra-organizational (i.e., IT/IS capabilities, absorptive capacity) and inter-organizational ability (i.e., integration of systems, information exchange) are vital antecedents. During the sensing process, employees and managers must be able to access the relevant data and detect relevant changes in the environment that can affect them, demanding specific cognitive skills (i.e., awareness) from them (Gligor, Holocomb, & Stank, 2013). Although this step is key for performing agility, the mechanisms used in sensing within performing agility are under study.

The second building block of agility performance is related to building an effective response to changes. Responding entails addressing the sensed changes by mobilizing the necessary resources and executing operational processes (Teece, Peteraf, & Leih, 2016). Thus, several organizational abilities and competencies are mobilized in order to quickly address the potential effects of the anticipated opportunities and threats due to changes. This step is generally founded on informal multifunctional collaboration, demanding teamwork, communication, and coordination (Nakandala & Lau, 2019). Through this process, two different sets of responses can be designed, representing the potential outputs of performing agility (Lee et al., 2015). The first

relates to exploitation activities resulting from a quick adaptation and/or reconfiguration of existing routines, processes, and products or services. This type of response is built mostly upon two distinctive intra-organizational features - operational flexibility and knowledge management. Additionally, there is a set of responses that can demand more than adjustments of products or services, requiring innovative solutions and transformation. Learning and R&D ability are key to those transformations since the environmental changes are mostly associated with new entrant technologies in the industry or radical switches in customers' tastes or needs.

As agility is a path-dependent organizational ability, its performance depends on the previous states to be applied. This feature is represented in the process by a feedback loop. Being agile is not only about responding quickly but also responding appropriately and effectively. Then, the results of performing agility (outputs of the agility process) must be measured regarding their idealized effects. These measures provide feedback on the implemented output. This feedback about the effectiveness of the response may indicate the output needs to be adjusted. It also serves to increase organizational learning and create knowledge, demanding the use of the absorptive capacity by organizations. Moreover, as changes are dynamic, this feedback may be added to new sensed information, leading to another cycle of adjustments and calibration in the responses.

Organizational Outputs

Several studies have explored the outcomes of performing agility in organizations at different levels. Almost half of our empirical dataset has performance (i.e., financial and ROE) as the outcome of their tested frameworks, suggesting that agility positively affects performance (e.g., Kale, Aknar, & Basar, 2019; Nemkova, 2017). Agility has also been advocated as a source of competitive advantage in the literature (Teece, Peteraf, & Leih, 2016; Prange, 2021). In fact,

as agility requires the application of speed on the knowledge basis of the organization (i.e., operations, market, industry), if the responses are quick and effective, they tend to provide firms with incremental (sometimes big) changes in several dimensions (i.e., learning, knowledge), creating a virtuous cycle of improvement. This continuous and vigorous change leads the organization to be one step forward the competitors, creating a competitive advantage. Most studies about agility's organizational outputs discuss not the effects of performing agility but the effects of possessing the antecedents of agility on the firms' output (performance or competitiveness). Few is known about the contribution of the outputs of using agility to firms' performance.

Implications For Future Research

As the dynamism of the business environment is increasingly the new normal (Singh et al., 2013), the interest in agility has grown, reflected in the number of publications in the business and management literature. Our systematic analysis of taken-for-granted literature in the last ten years highlights the main elements of agility definition and boundaries, clarifying the meaning and nature of this construct and enhancing the understanding of it. Besides, our inquiry also provided the basis to propose an integrative framework that extends the extant knowledge on how agility works. Through our comprehensive and systematic analysis, we identified some opportunities for theoretical improvement of agility as an organizational ability. We suggest that future work could be done on the following theoretical topics: (1) Clearer Definitions of agility and Construct Boundaries; (2) the interdependency and relevance of the different levels of analysis; (3) the mechanisms associated with the time scope for agility; (3) the role of different institutional and cultural environments on the agility of global firms; (4) the impact of different managerial cognition on agility; (5) the impact of intra-organizational antecedents (i.e.,

organizational structure and informal collaboration) on agility building; (7) the impact of inter-organizational antecedents in building on agility; and (8) The mechanisms of feedback and the impact of antecedents on the agility process.

Clearer Definitions of Agility and Construct Boundaries.

Although the vast empirical literature on agility, some studies neither define the concept nor describe its meaning to be used in testing models, leaving readers to provide interpretation. The contributions to the literature abound with several different definitions, some borrowed from other studies and contexts, without the rigor of its adaptation (Pinho et al., 2022). This variation in definitions has led to different interpretations and measurement approaches. Against this ferment, we suggest that future research should clearly state the definition of agility, the scope of its use, and the factors that impact agility, considering the research context. For example, in her proposal of an agility trap, Prange (2021) explicitly approaches agility as a value to balance stability and change, emphasizing that speed can vary according to the context and industry. Scholars should also draw attention to the contextual conditions that may impact agility's applicability in their research, specifying the scope conditions that underpin their theoretical argument. As the level of analysis represents relevant research boundaries, we suggest that researchers clearly define the populations under study. These clarifications are essential to maximize the comparative value of research findings and the application of research to practice.

Interdependency between different levels of analysis

Empirical studies on agility as an ability commonly assume that only the focal level of analysis variations matter, with the other levels of analysis assumed invariant. However, organizational agility is impacted by a complex set of individual, team, and firm factors (Ferraris

et al., 2022). At the individual level, factors such as cognitive abilities, personality traits, and motivation can impact the individual's ability to be open to changes and adapt his or her routines according to the necessary response to changes in the environment. At the team level, several factors, such as the team's composition, and the quality of communication and collaboration between members, shape the ability of a team to respond effectively to changes. At the firm level, elements such as corporate culture, structure, and information systems (IS) are considered vital to building agility. These levels interact in complex and dynamic ways, with each level influencing the others. For example, researchers use concepts such as resources, skills, capacities, procedures, and routines when analyzing firm performance, usually ignoring individual-level heterogeneity (Rothaermel & Hess, 2007). As little is known about this interdependency (Pereira et al., 2021), future multi-level research on organizational agility can provide insights into the interplay and underlying tensions between the effects of agility at the individual-, team-, and firm- levels. In addition, understanding how these interactions impact agility performance may inform specific changes to be made by firms to strengthen their agility.

Mechanisms associated with the time scope for agility

Many studies on agility focus on analyzing how organizations play agility from a short-term perspective. However, being agility a path-dependent construct, analyzing its actions requires a long-term perspective. As the responses must be not only quick but mainly effective to deal with the sensed changes, organizations must check them, adjusting them if necessary. Organizations must create some control mechanisms to acquire feedback on their implementation, which will provide the required information for this evaluation. This feature shapes the agility process as incremental, leading organizations to continuous improvement and demanding a different temporal approach from researchers in some cases. For example, although

empirical research has measured the impact of firms' agility on performance, few have carefully examined the incremental value created due to the responses to changes. Studies do not explicitly show how much performance (i.e., financial) is due only to agility, discriminating its effects from other effects. This lack of discrimination blurs the final evaluation of how much performance is due to agility. There is little research on how organizations deal with agility as an interactive process, most of them in the context of project management and development (Carmeli & Dothan, 2017).

As a path-dependent construct, agility can be viewed as consisting of quick change and adaptation to event cycles and contingencies, requiring the sequencing of activities and learning with outputs coming from the previous cycles (Mcmillan & Overall, 2018). However, very few empirical studies capture the path-dependent characteristics of agility, continuing to frame their arguments in a very static way. Studies of agility's dynamic and path-dependence demand the use of longitudinal data and specific models to investigate the pace and paths of change. Some of the frameworks that considered time and feedback loops were mainly in project management, discussing quick changes over plan and flexibility of the development life cycle (Serrador & Pinto, 2015; Sheffield & Lemétayer, 2013). Brueller, Carmeli, and Drori (2014) propose a conceptual model that associates the process of agility to their application to the merge and acquisition process, analyzing the path between both processes and how they interact over time. This lack of longitudinal empirical studies provides a static approach to agility research, avoiding full comprehension of this phenomenon. By adopting event system theory through a longitudinal timeline, future research could be made at the micro-level of agility (i.e., responses to changes) and explore the mechanisms through which agility operates within incremental temporal scope conditions and its effects on agility performance.

The role of different institutional and cultural environments on the agility of global firms

Institutions and national culture are core factors for firms doing business abroad (Hitt, Franklin, & Zhu, 2006). Global firms must deal with different sets of formal and informal rules, regulations, and norms that shape organizational behavior and decision-making cross-countries. Accordingly, organizations' members can differ due to cultural values, beliefs, attitudes, and behaviors. These factors underline the differences between global firms' internal and external environments. The institutional environment may influence the firms' operations in a country due to variations in the regulatory environment, the competitive landscape, and the availability of resources. Institutions affect and condition the organization's capacity to be agile. However, little is known about how different institutional antecedents affect organizational agility (Gölgeci et al., 2019). For example, a more flexible regulatory environment may allow organizations to respond more quickly to changes in the market. At the same time, a highly competitive landscape may require organizations to be more agile to remain competitive. Then, new research could extend the inquiry into what institutional factors can both enable and constrain the organization's ability to respond quickly and effectively to changing circumstances.

Although culture also plays a role in determining an organization's agility across countries, there is little literature about the interplay between cross-cultural features and agility (Ramesh et al., 2017). For example, openness to change is a valuable feature of organizations being agile, but little is known about how variations in uncertainty avoidance (Hofstede, Hofstede, & Minkov, 2010) affect firms' agility across countries. Other organizational abilities used in the agility process (e.g., risk-taking, informal and formal collaboration, and empowerment) are also likely to be impacted by different cultural features (e.g., power distance and individualism versus collectivism). Future research could explore how a country's culture

moderates the timely sense and quick response to environmental changes, comparing and contrasting these findings between two or more countries. This study could also bring valuable knowledge on what mechanisms firms adopt to build agility globally due to these cultural differences.

The impact of different managerial cognition on agility

The cognitive dimension has been reputed as a core of agility (Teece, Peteraf, & Leih, 2016). The cognitive ability and framework that managers use to achieve organizational agility can vary depending on several factors, such as the specific context of the organization and challenges and opportunities. However, decision-makers rarely can capture and provide relevance to the contextual factors that affect their ventures due to their bounded rationality and cognitive constraints (Xing et al., 2020). Scholars have studied some specific cognitive abilities used in the agility process, such as strategic foresight (Vecchiato, 2015), systems thinking (Xing et al., 2020), and adaptive and collaborative ability (Eilers, Peters, & Leimester, 2022). However, little is known about how managers' cognition affects organizational agility, and scientific findings are still rare (Eilers, Peters, & Leimester, 2022). Qualitative research on the agility process may shed light on managers' main cognitive ability applied to the decision-making processes linked with sensing changes as demanding responses and the actions taken within the responses.

Another future line of inquiry is related to the paradoxical nature of some agility decisions. These decisions usually require dealing with many tensions, such as agility and efficiency (Teece, Peteraf, & Leih, 2016) and new actions due to uncertainty and strategic planning (Cunha et al., 2020). Since these competing demands evoke contradictions (Lewis,

Andriopoulos, & Smith, 2014), some scholars suggest that managers approach those contradictions using the paradoxical lens. Paradox theory focuses on how managers can resolve tensions through solutions that embrace both sides instead of choosing just one. Some scholars suggest that managers involved in the agility process must possess a paradoxical mindset – "a general orientation towards embracing contradictions" (Keller & Loewenstein, 2017). The paradoxical mindset enhances improvisation (Cunha et al., 2020), leading to fast-paced and adaptable decision-making. Few studies have been made to offer a prescription of managerial behavior in approaching the demands of agility as paradoxes (Lewis, Andriopoulos, & Smith, 2014). Then, qualitative research could explore the tensions at the micro level of the agility process, identifying the core tensions that emerge when managers face performing agility, focusing on what mechanisms underlie managers' use of a paradoxical mindset to deal with each tension.

Impact of intra-organizational antecedents on agility building.

Much research has been done on the impacts of knowledge sharing and management (e.g., Alberti-Alhtaybata, Al-Htaybatb, & Hutaibat, 2019), absorptive capacity (e.g., Kale, Aknar, & Basar, 2019), IT/IS ability (e.g., Levallet & Chan, 2022), human resource and capital (e.g., Nemkova, 2017), and organizational structure (e.g., Vaia, Arkhipova, & Delone, 2022) on agility. However, few works were dedicated to understanding how those intra-organizational antecedents interact, enhancing agility.

The organizational structure features can facilitate the flow of information and knowledge (Miles et al., 1978), enabling organizations to timely sense and respond quickly to environmental changes. Some work in the literature has argued that organizations can assess issues through more horizontal structures. They emphasize that a design based on cross-

functional teamwork (agile teams) leads to a higher level of agility due to better sharing and use of knowledge (e.g., Annosi, Foss, & Martini, 2020). However, some scholars have warned that agile teams are inappropriate for all contexts (i.e., industries, firm size), suggesting that organizations should assess the fit of their use for the context before implementing this type of structure (Rigby, Sutherland, & Noble, 2018). A future line of inquiry could shed light on how different contexts (i.e., different firm sizes and industries) moderate the effects of firms' structure (i.e., teamwork) on knowledge management. Additionally, this study could investigate how the level of organizational agility varies due to this interaction.

At a micro-level of the organizations, informal collaboration has also been considered an antecedent of organizational agility. Although these networks are built outside the formal organizational structures and processes, they are reputed as supporting cross-functional collaboration and giving access to individuals to a broader range of perspectives and expertise. As a result, they enable individuals to make better and quicker decisions, providing greater flexibility to organizations and enhancing agility (Pereira et al., 2021). However, little is known about how informal collaboration is built within organizations and how it works aligned to agility performance. A new line of inquiry could analyze the mechanisms used in informal collaboration, how firms engage individuals, and its reflections on agility building. This research could also explore how effective the formal and informal structures are in building agility, what drives organizations to choose one type of collaboration to the detriment of the other, discussing the pros and cons of each model across different contexts.

The Impact of inter-organizational antecedents on agility building.

Superior networks can help firms to enhance their internal ability to reduce reaction time, increasing their agility (Pinho et al., 2022). Resources (i.e., information and knowledge) and

learning acquired from external supply chain networks and partnerships have been considered critical antecedents of organizational agility (Franken & Thomsett, 2013). Additionally, external networks are also core for identifying new knowledge and innovation, enhancing the ability of firms to respond quickly to changes (Kim & Chai, 2017). These networks are built mainly by integrating the firm's internal functions, suppliers, and customers, leading to complexity in the orchestration of resources. However, more knowledge is needed about how new knowledge from different sources, such as corporate research, strategic alliances, joint ventures, and networks, is identified and assimilated within the networks. Still, little is known about how these differences contribute to variations in organizational agility. Research into different inter-organizational arrangements (i.e., strategic partnerships and groups. industry clusters, and networks) may help us better understand their underlying mechanisms. As a potential result, this research could inform how different arrangements affect the way focal firm plays agility.

Integration of systems and processes has also been considered a critical inter-organizational antecedent of organizational agility (Jajja, Chatha, & Farooq, 2018). This integration can be seen as an extensive network with several nodes. Future research could apply network theory to investigate the roles of these different nodes and their relative importance to the agility of the focal firm. Since there is a complex orchestration of resources within a network, the final configurations may differ from those originally designed. Another line of inquiry on this matter could help to understand what controls firms adopt to guarantee the configuration in combining the systems and processes that lead to better agility performance.

The mechanisms of feedback and the impact of antecedents on the agility process

Despite the growing body of knowledge on agility, a few studies have explored the agile process in an integrated way. No work has examined in detail the mechanisms used to connect

and align the build blocks sensing and responding to enhance agility. Moreover, little is known about how firms evaluate the performance of the agility process. Some authors repute cost, speed, quality, and scope as dimensions that should be taken into account in the measurement of the effectiveness of the response (Dove, 1999). However, firms' mechanisms to evaluate the effectiveness of responses at the micro-level are still unknown. Future qualitative research could explore each environmental change as an event. Adopting the event system theory as the conceptual setting, researchers could map the agility process, the timeliness of sense-making, and the quickness and effectiveness of the responses. Moreover, as sensing and responding abilities are necessary, but not sufficient, conditions for agility, a deeper examination of the impacts of different antecedents on both abilities may shed light on how organizations can build agility and manage the multi-faceted aspects of the agility process, extending the understanding of the interaction among the antecedents and those abilities and their impact on the processes and routines used in the agility process. This inquiry could also identify and explore the underlying tensions and paradoxes that emerge from those interactions.

Conclusion

Despite the increasing interest researchers have shown in agility, our systematic review of a sample of articles published in top journals in the last decade provides a clear definition and boundary conditions for the agility construct. It also provides a multidimensional and multilevel integrative framework and identifies opportunities for future research and empirical studies. We suggest that there is a need for researchers carefully and clearly state the definition of agility and the scope of its performance based on their research context in order to guarantee the comparative value of their findings. There is also a need for building on the interactions between the managerial, intra-organizational, and inter-organizational antecedents and their impacts on

agility building and performance. Although agility has received a great deal from researchers recently, the concept spans the organizational value-chain, leading scholars to approach agility differently. This broad and sometimes careless use made agility a fuzzy construct (Bacharach, 1989), resulting in a disconnected and complex body of knowledge.

In this essay, we systematically and rigorously evaluate the agility literature in the last ten years. As a contribution, we propose a clear, concise, and parsimonious definition of the construct and its boundary conditions, providing a better understanding of what agility is, its subject and triggers, and how it is applied. Departing from the clarification of agility as an organizational ability, we also contribute to consolidating and extending the body of knowledge about agility by providing a multidimensional and multilevel integrative framework for the construct. Additionally, we contribute by analyzing some weaknesses of agility research and proposing several future venues. Our systematic analysis led us to conclude that the process of performing agility - how changes are captured and responded to and how organizations measure the effectiveness of their responses- has been relatively understudied in the existing literature. Accordingly, the role of individuals and how their informal collaboration affects agility performance have been little addressed by researchers. Based on the building blocks of our integrative framework, we discussed some shortcomings and pointed many research avenues to empirical and conceptual studies, such as the role of top management knowledge and cognition in the decision-making process, the organizational structure, and the role of informal networks associated with the use of agility; how inter-organizational networks influence the level of agility and its process; how learning and absorptive capacity acts within the agility process; an integrated view of the agility process – how it works, how the feedback process influences the

decision making, and how exploitation and exploration ambidexterity is quickly resolved; and what parameters are used to measure the response's effectiveness, as an output of the process.

In summary, although the tremendous advancement that agility literature achieved, some dimensions of its theorizing still need further research. At the elemental level, we know little about how organizations build agility, reflecting on the employees' actions towards changes. Although there are several empirical works, little is known about how absorptive capacity interacts with informal collaboration within the organization to enhance agility performance. Additionally, more studies are needed on the interactions between intra- and inter-organizational antecedents to better understand what levels of each dimension promote the highest levels of agility. Is there any dimension that is ineffective in the presence of another? Following our suggestions for future research will probably reduce some of the knowledge gaps.

Finally, as in many investigations, our study is not without some limitations. First, our dataset entails only studies in the last decade of research on agility. Probably, some relevant elder documents were missed. Future studies could extend the study, bringing some documents according to their relevance (i.e., number of citations). Second, we focused our study on articles that met stringent quality and were published in top-ranked journals. Then, potentially some other relevant studies were also missed, such as conferences and working papers, and books.

ESSAY 3: AGILITY & RESILIENCE IN EMERGING MARKET MULTINATIONALS – INTEGRATING TWO FACES OF THE SAME COIN

Introduction

Emerging Market multinationals (EMNEs), internationalizing homegrown organizations from mature markets like Brazil, China, and India, have become household names in advanced economies (Cavusgil, 2021). Researchers have examined EMNEs' entry and performance in foreign markets, their motivations for international expansion, partnerships, learning, and government policies (Hernandez & Guillén, 2018). One clear bias is the focus on emerging markets' (EM) institutional voids and their many liabilities (e.g., foreignness, newness). However, launching and sustaining a successful business in an EM entails unique challenges, such as high frequency and several changes of varying kinds associated with severe surprises and unanticipated shocks (Marquis & Raynard, 2015; McCann, Selsky, & Lee, 2009). Research rarely explores how these adversities enable or hinder the development of superior abilities and sustainable competitive advantages for EMNEs operating internationally (Ramamurti et al., 2019).

Framing a sustainable competitive advantage is at the core of competitive strategy and strategic management research (Porter, 1996; Pinho et al., 2022). Despite this, putting into action a sustainable competitive advantage with the goal of improving market performance can be challenging in fast-changing, unpredictable, and turbulent environments (Eisenhardt, 1989; Furrer, Thomas, & Goussevskaia, 2008). Firms have faced an increasingly integrated and complex global competitive landscape due to the rapid entry and growth of internationalizing firms from emerging markets, technological breakthroughs, discontinuous innovation, and the uncertainties surrounding unexpected shocks transmitted across world markets, such as the Covid-19 pandemic. Thus, traditional sources of sustainable competitive advantage and

implementing traditional methods of competitive strategy have become unfit in today's hypercompetitive global environment (Duchek, 2020; Fourné, Jansen, & Mom, 2014).

Besides that, firms have increasingly dealt with tensions within their strategies towards the environmental complexities due to apparent contrary and opposing issues, such as those between responding to expected, calculable changes vs. uncertainties that are unexpected and less calculable. Institutionalizing efficiency while assuring growth through innovation or short-term economic relief in response to unexpected environmental developments vs. longer-term recovery due to adversities have become a common challenge faced by firms. These issues have brought a sense of urgency to firms to develop and apply new skills and capabilities, not only to manage but to embrace interfacing with those contradictions. Scholars have suggested that to operate in turbulent world markets successfully, firms need to nurture adaptive abilities (i.e., agility and resilience) to better sense market opportunities and threats, allowing them to enact global complementarities more efficiently and appropriating value across world markets more effectively (Teece, Peteraf, & Leih, 2016). Scholars have associated agility with quickly and effectively responding to environmental turbulences and continuous change (e.g., Felipe et al., 2016) and resilience with reacting to those unexpected and disruptive changes (e.g., Conz & Magnani, 2020). However, Golgeci et al. (2009) have lamented that few studies have discussed how organizations simultaneously build and possess agility and resilience abilities, enhancing their competitiveness, growth, and survival in highly complex and volatile markets. Moreover, McCann, Selsky, & Lee (2009) have argued that empirical applications of these interfaces are scant.

Nowhere are these requirements more pressing than on firms from emerging markets that are consolidating their positions in the international markets (Cuervo-Cazurra et al., 2018). This

is because instead of establishing strong brands, goods, and technologies to support internationalization, their international expansion typically relies on other distinctive skills and capabilities. Research shows that EMNEs develop superior adaptive abilities and sustainable competitive advantages due to their frequent exposition to and experience with environmental changes in their home countries (Madhok & Keyhani, 2012). This argument challenges classic MNE theories that argue that their internationalization is founded on some type of firm-specific advantage or ownership, bringing new variables that should be empirically explored (Hernandez & Guillén, 2018). Few studies in the strategic management and international business domains focus on understanding how emerging market firms develop and apply distinctive capabilities, such as agility and resilience, that enable them to adapt to the environmental complexities they face in multiple markets and build sustainable competitive advantage (Cavusgil, 2021; Hernandez & Guillén, 2018). Accordingly, this essay aims to uncover *how agility and resilience abilities manifested in EMNEs enhance their competitiveness by using both adaptive abilities to manage changes and uncertainty.*

To address this research question, I conducted an inductive, qualitative study on six Brazilian internationalizing MNEs in three industries – digital economy, services, and manufacturing. On average, these EMNEs had 29 years of operating experience in their domestic market and almost 20 years of international experience in 30 countries. The in-depth interviews explored through cross-case analysis provided knowledge of their abilities to respond to environmental changes (agile and resilience). The findings revealed that all EMNEs possess varied degrees of agility and resilience abilities in their operations across four quadrants. Based on these findings, I proposed a typology for conceptualizing agility and resilience. In addition, the cross-case inductive analysis revealed that those abilities are developed and applied across

five dimensions. Building on these dimensions, I propose a theoretical framework through which agility and resilience abilities are deployed dynamically and simultaneously, offering eight propositions for empirical research. The typology and the theoretical framework allowed me to draw several contributions to the literature and to managerial practice.

My work makes three contributions to the international business strategy literature. First, this essay extends the theorizing on emerging market internationalizing firms by acknowledging the use of adaptive abilities in dealing with changes and disruption. The findings show that firms seek to build and apply both abilities to respond to different turbulence levels. Second, I extend the knowledge of adaptive abilities by acknowledging and discussing the interplay and interrelatedness between agility and resilience; the literature has stressed these abilities in isolation. I show that this is a dynamic macro-process through which organizations deploy agility and resilience, increasing their readiness to respond to new challenges. Finally, our discussion extends extant theory by discussing the mechanisms through which this interplay happens, enhancing the organizational bundle of abilities to respond to turbulence and adversity. Based on my findings, I suggest that organizations that were able to build a hybrid agile-resilient cognition, behavior, structure, and responsiveness have been able to succeed in their internationalization efforts. This inductive conclusion offers opportunities for future deductive research.

Leaders and managers should benefit from clarifying how organizations possessing and employing different levels of agility and resilience can simultaneously enhance and balance both abilities in their operations. My findings provide insights into how to evaluate EMNEs' current positioning, allowing them to set objectives for improvements across their operations.

Organizations will be able to build their balanced agile-resilient positioning through direct agency and strategic management.

The remainder of this essay is organized as follows. First, I offer the theoretical background from the literature on agility and resilience, comparing and contrasting while highlighting similarities and differences. Next, I describe the process followed by the inductive grounded methodology applied to the data collected. Then, I discuss the findings using cross-case analysis with two-levels of perspectives. The macro-level analyzes each EMNE's agility and resilience capabilities. The micro-level dives deeper into the agility and resilience dimensions across the EMNEs. Building on these findings, I propose a theoretical framework representing the dynamic processes of integrating agility and resilience. I develop seven propositions. Thus, I discuss the main theoretical and practical implications of my study as well as some limitations. I close with the main conclusions of my study.

Theoretical Background

Agility

Agility refers to the capacity to move quickly and decisively in anticipating, initiating, and taking advantage of opportunities and avoiding the negative consequences of change (McCann, Selsky, & Lee, 2009). Agility takes on greater meaning when considered in the context of the operations and strategy in which organizations face environmental uncertainty, turbulence, and frequent changes. This turbulence often implies the creation and use of non-traditional business models, which will help the organization drop the stability offered by the established routines and cognitive structures in favor of renewed and reformed organizational mindsets and operational modes that are also more conducive to creating value in those environments (Teece, 2018). Accordingly, Teece, Peteraf, and Leih. (2016) argue that this

dropping is possible primarily through generating and nurturing distinctive abilities, which create an agile culture in the organization that allows it to select, adapt, and match the quick response and the (turbulent) environment.

Three elements underlie our definition of agility – speed, sensing, and responsiveness. Speed is related to how quickly the organization senses and responds to environmental changes. As agility is conditioned on environmental changes (e.g., customers' needs and tastes and the industry's competitiveness), different turbulence levels will demand different magnitudes of the speed of responding. The faster the environmental changes, the faster organizations must sense and respond to changes to take advantage of the opportunities or avoid threats. Openness to change has been considered an essential organizational behavior that enables and accelerates responses toward changes (Devos et al., 2010). Speed is also influenced by how firms are structured. Organizational design, structure, and processes (i.e., flexible) provide support and contribute to building and deploying agility.

Sensing is another essential attribute of agility. Acquiring and evaluating data and information are vital in sensing environmental changes. Organizations accumulate data using information systems that integrate internal and external sources across the value chain, such as manufacturing, suppliers, and customers. During this process, organizations must deal with a significant amount of data, quickly distinguishing between ambiguous and uncertain situations that can be considered opportunities or threats. This task demands specific cognitive skills of employees, such as awareness, which enable them to evaluate, detect, and inform relevant changes.

Building a quick and effective response to changes is the third attribute of being agile. Responsiveness encompasses decision-making and implementing the planned actions that

quickly address the potential effects of the identified changes. This quick response is built on informal multifunctional teams, applying several organizational abilities. Many organizations fail to be agile because although they quickly sense the changes, they are not able to formulate the response to quickly and effectively take advantage of the opportunities or avoid threats (Hagen, Zuchella, & Ghauri, 2019).

Resilience

Resilience refers to the organizational ability to resist, absorb, and react to unexpected and/or disruptive environmental changes that cannot be avoided (McCann, Selsky, & Lee, 2009). In recent years, resilience has gained traction in organization studies, regarded as a promising concept for explaining how organizations can survive and develop in the face of unexpected events or disruptions (Linnenluecke, 2017). Despite the growing scholarly interest in resilience, there has been considerable conceptual and operational variation in how this term has been applied in research, resulting in different definitions, conceptualizations, and measurements (Hillmann & Guenther, 2020). This lack of a uniform definition has hindered its wide-ranging use, but there is general agreement that resilience is a desirable adaptive ability for an organization (and its members) to deal with various types of adversity, more frequently referring to an organization's ability to recover quickly from adversity (Miceli et al., 2021).

Some scholars argue that resilience demands anticipation and proactivity to respond to unexpected, disruptive, and shocking events (e.g., Lengnick-hall, Beck, & Lengnick-hall, 2011). Moreover, as resilience is considered an adaptive ability, organizations respond to unexpected changes by incrementally adapting their functions, learning, and evolving due to change. (Miceli et al., 2021). The magnitude of unforeseen change will point to the level of disruption imposed on the organization, its behavior, and the course of action it should activate. When resilience is

in action, organizations survive, adapt, and thrive in disruptive conditions, adequately reacting and conserving their market position and value.

Three elements underly this definition – absorbing, resistance, and recovering. Absorbing denotes the organization's cognitive ability to notice shifts, interpret unusual situations, and analyze the impacts on the organization's operations and structure and the options to respond to uncertainty and disruption. One crucial component of this dimension is sensemaking, which enables firms to interpret and provide meaning to specific conditions and events. Organizations that possess sensemaking are more prone to predict and understand the situation, anticipating disruptive events and, therefore, being more prepared to confront them (Conz & Magnani, 2020). Another competence that enhances this analysis is risk management, through which the organization holistically assesses its position and explores options for dealing with surprises by building contingency plans (Sahebjamnia, Torabi, & Mansouri, 2018).

Once a disruptive change is detected, resistance behaviors are used by organizations to persevere through disruptions. The organizational ability to persevere in the face of challenges and disruptions is an early indicator of the firm's cultural values that support the potential for long-term survival. Even when environmental change is damaging and hurtful, behaviors due to resistance can help alleviate this (Linnenluecke, 2017).

The level of resistance is strongly supported by organizational structure. Its design, resources, processes, and routines will enable the organization to continuously learn from events and adapt or renew its routines using its previous experience (Linnenluecke, Grif, & Winn, 2012). Moreover, resistance is also represented by how organizations respond to disruption. Responses are directly associated with exploiting the firm's resources, skills, and capabilities, demanding that organizations stress the duality between the established processes and the

necessary creativity to prepare the firm for conditions that could be uncertain and surprising (Chen, Xie, & Liu, 2021).

The third element of resilience is recovery, which refers to the extent to which the organization can get back to normal after being impacted by an extreme and unexpected external disturbance (Linnenluecke, 2017). After a disruption occurs, the speed and effectiveness of implementing the actions planned play an essential role in determining the rate of recovery and restoration of the organization to the same level, relating to the organization's former status prior to exposure to disruption, or to a different level, either due to improvement or failure to restore parts of the organization or its functionality. Recovery entails the ability that promotes collaboration to respond to the disruption and the contingency plans that are generated and implemented, providing robustness to deal with the disturbance (Limnios et al., 2014).

Comparison between Agility and Resilience

The theoretical background of organizational agility and resilience has shown that these abilities are employed to manage the consequences of environmental changes. Scholars have argued that these abilities are used separately to deal with different types of changes: turbulences and fast changes (agility) and disruptive and crisis events (resilience). Although the literature has studied agility and resilience typically in an isolated fashion, organizations do not choose the type of change they face, which means that both turbulences and disruptions can occur. However, little is known about communalities, differences, and the interplay between agility and resilience (Gligor et al., 2019).

Despite the increasing number of empirical studies that deal with the potential interplay between resilience and agility (McCann, Selsky, & Lee, 2009), they have neither distinguished the concepts nor discussed their application by organizations. Although these concepts have

similarities and overlaps, few studies have focused on clarifying this complex relationship (i.e., Gligor, Gligor, & Holocomb, 2019; Gölgeci et al., 2019). Regardless of some commonalities between agility and resilience, these two concepts also have distinctions.

The first difference between agility and resilience is related to the nature and the main objectives of the response to changes (Miceli et al., 2021). Agility refers to pro-active or reactive and quick response towards the changes sensed as opportunities or threats, aiming the organizational renewal, long-term growth, and value creation. Resilience is mostly viewed as a reactive action to survive by absorbing, resisting, and recovering from sudden and unexpected shocks, aiming mainly at the organization's value conservation. Figure 5 represents the main differences between agility and resilience in action. There also are other differences between agility and resilience due to the environmental conditions, the main attributes applied in the processes, their strategic relevance, and the aimed organizational outputs (Table 1).

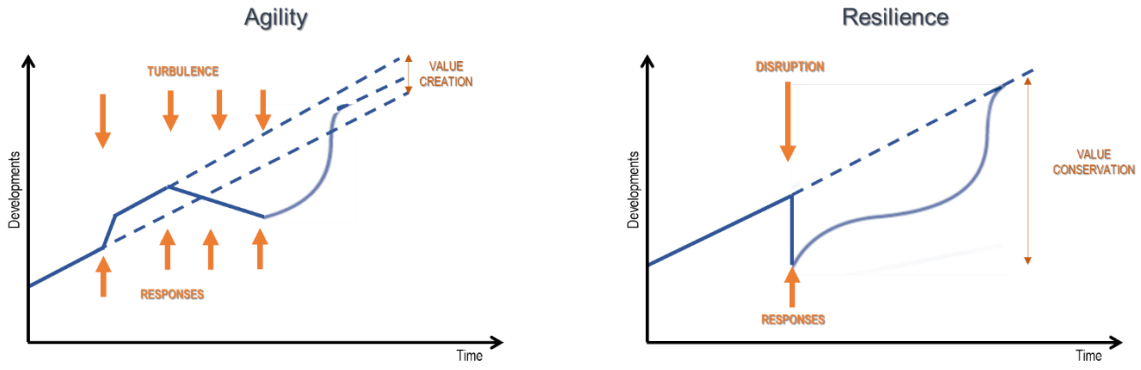

Figure 5– Graphical Representations of Agility and Resilience in action

(Expanded from Mitchell & Harris, 2012)

Table 2 – Main differences between Agility and Resilience.

Ability	Environmental Conditions	Attributes Applied	Approach	Strategic Relevance	Organizational Output
Agility	Continuous Change Turbulence	Speed Sensing Responding	Experimentation Exploitation-Exploration Taking-risks	Pro-active Adjustments Strategic transition Responsiveness	Organizational growth Competitiveness Value Creation
Resilience	Disruptive change Sudden and unexpected - surprise	Absorbing Resisting Recovering	Preparedness Risk Management Contingency Plans	Survival Reactive Adjustments Restoration Transformation	Competitiveness Value Conservation

Globalization, rapid technological change, social media, imitation, changes in customer tastes, and product and business model obsolescence have contributed to faster and more unexpected environmental changes. Although environmental changes trigger organizations to deploy agility and resilience, their use differs due to the nature of change. While agility is stimulated by turbulence and continuous changes that can be predicted and proactively responded to (Weber & Tarba, 2014), resilience is needed to deal with disruptive and unpredicted changes that take the organization by surprise, demanding reactive actions to recover (Linnenluecke, 2017).

Agility and resilience also differ regarding their attributes and mechanisms applied by organizations when acting due to turbulences and disruption, respectively. While the core tenets of resilience are absorbing, resisting, and recovering from disruption, agility focuses on the timing of sensing, responding quickly and effectively to the turbulence of the environment, and growing (Gligor, Gligor, & Holocomb, 2019). One main difference in how they act is the relevance of timely sensing the environment using agility. To be agile, the organization should count on a structure designed to predict environmental turbulence. Organizations must integrate, communicate, and analyze information from several sources (i.e., customers, suppliers, competitors), applying business intelligence and data analytics. Accordingly, this quick access to

information enhances the awareness of turbulence at different organizational levels, enabling quick decision-making and courses of action (Fayezi et al., 2017).

On the other hand, resilience shows up due to unpredicted disturbance and disruption. As the organization is taken by surprise, it needs time to absorb the impact of the expected performance changes and be aware of what happened and the risks involved. Those impacts can imply two different reactions (Dunchek, 2020). While unexpected changes can fall within the organization's coping range, demanding only resistance until their effects cease, disruptions demand actions that go beyond the boundaries of the coping range, which are associated with recovery plans of action. In both cases, there is an emphasis on resuming the expected performance levels as quickly as possible. This reactive behavior demands from organizations a culture that supports high levels of employees' sense of identity, purpose, and commitment (McCann, Selsky, & Lee, 2009). Recovery can also demand resources from outside of the organization's borders, both physical and financial. Then, a collaborative network and good access to capital are essential assets to this endeavor.

The way organizations approach environmental changes differs between agility and resilience. Organizations apply agility to better fit the dynamism of the environment, characterized by a series of events of change. Accordingly, the responses to those events demand constant experimentation with ideas for adaptation or creation of products, services, or business models (Dyer & Shafer, 2003). Due to this approach, to effectively respond to changes, firms may leverage and refine their existing resources, capabilities, and knowledge-basis – exploitation or, in some cases, even deploy and redeploy potential resources to create new abilities and solutions – exploration. The decision-making process in agile organizations demands leadership to manage the tensions between these two competing, sometimes contradictory, alternatives to

responding to changes by quickly evaluating the level of risk associated with the options (Lewis, Andriopoulos, & Smith, 2014).

Risk assessment is also the foundation of how resilient organizations approach unexpected and disruptive environmental changes. A large body of research in business and management links resilience with risk management and the generation of contingency plans for each detected potential disruptive event (Linnenluecke, 2017). Although it is challenging to anticipate external shocks, organizations should use scenario analysis to map the risks, practice how to react to distinct outcomes, and generate contingency plans for each. Accordingly, by assessing the risks of forthcoming challenges, the organization can learn and develop the relevant capabilities, developing a sense of reality and improving preparedness for future events (Kantur & Arzu, 2012).

A third group of features that distinguish agility and resilience are related to their strategic relevance to organizations. While agility is relevant mainly due to its strategic proactivity, resilience is mostly strategically reactive. Agility is about sensing, anticipating, and being ready to respond quickly to external environmental turbulence, using proactive adjustments that will allow organizations to improve their strategic position (Lengnick-Hall & Beck, 2009). In contrast, resilience is related to an organization's survival. Due to this feature, strategic movements are made through reactive adjustments and countermeasures to the disruptive event, aiming to restore its former position, generally through a positive transformation process (Lengnick-hall, Beck, & Lengnick-hall, 2011).

Due to their responses to environmental changes, which differ in nature, agility, and resilience also lead to very different organizational outputs (see Figure 5). As a result of the reaction to disruption aiming at an organization's survival, resilience mostly targets conserving

the organization’s value. Since agility acts by proactively taking advantage of opportunities and avoiding threats, the organization tends to improve its strategic position, growing and creating value. In terms of output, what agility and resilience have in common is that both improve the organizations’ competitiveness.

Although these five main features allow us to view agility and resilience as different concepts, some commonalities can be helpful in developing both adaptive abilities. Both demand organizations scan their environments, search for changes that can represent opportunities or threats, and respond accordingly. Organizations need to apply their cognitive sense-making to be ready or prepared to manage changes when they occur. Agility and resilience also demand action to respond to environmental changes. Agility involves responding to changing circumstances and taking the necessary actions to gain competitiveness and growth; resilience deals with reactions to disruptive events to maintain competitiveness and value conservation. In summary, both abilities require organizations' attitudes and behaviors toward the changes to elaborate and respond accordingly.

Due to the drivers of action, agile and resilient organizations are similar in their focus on continuous improvement and adaptability (Teece, Peteraf, & Leih, 2016). Organizations must continuously assess their products or services, structures, processes, skills, strategies, and systems, making necessary adjustments and changes. This process requires a culture of learning to continuously acquire new knowledge, skills, and insights, considering failure as an opportunity for growth and improvement. In agile and resilient organizations, organizational structure and culture enhance learning and knowledge sharing (Warrick, 2017).

Adaptive Ability

Adaptive ability refers to the amount and variety of resources and skills possessed and available for maintaining viability and growth relative to environmental challenges (McCann, Selsky, & Lee, 2009). It is a combination of agility and resilience. As marketplaces have been experiencing increasing turbulence and unpredictability, bringing a global landscape of deep uncertainty (Teece, Peteraf, & Leih, 2016), scholars argue that organizations should develop adaptive abilities to be better prepared, fitting to existent contingencies by building a repertoire of potential answers to predicted or unforeseen issues (Staber & Sydow, 2002). Agility brings a culture of openness to change and a context of flexibility in the processes, resources, systems, and routines, which assures swift responses to changes through a more effortless flow of work, people, resources, and ideas. Resilience provides a 'robustness' to systems, built on a strong sense of a valued identity, common purpose, and shared beliefs, with creative and prompt responses to minimize the impact of jolts that cannot be avoided and with the ability of the firm to reinvent itself around core values. High adaptive ability provides the firm the opportunity for assertive market moves that can dislodge competitors that do not possess the adaptive ability.

In this sense, the adaptive ability is like agility, enabling firms to make resource commitments considering tensions involving alternative courses of action while staying nimble and flexible. This ability to favorably manage the tension between risk management and uncertainty management is essential in establishing the level of adaptive organizational ability (Teece et al., 2016). Fourné, Jansen, and Mom (2014) show that managing these tensions and simultaneously trying to enact global complementarities while capturing local value will enhance adaptation as a meta-capability. Thus, as Linnenluecke (2017) and Gligor, Gligor, & Holcomb (2019) argue, there may be an art to adaptive ability management, a skill that helps the company

reprioritize company processes (customer-centricity focus, empowering, and bringing business units together) in a synthesized manner.

For internationalizing firms, agility and resilience enable them to create and deploy combinations of abilities in balance over geographies and time. Multinationals make strategic commitments with these combinations while staying nimble and flexible and searching for certain levels of stability. When EMNEs face context-specific and complex circumstances while operating within markets, they will deploy their adaptive abilities in specific ways, changing the relative emphasis on each over time and space and trying to excel at both stability and dynamism (Klarner & Raisch, 2013).

Methodology

To address my research question and underscore knowledge developments, I opted for a multiple case study research design (Eisenhardt, 1989a; Yin, 2018). Although inductive designs can lead to concerns about external validity, I argue that the lack of deep insights into this complex phenomenon under study justifies this choice (Miles, Huberman, & Saldaña, 2014; Shah & Corley, 2006). This research design also allows the researcher to use a process of exploring and developing preliminary theorizing to better understand the phenomenon. To investigate participants' perspectives regarding their experience with the research constructs, I used data from semi-structured in-depth interviews (McIntosh & Morse, 2015) and information from EMNEs retrieved from their websites. Following Yin (2018), the questionnaire was submited to the evaluation of three experts and applied to a pilot sample of two companies to assure its content validity.

Understanding the Research Context

The global competitive landscape has been increasingly populated by internationalizing firms from emerging markets. Due to their institutions and consumption patterns, emerging economies have experienced fast changes and turbulence in their marketing environments, which reflect the firm's markets and strategies (Narasimhan et al., 2015). Strategies from these firms have been characterized by a lack of background in diverse cultural and institutional contexts, resulting in high variation in their performance across different countries due to the heterogeneity of their capabilities. Some scholars have dedicated their research to identifying these capabilities. In general, EMNEs have been considered to possess a higher political ability and organizational adaptability than those from developed markets (Guillén & Garcia-Canal, 2009). Accordingly, Hernandez & Guillén (2018) argue that the unprecedented heterogeneity and unpredictable changes in their home country demand firms from emerging markets to develop and apply distinctive abilities to increase their adaptability in foreign markets. I suggest that this adaptability results from the development of certain levels of agility and resilience abilities. However, little is known about what dimensions constitute such home-built abilities and how EMNEs apply them when internationalizing. To gain insights into the variety of arising dimensions within agility and resilience deployment, I adopted the firm as our research unit of analysis. The data comprises six Brazilian EMNEs from different sectors (manufacturing, technology, and services) to avoid industry-based bias.

Accessing Data and Sources

My interest is to contribute to a fuller understanding of how EMNEs embed novel elements - agility and resilience abilities – due to their previous experience in managing turbulences and disruptions they face. Based on that, two meta-topics were identified as core,

guiding the data collection about both organizational abilities: (i) building and (ii) deploying interventions. While building interventions provided valuable insights about the abilities' enablers, deploying interventions helped to understand what abilities are associated with applying the ability to respond to environmental changes. Additionally, questions were made to understand the context in which EMNEs operate, including the turbulence associated with their business environment, level of performance, and how they apply agility and resilience. Open-ended questions were also asked to trigger the interviewees' engagement. Over two months, two researchers conducted formal interviews with executives of Brazilian firms remotely via zoom. We interviewed an executive of each company. They were stimulated to provide experiences and relevant information throughout the entire interview. Although limiting the number of interviewees per firm can have some drawbacks, as organizational agility and resilience are linked with the firm's strategic positioning and actions, we argue that the top managers provide the necessary data and insights for the exploratory profile of this inquiry (Aguinis & Solarino, 2019). Moreover, this choice aligns with the research design, which searches for underlying patterns across the organizations. Table 2 provides an overview of respondents and firms' demographics.

Table 3 – Companies Demographics

Company	Interviewees	Time in Business (years)	Time Internationalized (years)	Number of Countries Abroad	Number of Employees	Annual Revenues (USD MM)	Percentage from Abroad	Industry
A	VP BU	11	11	1	201	< 50	80	Services
B	CIO	10	5	22	200	< 50	30	Digital Economy
C	CEO	14	5	4	280	< 50	15	Services
D	VP BU	85	60	> 70	1000	50-249	50	Manufacturing
E	CEO	10	6	98	120	50-249	90	Digital Economy
F	CFO	45	29	>30	200	50-249	70	Manufacturing

Analyzing Data and Identifying Patterns

I built my analysis and theory development on an inductive qualitative approach (Eisenhardt, 1989a; Miles, Huberman, & Saldaña, 2014). As I aimed to better comprehend the presence of agility and resilience within the companies of our sample, all interviews were transcribed, and individual case histories were compiled. Next, data were analyzed using coding techniques (Campbell, Quincy, Osserman, & Pedersen, 2013; Miles, Huberman, & Saldaña, 2014), with the support of N-Vivo 12, to identify the abilities employed by firms when building and applying agility and resilience to manage the faced changes and disruptions (Hillmann & Guenther, 2020; McCann, Selsky, & Lee, 2009). The analytical process followed a three-step process, including coding, categorizing, and abstracting to higher-level concepts (Gioia, Corley, & Hamilton, 2013; Locke et al., 2008). These steps are described below.

Step 1: Identifying first-order codes

First, two researchers read each interview transcript and notes, engaging in the process of open coding (Miles, Huberman, & Saldaña., 2014). This first round of coding provided several features related to agility and resilience, comprising 137 different codes. When the features became apparent, we focused on descriptions of experiences involving them. This coding process resulted in 44 first-order codes describing the main features associated with agility, such as “action-oriented” (e.g., companies A, C, D, and E) and “team work” (e.g., companies B, C, D, and F) and with resilience, such as “plans that do not work” (e.g., companies A, D, and F), risk analysis (e.g., companies A, B, and C) and “reviewing plans” (e.g., companies A, and E). During this stage, some relationship between the features due to agility and resilience emerged, providing important insight for the analysis, such as “the sensemaking of the environment helped us to avoid a crisis when the Pandemic came” (company C).

Step 2: Identifying first-order codes.

Next, I grouped the first-order empirical codes into second-order conceptual themes (Gioia et al., 2013; Pamphile, 2022). This process of axial coding (Miles, Huberman, & Saldaña, 2014) was made by exploring relationships among the groups of first-order codes and interacting back and forth between data and the literature to better understand emerging themes. For example, the ability "scanning" in agility emerged around three codes: (a) monitoring competitors (e.g., "we are involved in some partnership with competitors… bringing information". – company B), (b) crosschecking clients' demands (e.g., "Listening what the consumer wants and trying to work around to give that to him." – company F), and (c) market dynamics level (e.g., "…what is the growth perspective in each segment that we operate in each region." – company D). This step also involved analyzing topics related to the different skills and abilities possessed by EMNEs and the way they used to manage the changes. Then, I continued interacting with the existing literature, searching for support and bringing sense to emerging categories, as prescribed for inductive analysis (Pamphile, 2022).

Another insight derived from this coding step was that some EMNEs navigate between agility and resilience abilities, varying their levels according to their design, structures, processes, and routines. EMNEs counting with more stable structures and processes possess less agility and more resilience (e.g., "in terms of agility, the company supports, but at the same time, we need to be very careful. Everything goes to the management. Everything we need to ask for approval… we need to ponder the risk". – company D). On the other hand, EMNEs with more flexible structures and processes are more prone to have agility (e.g., "the size we have and by the hierarchical structure that is very small, using teams, we get to have a speed that most of them don't have." – company C). However, some of them also use several resilience elements in their

responses to turbulence, such as risk assessment and contingency plans (e.g., “testing the things that are showing up is better than keep waiting for an abrupt change.” – company C). A set of abilities that firms build and apply to manage changes emerges as a result of this step, resulting in 44 second-order codes for agility and resilience.

Step 3: Aggregating second-order themes into dimensions

In the final step, I searched for relationships between the themes (i.e., abilities), theorizing their connections to building and applying agility or resilience to respond to environmental changes. Five dimensions were identified, forming the basis of the conceptual model (Gioia, Corley, & Hamilton, 2013), as shown in Figures 6 and 7.

The five dimensions emerged from a deeper analysis of the first-order coding in which common patterns within it were identified. For example, all abilities related to the processes and activities involved in acquiring, processing, storing, and using knowledge and information that emerged from the interaction between the firm and the environment were labeled the “cognitive” dimension. Throughout the coding process, I observed mechanisms used by EMNEs to acquire knowledge (e.g., sensing the market, listening, and understanding customers, competitors, etc.), processing ambiguities, transforming knowledge and information into opportunities, and identifying threats. Additionally, abilities associated with attitudes and behaviors toward how the EMNEs manage the environmental changes were integrated and labeled as “behavioral.” The codings indicated how EMNEs engaged in problem-solving and how the decision-making process occurred.

1st Order Concepts – Real world		2nd Order Themes		Aggregate Category
• Scanning features of the market • Dynamic environment chaotic • Different changes and different directions • Changes in customers' needs • External dependency • Environmental changing (no environmental of the future)	→	Scanning the environment		
• Measuring everything • Analyzing issues due to • Using Marketing intelligence • Analyzing market dynamics	→	Data analysis	→	Cognitive
• Building sensemaking • Acquiring customers' feedback • Filtering clients' needs in a good way • Understanding customers' needs changes	→	Sensemaking		
• Using the customers' openness to experimentation • Being open to more opportunities and accelerating growth	→	Take advantage of opportunities		
• Testing before changing • Openness of shareholders • Creating a conducive environment for changes • Programs, incentives, and internal process	→	Openness to changes		
• Competency building and cross-training	→	Continuous learning	→	Behavioral
• Learned to manage resources efficiently • Platform available to employees sharing and collaborating on projects	→	Collaborate and work in teams		
• Quick decision making • Testing not to make mistakes	→	Action-oriented		
• Creating operational flexibility • Creating an in-house market research team	→	Continuously improving the organizational configuration		
• Full-time team seeking things in the market • Looking for new ways to develop (services/products)	→	Creating, sharing, and applying knowledge	→	Structural
• Creating flexibility in adjusting, embracing, and changing • Anticipating risks effects (e.g., ports diversification)	→	Building flexible processes, systems, strategies, and structure.		
• Implementing digitalization • Rearranging the teams to respond.	→	New strategies, processes, routines, and systems.		
• Evaluating the new initiatives based on their ramping pace. • Developing a varied of resources available to access easily	→	Existing capabilities, processes, and resources to achieve better results.	→	Response
• Checking if the initiative is not ramping at the pace that we expect, we change it or eliminate it to move to the experimentation	→	Deploy and redeploy the resources		
• Exceeding expectations • Position to react before something damages the company	→	Ability to quickly take the required action when needed		
• Sustainable cash position to manage without stress	→	Ability to thrive during turbulence and uncertainty		
• Failures help to learn, • Celebrating failures • Mistakes feedback helps improve plans • embracing failure	→	Ability to continuously learn and adapt to new knowledge and information	→	Improvement
• Encouraging experimentation • A solution can come from anywhere • Partnerships with other companies to develop the knowledge we do not find in the company	→	Ability to develop new skills and capabilities		

Figure 6 – Data Structure for Agility.

1st Order Concepts – Real world		2nd Order Themes		Aggregate Category
• Reducing risks through acquisitions and strategies. • Listing, revisiting, and analyzing all risks. • Periodically discussing changes that can harm the business.	→	Risk assessment	→	Cognitive
• Making scenario planning was ready and planning the actions. • Predicting the future using scenarios.	→	Elaborating scenarios		
• Evaluating risk as part of the certification. • Sensing the risk due to new regulations and technologies.	→	Sensing the risks		
• Knowledge of each element harming the business and preparing a contingency plan • Investing in anticipated effects to reduce risk	→	Contingency plans		
• Embracing uncertainty • Revising the facts that might affect us • Being ready for environmental changes	→	Uncertainty and reality	→	Behavioral
• Building and communicating the purpose as a guideline for action. • Checking to what extent the action makes sense to the firm purpose. • Holding a sense of purpose and knowing what is done and where to go.	→	Sense of identity and purpose		
• Dealing with the consequences and reacting appropriately • Evaluating our raw materials source and decided to not be single-sourced	→	Doing what is required		
• Holding a corporate culture of being adaptive • Culture supporting to adopt to new situations quickly and respond to it	→	Corporate values		
• Investing due to potential changes as modus operandi • People are hired with resilient characteristics/profiles.	→	Maintain the organizational configuration	→	Structural
• Preserving the positioning during crisis and turbulences • Modus operandi established to face turbulence.	→	Ability to recover from unexpected situations		
• Being prepared for changes • Being ready for changes	→	Ability to resist the impact of changes		
• Increasing the stocks during the Pandemic. • Increasing the alternatives of suppliers and logistics. • Turning to online during the Pandemic before the lockdown.	→	Implement the plans to emerge from a crisis	→	Response
• Learning with the past plans. • Dealing with the consequences of failures • Discussing past decisions • Failing experiences • Dealing with plans that did not work	→	Learning from experience and failed plans		
• Looking for new alternatives • Efforts and investments • Leveraging from the uncertainty	→	Develop new skills and capabilities		
• Training employees to be prepared to disruptiveness. • Investing in information systems and digitalization	→	Adapt resources, processes, and routines	→	Improvement
• Rearranging resources to improve balance. • The transformation process of the company.	→	Rethink and redesign the organization		
• Our customers are our best partners. • Alliances and partnerships as strengths of the positions to support shocks.	→	Support networks		
• Coping and exploring new ideas. • Learning from responses. • Being stronger to face a new crisis.	→	Cope and learn from unexpected events		

Figure 7 – Data Structure for Resilience.

The abilities enabled by existing organizational processes and structures associated with some structural configurations (favoring flexibility or stability) were categorized as "structural." The structural dimension refers to organizational design, structures, processes, and routines enabling on hindering agility or resilience. The abilities related to how the EMNEs enact

responding to changes were aggregated and labeled as "responsive." This dimension revealed how the firms assess, adapt, develop, and deploy resources to respond to environmental changes. Finally, my analysis of the interviews shed light on some distinctive abilities that emerge from managing and responding to environmental changes. These abilities refer to organizational improvements that accrue from deploying agility and resilience. They were reunited in a dimension labeled "improvement."

Findings

Although the agility and resilience literature commonly perceives these adaptive abilities as independent of each other, they represent two facets of the same organizational challenge – managing efficiently within volatile, uncertain, complex, and ambiguous environments. Furthermore, both constructs are built on complementary organizational abilities across the same dimensions having a critical interplay and interdependence. The cross-case inductive analysis shows that firms simultaneously possess different levels of agility and resilience. I present the findings of this inductive analysis in two steps. First, I discuss the varying levels of agility and resilience within the EMNEs. This analysis resulted in a firm typology of agility and resilience competitive positioning. Next, I expand the cross-case analysis across the five dimensions supporting the theoretical development proposal.

A Typology for Conceptualizing Agility and Resilience

The analysis and integration of agility and resilience levels of EMNEs resulted in a typology with four distinct types of adaptive abilities (Figure 8). Based on my interviews, it was possible to infer each organization's agility and resilience level. To be agile requires identifying the relevant environmental changes and being ready to respond to changes by using a flexible structure and applying the firm's resources to act quickly. On the other hand, to be resilient

presumes mapping the risks and formulating contingency plans to be prepared to absorb, resist and react to unexpected changes or changes that escalate to crisis. Based on those qualifiers, I identify four types of adaptive abilities, according to their level of agility and resilience: 1) Agile resilient; 2) Agile but fragile; 3) Stable resilient; and 4) Rigid fragile. I will expand on each profile providing empirical support to these claims. I argue that highly successful organizations, *agile resilient*, embed high levels of agility and resilience simultaneously, enabling superior competitive responses to the different types of environmental changes they face throughout time and ensuring their growth and survival.

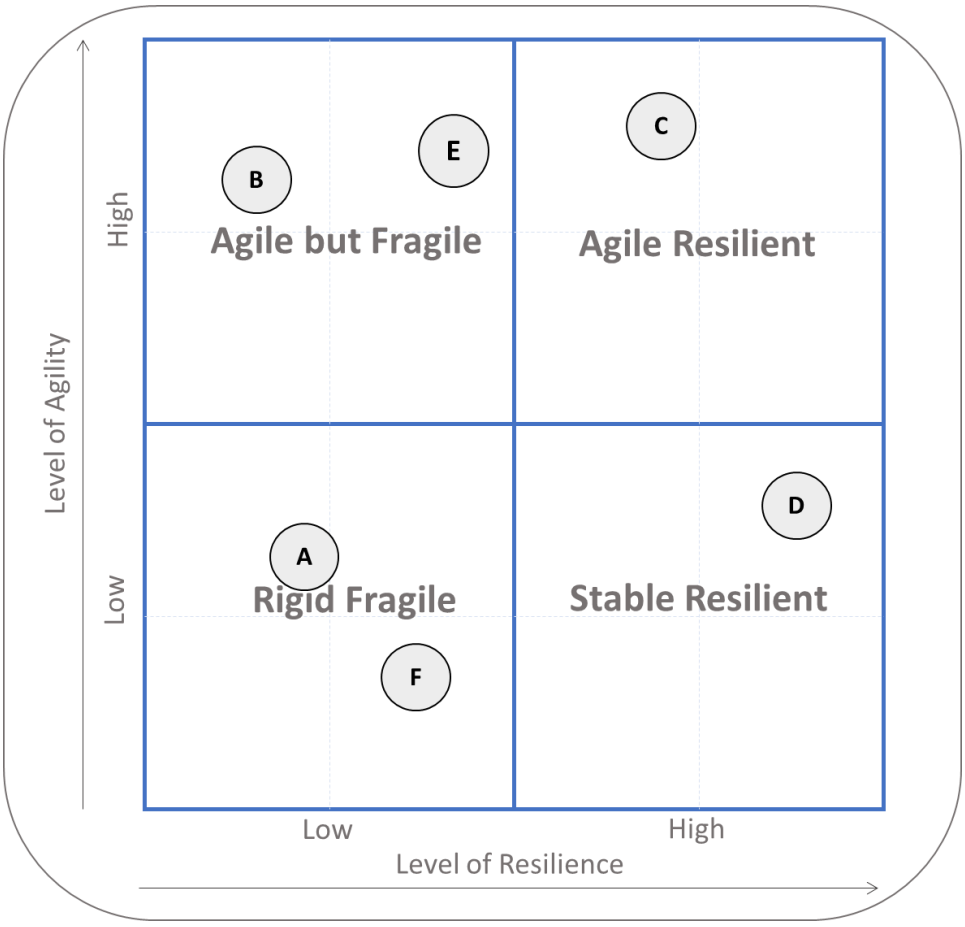

Figure 8 –Typology for Conceptualizing Agility and Resilience

Agile-Resilient

Agile-resilient EMNEs redefine market competition by simultaneously developing both abilities to anticipate environmental changes while being prepared to respond to disruptions. Although they are embedded in a very dynamic environment, which demands sensing the environment to take advantage of opportunities or avoid threats, they build a set of scenarios and contingency plans that allow them to be aware and prepared in case of disruptions. Company C provides a wide range of IT services in eleven countries, including "Robotic Process Automation (RBA), the development of digital products and services, IT solutions based on consulting, and the management of clients' portfolios of software projects." It operates in a very competitive and dynamic environment, which demands a high degree of sense-making to manage ambiguity and uncertainty.

> *"I think it [their market] has this difference from most markets because it appears innovations all the time, and there is no shortage of sources for us to understand that if you don't adapt to that change, you die. However, most of the time, this is a lie. So, you need to be in the market; you need to get to know what, in fact, your competitors are doing and mainly what your customers are in need to be able to understand whether or not that makes sense for the market. But for you to succeed, you must be fully ready for an opportunity. Then, yes! We are quite fast; I would say so ...". (C)*

Even anticipating changes, this type of EMNE adds a complementary risk analysis, providing robustness to their decision-making process:

> *"That is what we were talking about… the pandemic, we did the key turn in the following day. However, we also remained to figure out the scenarios. The*

catastrophic scenario, the half-catastrophic scenario, the not catastrophic scenario…". (C)

In company C, this is also related to complying with the demands of their certifiers.

"As we have been certified for a long time, you know, this thing of non-compliance, you usually have to look at several alternatives."

Moreover, *agile-resilient* is more likely to respond to changes quickly due to some structural features.

"The difference is the size we have and the hierarchical structure that is very small. We have a speed that most of them don't have." As the firm's configuration is well communicated to the employees, they develop a sense of purpose and identity that help the organization deal with changes. "People account for a big flexibility, for sure, because they know the organization and our culture." (C)

The organizational structure, culture, and values also provide stability and direction to the workforce during unexpected events. For example, company C is organized into collaborative and multidisciplinary teams (called squads), which are rearranged as necessary.

"So, we create multidisciplinary squads, squads within some areas. As a result, today, we can't live without them. It's simply a way of working on a daily basis. So, we are able to give accountancy for each day. It is also a good way of controlling and comparing between what you have planned forward that formerly the areas in isolation didn't have, and suddenly you incorporated it within the organization." (C)

Agile-resilient organizations also tend to deal better with changes, facing them as part of their evolutionary process. They develop an openness to changes, embracing uncertainty as part of their journey and encouraging people to suggest changes.

> *"We have created a process of innovation; people were going there to give their suggestions, I implemented it. According to the benefits of it, the person received a percent of that gain" (C).*

As they have well-communicated values, by providing a sense of purpose and identity, these EMNEs are action-oriented, and workers engage in doing what is needed when under big turbulences. According to company C, continuous learning through feedback and effective communication is another essential employee behavior that provides engagement to action.

> *"The constant feedback means that you have people who are fully aware of what the customer expects from them. This gave us, let's say, an ability for our people to understand what they are here for". When a crisis comes, the organization is ready to overcome it by easily deploying and redeploying its resources or adapting its processes and routines." (C)*

When a crisis occurs, the organization is ready to overcome it by easily deploying and redeploying its resources or adapting its processes and routines.

In summary, *Agile-Resilient* organizations display higher levels of agility and resilience operating simultaneously through a dynamic equilibrium. These firms not only are able to sense the environment to take advantage of the opportunities, but they also have contingency plans and risk assessments, enhancing their ability to react to environmental changes of various natures (i.e., turbulence and disruption).

Agile but Fragile

Due to their positioning, *agile but fragile* EMNEs prioritize speed over thoroughness when making decisions. This is the case of companies B and E, which operate in the digital economy niches where speed is a critical element of competition, providing their proprietary software and services to many countries.

> *"We are acting like a jet ski because we need to make some uh… turns in a very quick way against changes" (B).*

These firms are relatively young, and their leaders still display a "start-up origin mentality."

> *"Even so we have ten years as a company, it's in our DNA the start-up sense." (B).*

This mindset leads to a cognitive bias toward taking risks when responding to those changes.

> *"We are buying risk, a lot of risks. For example, when we choose a lot of industries to work with" (B).*

Moreover, when risks are assessed, EMNE does it in a "less formal and less organized way" without reflections on the quick decisions (E). Moreover, being agile and resilient is perceived as a trade-off.

> *"It's always a trade-off; resilience can block you a little bit from innovating. And then, agility can make you innovate too much, so it's always like the two… the two sides of a coin, and you need to make sure which one works better at each moment." (E)*

Another common feature is their lean structure and streamlined processes enabling quick adaptation to change, which facilitate well-defined goals for each individual role.

> *"We are super process-oriented, so having tools to understand if processes are working and adjusting that. "And then, of course, if we are process-oriented, that becomes an extremely powerful tool actually to make people achieve what they should achieve" (E).*

However, this design can make them more vulnerable to disruptions as there may be limited redundancies or backup plans to face unexpected changes. Although organizations run scenarios, they do not translate them into plans that provide preparedness and responses to a crisis if necessary. Moreover, most of the scenarios are made to support decision-making due to agile responses, sometimes developing alternatives.

> *"We have been learning how to better control risks by using our current status to develop alternative paths we can continue exploring." (E).*

An agile but fragile organization also prioritizes experimentation as a tool to act quickly, responding to changing market demands and staying ahead of competitors.

> *"We are open to embracing those new demands regardless if they're good or challenging… So, we could identify, develop, release and grow fast based on new trends and needs coming from major disruption events, such as COVID" (E).*

This pattern also requires a high tolerance for failure and an openness to learning from mistakes.

"There is no bad consequence for failures; there is just learning. So, it is excellent. We embrace it in a really deep way, and we actually celebrate it" (E).

In some cases, the failures are only superficially coped, associated with a fast decision-making but not with an evolutionary learning and improvement process.

"We have a fast failure principle related to our initiatives that we have, for example, I will start this product, and if that is not ramping in a… pace that we are… expecting for, we change it, and then we eliminate the product without uh… We are not in love with the product" (B).

Although this type of organization is predominantly agile in its behavior towards changes, when changes come, they combine agility with some traits of resilience to support the management of adversities.

"We do run scenarios, and always the worst ones. And that comes a lot from me. I believe I'm paranoid, for sure. There is that book, I believe that was from the Intel founder: "Only the paranoid survive." I love that book. And I do agree with him. And yeah, we're paranoid here. So, we put way more time here, thinking and discussing what can go wrong than what can go right. And that's a crucial part of our decision-making process. (E)

In addition, companies B and E use collaboration and empower teams to deal with changes. However, agility is displayed with higher levels of resilience, which is reflected in their strategies. Company B embeds agility within its strategy.

"When you are, and that is just my take on that when you are in this really dynamic business environment in a company that changes really fast, you need to pick in what part you are dynamic, and, for us, it is really on the company strategy, the company goal to market, the company positioning. And then, we need to bring some stability to make that possible. And stability on that is really making sure that the team is respecting firm growth; the firm is not growing because of individual development only, so we need to have the team on the same page" (B).

This type of organization is mainly focused on short-term than long-term management. This feature does not provide enough stability to adequately manage their human resource, reflecting in high turnover rates, resulting in turn in inadequate identification and communication of corporate values and a weak sense of identity and purpose from the employees.

"How can we address our culture in a high rate… turnover rate and with a lot of new positions open in our company. I guess … we need to be stronger on that" (B).

"We try to preserve corporate principles, but really core ones, like, customer… Nevertheless, the way that those principles reflect on our internal day-to-day change is based on the external factors and how we use those corporate principles to behave here" (E).

In summary, *Agile but Fragile* organizations are highly agile but possess some degree of resilience. These organizations are able to move quickly and make rapid changes but may struggle to maintain stability or recover from setbacks. They may have a culture of risk-taking and

experimentation but may also be prone to burnout, turnover, and other challenges related to rapid change.

Stable resilient

Stable-resilient organizations are highly stable and robust but may lack the agility to manage environmental dynamics. These organizations can maintain a strong foundation of stability and reliability but may struggle to adapt quickly to changing circumstances, taking advantage of new opportunities or avoiding threats. They have a culture of consistency and risk aversion, which may result in being slow to innovate or respond to emerging trends. EMNEs within this quadrant are more prone to possess resilience than agility. One organizational feature that enhances its resilience is the nature of its product or service and operations, as explained by D:

> *"Because this is a very complex operational… operationally speaking, it's a very sensitive business. We produce some very dangerous products". (D)*

As these organizations have to comply with norms and regulations to produce and deliver their products and services, they face higher pressure to be prepared to manage unexpected events. For example, company D embraced risk assessments of its business environment as part of its strategic positioning.

> *"We have developed a very diligent process of dealing with uncertainties. It is not that, you know, we are just good at dealing with uncertainties. We kind of predict some uncertainty that might happen. For instance, we have a diligent process of dealing with risks, so we have very well mapped all the risks that we have at different levels in the organization, from raw materials cost to critical assets that can break; from a market perspective, etc. We know the brutal facts*

that can be very harmful to the business, and we have contingency plans in place for almost all of them" (D).

EMNEs from this type of organization may also need to develop a certain level of cognitive mindset to be able to process information and data and manage environmental changes, as suggested by company D:

"We constantly check the competitors, what is going on with the raw materials, what is going on with the markets. Everything. They demand a lot of this kind of information from us" (D).

However, the speed of response in these organizations may be constrained by their rigid organizational structure and processes.

"Sometimes, we have a problem… if it is a real problem, and I don't have the competence to take the decision, I call the CEO, next day or the day after, it is decided" (D).

Additionally, regulations can also be a constraint, influencing the speed of response.

"We work with a very sensitive product... A dangerous good. Sometimes we cannot, when we are in a negative circumstance, if you have an issue, for example, to ship the goods or … because of certain change in the rules… shipping line cannot ship the goods, we cannot force them to do so" (D).

As stable-resilient EMNEs face more significant risks associated with their operations, they are more likely to develop strong corporate values and a sense of identity that molds behaviors toward changes that escalate to adversities. On the other hand, this type of organization does not foster a culture of creating and applying knowledge and experimentation.

> *"There are values that are stronger within our employees than others. For instance, as I mentioned, safety is very strong. If you say, what is the level of relevance between… comparing safety to innovation? Innovation is lower. I think it is much lower" (D).*

In summary, a stable-resilient EMNE is prepared to face uncertainty and respond to unexpected changes while maintaining its core functions and values. It possesses a strong foundation built on risk management practices across its structure, processes, and routines.

Rigid-fragile

Rigid-fragile EMNEs do not engage actively in building and employing high levels of agile or resilient abilities to manage environmental changes. These organizations do not perceive market dynamism as relevantly impacting their activities. Although they possess a mindset acknowledging risks towards their operations, they do not prioritize anticipation and preparedness. Company A provides services to Brazilian firms related to "cross-border tax compliance, planning, and strategy, including raising venture capital" when internationalizing. The company deals with market and regulatory environments which do not face frequent or abrupt changes. Company F is specialized in "manufacturing and supplying foundation drilling rig and equipment" for engineering projects. Its business is founded on strong partnerships "with suppliers that we have been working with for a long time" and "with other companies to provide customer service." According to the executive, as changes in its products demand high investments and long lead times to be made and delivered, the recent pace of change in its industry can be considered "faster but still predictable." Despite the differences between Companies A and E, their strategies depend on their partners, networks, or suppliers.

> *"All of our machines depend on Company W (third-party supplier), which is the market leader. So, we will follow their evolution accordingly (F).*

"Our business is based on network and partnerships" (A).

Then, their agility and resilience rates will depend mainly on their suppliers and partners. For example, they tend to scan their environment, searching for trends related to technology, which they consider one of the most important environmental aspects.

> *"We are always looking for what is going on, what are new technologies and… So, we are very active on that" (F).*
>
> *"We have a kind of radar for innovation from our competitors all the time" (A).*

However, they neither scan other environmental actors (i.e., competition and customers) nor sense the information searching for opportunities or threats. "It is not our best area" (A and F). On the other hand, they also do not have a cognitive mindset toward assessing risks, which could allow them to build scenarios and contingency plans.

> *"We are… not good at having contingency plans or scenarios. We visit events and expositions, and we see what is going on, but we depend on our supplier making the decision. Maybe we should improve on that" (F);*
>
> *"Right now, we do not have to evaluate our risks. We need to, you know, we're investing in this… but right now we're not good on this at all" (A).*

These EMNEs display similar behaviors, reflecting their lower levels of agility and resilience.

> *"We are trying to provide solutions, and we are trying to incentive… to encourage all employees, trying to create this (openness to changes and action-oriented) mindset to be agile, you know, ahead of everything, everyone,*

all the time… but we do not have right now all employees so committed on this" (A).

"I would say it is more concentrated in the upper-level echelon… We need better spread-out through the company the openness to change" (F).

Similarly, the corporate values and the sense of purpose are not well developed to allow organizations to manage disruptions if necessary. For example, company F develops a sense of purpose associated with its strategic thinking:

"Everybody… I mean most people in the company know about our purpose, what we do, and where we want to go" (F).

The acknowledgment of values by employees is not considered wide. Company A associates this with the strategic view of the EMNE as a learning company:

"It is again a process… We are trying to create a learning company here that, you know, can understand and practice all these corporate values. So, it is somewhat wide".

In summary, rigid-fragile organizations do not present high levels of agility and resilience in their international operations. As their strategies are built on stable partnerships, they do not see their business environment as too dynamic. Consequently, they do not have a mindset that demands high levels of anticipating changes or preparing for environmental disturbances.

Dimensions of Agility and Resilience

This section expands my findings about the five aggregated dimensions of agility and resilience. The discussion follows analytical and rational processing. Starting from EMNEs'

cognitive abilities in assessing the environmental changes, I move to their behaviors toward turbulence and disruption, explaining how EMNE's organizational design, process, and structures support the adequate management and actions to respond to those changes. Additionally, I explore the perception that agility and resilience transform organizations. Although this processing suggests some linearity between the dimensions, the structural dimension acts as a foundation that enables the organization to behave and respond appropriately. I will explore their dynamics and interactions further in the theoretical development section. This part develops each of the dimensions and their emergence across the data analysis.

The Cognitive Dimension

To cope with environmental circumstances, the EMNEs develop different processes, activities, and abilities that help them to detect and evaluate unfamiliar developments, assess and manage ambiguity and uncertainty, and be prepared for future disturbances. According to executives from EMNEs, their success in foreign markets is related to the cognitive background of coming from a country whose business environment is highly volatile and subject to disruptive events (B, C, D, and E). As stated:

> *"Exporting to that number of countries, we have problems everywhere, with ports, with logistics routes, with a customer's unexpected events. And we… Compared to our peers, I think we've done an amazing job compared to what we have seen in the market. And, I don't know, partially, this is characteristic, I think… of… Brazilian companies or emerging market companies, because we are, I think, more… used to dealing with uncertainty than other economies" (D).*

According to their cognitive abilities, EMNEs deal with changes more proactively, taking advantage of opportunities and threats and being agile.

"To succeed, you must be fully prepared for opportunity. Then, yes! We are quite fast; I would say so" (C).

Others scan changes in a more predictive way, emphasizing their preparedness for extreme events.

"It is not that… we are just good at dealing with uncertainties; we kind of predict some of the uncertainty that might happen. For instance, we have a diligent process of dealing with risks, so we have very well mapped all the risks that we have in different levels in the organization" (D).

However, some EMNEs tend to counter with certain levels of cognitive agility and resilience simultaneously.

"We never have an alternative. There are several, right? …because sometimes the opportunities make you blind and then you only see one solution... we also remain to figure out the scenarios" (C).

As Brazilian EMNEs are accustomed to adapting to changes, they tend to have a certain level of scanning and data analytics to support their decisions regarding environmental changes.

"We have people from finance that will see the macroeconomic trends or foreign exchange rate dynamics; the supply chain is involved in the cost of raw materials. On the market side, we have a marketing intelligence team that will see the growth perspective in each of the segments we operate in each region". (D)

Some firms with higher levels of cognitive agility use those data to take advantage of opportunities and threats.

> *"Our company operates with a really short period of forecast, and we are extremely open and even, in a more formal way, to adjust the forecast every time we need. So far, we have been able to embrace the uncertain moments well and use that in our favor, using data and leveraging some protections that we were able to put in place to make us more prepared for that kind of action". (E)*

Moreover, EMNEs are subject to international regulations or certifications due to their products and services. They use scanned data in their process of risk assessment and formulation of contingency plans, which enhance their levels of cognitive resilience, such as observed in C and D.

> *"In the certification process, you have a certification item that is risk management, right? So, at least every six months, you have to revisit all those risks, analyze and formulate contingency plans". (C)*

Although some EMNEs operate in highly dynamic competitive environments, possessing high levels of cognitive agility and being more prone to experimentation and taking risks, some of them have been increasing their levels of risk assessment to orient their action toward turbulence.

The Behavioral Dimension

Besides their cognitive framing, EMNEs also present observable attitudes and behaviors when responding to changing situations. Again, the different nature of change conditions (i.e., turbulence or disruption) shapes the way organizations will behave. When dealing with

turbulence, EMNEs consider themselves open to changes, leading to a culture of adaptability, flexibility, learning, and growth. Company E explained:

> *"Change is part of who we are here. We learn to embrace change as a vector for growth, not as something we are afraid of... So, we learn how to use it in a really efficient manner that shaped a lot of our decisions, our culture, and who we are today. So, we are here really loyal to the company's growth, ensuring that 'E' can adapt as much as possible". (E)*

Besides openness to change and continuous learning, some EMNEs have pointed out that collaboration through cross-functional teams is an attitude that emerges when responding quickly to changes, as explained by company C:

> *"Every initiative to quickly respond involves different people. They're always multidisciplinary teams working on responses to change". (C)*

When managing disruptive events effectively, EMNEs have reported that certain behavioral traits emerge, such as the ability to accept ambiguity and uncertainty, as explained by company C:

> *"(We are) all the time trying to pick up something that's going to 'destroy' our business. So, I talk: 'Guys, there must be something that somehow is going to destroy our business,' and I need to be prepared at least to say, 'man, I've seen it, I know how it works, and how to respond to it". (C)*

Company C adds that the preparedness to respond to disruption is also associated with the firm's ability to communicate widely and share company values, creating a sense of identity that allows them to engage in doing what is needed.

"I believe that the vast majority knows our purpose; it was created, built, communicated, and it has always served us as a guideline for our actions… When the pandemic crisis emerged, we had people who were very well prepared to transform what our values are into practice". (C)

The Structural Dimension

EMNEs have related their levels of agility and resilience to the way organizational structure supports their actions toward changes. For example, company C explains that its success in quickly responding to uncertainty is due to its high level of flexibility:

"Most people have been in for many years within the company and have already played diverse, different roles. So, as we understand where the market is going, we obviously invite people to occupy certain positions to quickly respond to changes… We are 90% of human resources a 10 of physical resources… The difference is that we have a speed that most of them don't have due to the size we have and by the hierarchical structure that is very small,". (C)

However, depending on the speed of change, this flexibility is not enough to take advantage of them, as explained by company B:

"Data, nowadays, is a subject that has… … suffered impressive changes in a short period of time. So, because of this, I can consider we are not so quick because the… it is almost impossible to follow the changes at the same pace that the changes occur. So, we are tested, we are challenged every day about this". (B)

Moreover, Company E highlights a side effect of this flexibility:

> *"I believe a side effect of agility is somehow impacting stability in a way that it can be perceived as negative. I am not saying that it is not good. I believe that is good, and it is part of the recipe. But yes! When you are too open or too quick to adjust and review plans and paths too often, you are in a moment of material instability. That can impact many people's perceptions about the future and where we are going as a company. So, this is one of the reasons we bring our forecasts and vision not as a long-term, but as a short-term one". (E)*

Some EMNEs repute knowledge management as having an important role in dealing with fast-changing environments. As explained by company C:

> *"For example, we have a program called high-performance development. What does that mean? I have a community of people who work today allocated within our customers, and internally, we have more people inside the company in the consulting area. This group of people supports the whole company. There is an open channel for those working in the field with the clients. Suppose they experience some difficulty in implementing new knowledge. They have a body of consultants here that supports them. You send to Brazil whatever doubts you have. If we know it, we respond on time; if we don't have the know-how, we quickly create a team to help them". (C)*

The instability mentioned by this EMNE (company E) shows that even companies operating in a highly dynamic environment search for a certain level of stability. Accordingly, in

times of disruption, organizations need stability in order to be able to react, resist and recover. Company A recognizes stability as fundamental to the company reacting quickly.

> *"We do know that we need to be prepared for those turbulences… So, for that, we have been investing, because of this potential turbulence, in our modus operandi". (A)*

He added that this stability was core to their management of the effects of the pandemic:

> *"For example, during the COVID pandemic, we grew a lot because the modus operandi of our business was using zoom or other tools to stay online all the time, so when the world moved to the virtual environment, we were already there and prepared." (A)*

The Responsive Dimension

EMNEs associate their quick actions and responses with abilities used to deal with turbulences in Brazil. They take advantage of existing capabilities, processes, and resources, adjusting them to build the response to changes quickly. Company E highlights that its efficiency in deploying and redeploying resources is one key element of organizational agility.

> *"I believe we are highly efficient in deploying and redeploying resources. I believe that comes from our background in Brazil. When we started 'E' in Brazil, the amount of resources available in terms of funding, support, and help was limited. When I decided to come to the United States, it was a really challenging moment where we couldn't find support for that. So, we learn how to use our resources in a really efficient manner that shaped a lot of our decisions and our culture". (E)*

Significant business environment shifts may also require organizations to respond by using their abilities to adopt, develop, and implement new strategies, processes, or capabilities, as well as providing autonomy to employees or teams responding to subtle changes, as suggested by Company C:

> *"The action is quick and committed whenever people have some difficulty, issue, or unexpected thing until solving. The answers are really very fast. People have much autonomy in the company to make decisions. Every action involves different people. They're always multidisciplinary teams working… the company is good in taking advantage of the 'squads' to create speed (in responses), integrating existing resources and people, if necessary". (C)*

An important feature of the EMNEs' responses to the impacts of disruptive events is related to implementing the contingency plans developed during the risk assessment or other plans that emerge from the crisis, as explained by Company D:

> *"We anticipate COVID. When COVID hit the company, we were already in lockdown at home… Because we have people in Austria and then the lockdown came there earlier, we started to have crisis meetings and tons of action plans: Increase the stock! Place more orders!". (D)*

However, as plans can fail, companies have reported that during the crisis, they have to use their experience and learn from failure, as explained by company C:

> *"Obviously, when a stronger disaster happens, there's no way… you will not accuse the scanning (process). Patience! After the shock, you have to pick up other alternatives… We start testing things. Even because you have to test it, if*

you don't test it, you'll never know if it's going to work. Eventually, things sometimes don't give the expected result for the first moment, but no suffering, no suffering because of that. So, I think we are good in that aspect... And the key turns quickly… We learn and adjust the plan". (C)

The crisis also demands organizations to adapt their skills, capabilities, or processes during the response to its effects. Although Company E is *agile but fragile*, during the Pandemic, it adapted its processes and resources to respond to the increasing demand for online products.

"We are highly specialized. So, solutions were addressed by a smaller group, not a bigger group… The group had a different configuration because of the nature of the problem… So, by adapting our resources and processes, we were able to release three really big products in the middle of COVID, make that product, and gain a lot of traction. The combination of those products is a big new offer we had (to respond to the increasing demand)". (E)

As partnerships are one of the most used strategies by EMNEs (Hernandez & Guillén, 2018) to access resources and abilities abroad, some firms in our sample reported that their responses to the crisis have also relied on their partners. For example:

"In the US, it's (the business) 100% based on partnerships, including our competitors. During the Pandemic, they provided additional resources so we could handle the changing demand". (D)

The Improvement Dimension

Exploring data also provided insights about evolutionary organizational changes that emerged as consequences of the responses applied (agile or resilient). Although agility and

resilience are often associated with action directed to respond to the change, they can also be directed toward stability by allowing organizations to build on past experiences and strengthening their structure and behaviors. For example, companies A and C rearranged their resources and changed the way their services were delivered. This change was incorporated into their routines and processes, continuing even after the Pandemic was over, as explained by Company C:

> *"I think a lot about our investments… all of them in the processes, ok? And we've come up over that whole time developing an ability to have a broad look, because sometimes a certain crisis happens, a specific problem… things change. So, the bases are there… we learned and changed a lot". (C)*

Company A endorses this improvement by stating that:

> *"It's a process that we have been improving. Specifically, the processes, people abilities, training, and technology. We're much better prepared than before; we can face the turbulence". (A)*

Due to the environmental dynamics, EMNEs have shown growing concern with the dynamics of their business environment and their need to apply improvements in their ability to manage turbulences and disruptions. Almost all companies have associated formulating new strategies with their efforts to strengthen their agility and resilience (A, C, D, E, and F). For example, EMNE D explained that they are focusing on increasing flexibility:

> *"We are investing in equipment, we are investing in production, we are investing in a site in Europe, increasing our stocks there." (D)*

Theory Development and Propositions

The main assumption of my essay is that firms from emerging markets possess some levels of agility and resilience abilities that enable them to better manage changes and uncertainty in their international operations when necessary. This was evident from the inductive analysis of the presence of agility and resilience manifestations for each EMNE. Based on the empirical emerging themes, I argue that all EMNEs possess agile and resilient abilities to some extent that are applied according to environmental changes. Although some authors suggest that organizations should build and apply both resilience and agility to increase their competitiveness in turbulent environments (Gölgeci et al., 2019; Lengnick-Hall & Beck, 2016), few studies have provided empirical evidence of that (e.g., McCann, Selsky, & Lee, 2009 is an exception). The proposed typology reinforces the idea that agility and resilience are present in EMNEs at different rates. Moreover, it also suggests that agility and resilience abilities are used in an interlinked way allowing organizations to be more adaptive to environmental changes. This finding suggests there is an interlink between them, even though its empirical evidence is scant (Holbeche, 2019).

I also contend that agility and resilience are interdependent facets of the same coin – the organizational strategy to manage environmental dynamics. The inductive analysis indicated that agility and resilience operate simultaneously and dynamically. As such, I propose to integrate agility and resilience, offering a dynamic theoretical framework incorporating those dimensions resulting in a better sustainable competitive advantage. In Figure 9, I present the framework integrating the five dimensions –cognitive, structural, behavioral, responsive, and improvement- supporting the development of seven propositions guiding a future research agenda. This theoretical framework indicates the relationships between the dimensions and their dynamics

between and within agility and resilience, shedding light on the mechanisms through which organizations anticipate, prepare for, and respond to environmental changes.

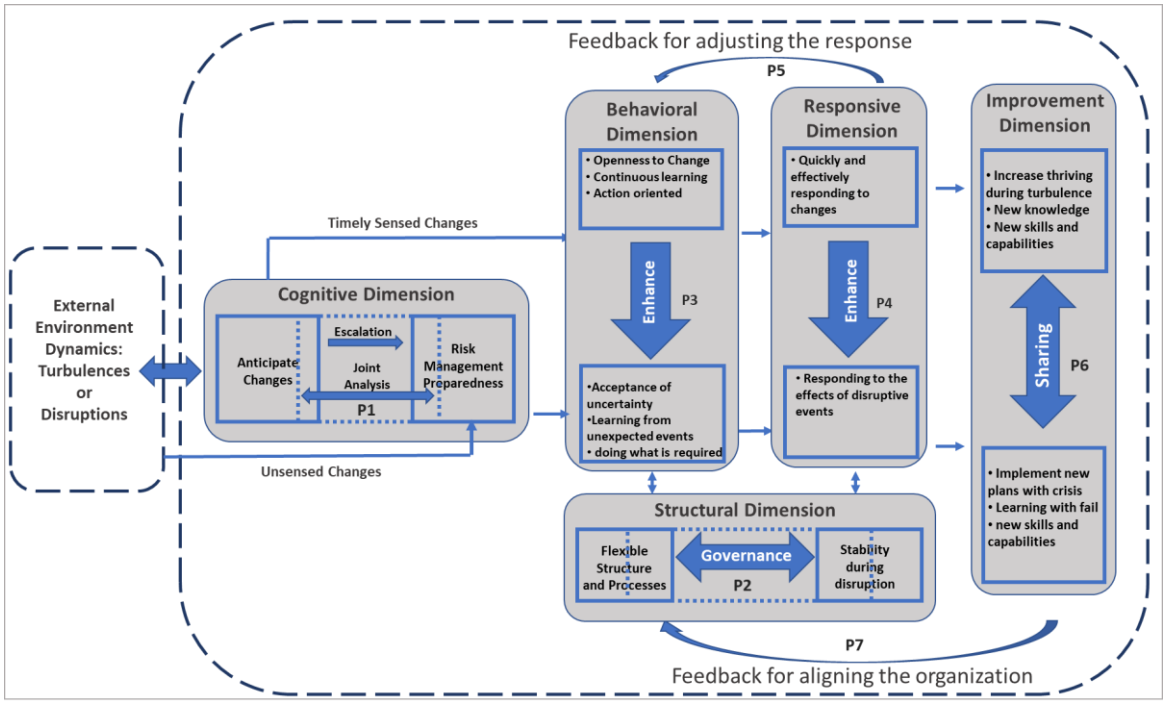

Figure 9 – Integrative Theoretical Framework for Agility and Resilience

As shown in Figure 9, responses to environmental changes demand that organizations develop cognitive, behavioral, and responsive abilities which will facilitate the anticipation of the attitudes toward and the responses to triggering events. I argue that cognitive ability provides information about specific knowledge identified as opportunities or threats that trigger behaviors towards these sensed or unexpected changes, leading to responsive abilities that translate behaviors into actions as responses to those events. These abilities, in turn, interact recursively with the organization's structural abilities (organizational design, structure, processes, and routines), supporting the organizational efforts related to the search for growth or survival. As these processes progress, there is continuous organizing and adjusting as new opportunities and threats are processed and addressed or missed. Over time, depending on the actions taken, some sensed threats could escalate to a crisis or even to unforeseen events, taking organizations by surprise, threatening the organizations, and demanding the use of more resilient cognitive,

behavioral, and responsive abilities supported by their structural abilities. The actions and relationships played during the process of responding to changes provide feedback that can enhance the behavioral abilities used, shaping the organization for future events. Accordingly, I argue that responding to an event results in new knowledge, skills, and abilities that will be incorporated into the organization's structural abilities, enhancing its ability to manage future opportunities or threats.

The Cognitive dimension

The cognitive ability to sense environmental changes operates in accordance with how organizations acquire, process, structure, and use information from the environment to anticipate changes that can be taken as opportunities or threats. While cognitive agility is directly associated with environmental turbulence and dynamic changes, cognitive resilience is associated with changes that can escalate to crises during the process or unexpected and disruptive changes. Independently of the type of environmental change the organization faces, cognitive abilities are essential to constructing the responses (Holbeche, 2018). The cognitive abilities towards anticipating changes (being agile) and managing risks (being resilient) exhibit contradictory but complementary patterns that together enhance how organizations sense environmental changes simultaneously and interdependently. I contend that managing environmental changes effectively requires organizations to apply both cognitive abilities. While cognitive abilities provide support to organizations to understand and process complex information to anticipate changes (agility), dealing with disruptive events requires cognitive abilities focused on identifying and mitigating potential risks and developing resources to be prepared to manage those disturbances (resilience) (Lengnick-Hall & Beck, 2016).

Evidence from our inductive analysis indicates that cognitive agility abilities comprise scanning the environment, sensing and seizing changes, and using data analytics to identify opportunities and threats to inform decision-making. Through this continuous analysis of the environment, organizations gain a better understanding of the risks they face and how these evolve, helping identify and prioritize risks more effectively. Accordingly, by frequently conducting and updating risk assessments, organizations can ensure that their efforts are focused on the most relevant and pressing risks, allowing the decision-makers to allocate resources more efficiently and make better decisions based on the most up-to-date information and increasing organizational preparedness.

As organizations operate in an increasingly dynamic and uncertain environment, anchoring their strategic management only on cognitive agility or resilience may not be enough to provide suitable actions due to environmental disturbances since organizations need continuous interactions with the business environment (Teece, Peteraf, & Leih, 2016). Thus, integrating both cognitive abilities toward expected and unexpected changes allows decision-makers to focus on the most effective courses of action to reduce complexity and improve organizational responses to changes (Lengnick-Hall & Beck, 2005). The integration of cognitive agility and resilience ensures that the decision-makers embrace a holistic approach to making decisions grounded in a thorough understanding of the opportunities and risks they face. In order to make this integration work, organizations should bring together teams focused on sensemaking and risk assessment, creating shared interpretative mental schemata and models within those teams' members that will form a joint system that provides a shared meaning to expected and unexpected events, fostering positive collaboration and knowledge sharing (Maitlis & Christianson, 2014). As a result of this integration, organizations will be less likely to be

surprised by environmental changes or disruptions, improving their competitive position by maximizing resources for mapping risks and the environment. Moreover, even if an unforeseen change takes the company by surprise, they can quickly prepare and respond to it due to their cognitive ability. This leads to the following proposition:

> *P1: Organizations that develop agility and resilience cognitive abilities simultaneously will be better equipped to respond effectively to different environmental changes.*

The Structural Dimension

Organizational design, structure, processes, and routines provide the foundations to support behaviors and responses toward changes. Moving beyond mapping the environment and elaborating scenarios, the structural dimension will provide the critical organizational configuration, processes, and functions, enabling organizational enactment toward changes. Structural abilities provide the basis that enables organizations to respond to turbulence and disruptions (Lengnick-Hall & Beck, 2005).

Scholars suggest that structural stability is strongly associated with the capacity of resilient organizations to absorb, resist and recover from unexpected changes and disruptions (i.e., Hillmann & Guenther, 2020). Likewise, scholars contend that flexible structures are enablers of quick responses to environmental changes (i.e., Walter, 2021). Thus, organizations face contradictions due to tensions between stability and flexibility in managing uncertainty and environmental changes (Klarner & Raisch, 2013). While organizations pursue flexibility to thrive and enhance their competitive positions in volatile markets, they also should seek to reduce uncertainty, striving for stability, as empirically seen in Company E.

Continuous change and flexible work arrangements are recognized as core features of organizations adapting to variations in environmental patterns. Volatile environments require organizational structures to adapt to successive changes. Flexible structures operate through less hierarchical levels with higher levels of decentralization (e.g., Company C squad arrangement). Then, resources are clearly allocated, enabling organizations to sustain a culture of permanent change. In case of unpredicted changes, I argue that the structure will demand strong coordination to overcome challenges. Governance and leadership are vital in achieving this intent (Hobbs & Petit, 2017).

On the one hand, less centralized structures are depicted as having less control over employees, providing a structure in which agile cognitive and behavioral abilities toward changes emerge effortlessly. On the other hand, this structure demands a clear set of objectives and goals, facilitating a culture of creating, sharing, and applying knowledge. The absence of many levels of hierarchy will demand organizations to create flexible routines and processes to manage the turbulences and a clear governance that allows the organization to realign and stabilize during disruptive events (i.e., companies C and E during the Covid-19). This leads to the following proposition:

> ***P2a:*** *Organizations with more flexible structures, processes, and routines will demand high levels of coordination and governance to respond to disruptions (resilience).*

Organizational resilience has long been associated with contingencies, demanding stable contexts in which behavioral and responsive abilities flourish (Lengnick-Hall & Beck, 2016). More recently, some empirical studies have suggested that creating a flexible organizational structure is also important to organizational preparedness, behavior, and reaction toward

disruption since it provides a buffer for other abilities (i.e., operational flexibility, collaboration, and creating and sharing knowledge) that can help react to unpredicted events (Madani & Parast, 2021; Parast, 2022). This leads to the following proposition:

> ***P2b:*** *Organizations with stable structures, processes, and routines that develop some levels of flexibility are better equipped to support cognitive, behavioral, and responsive actions toward turbulence (agility).*

Behavioral Dimensions

Behavior towards responding to changes and disruptive events is an expected development of cognitive abilities since organizations need to have enough cognitive and behavioral abilities to respond to environmental complexities (Gioia, 2006). Agility and resilience demand behaviors that differ fundamentally regarding their attitudes toward changes. While agility demands proactive adjustments and strategic transition, resilience demands reactive adjustments and restoration (Lengnick-hall & Beck, 2005).

My empirical investigation shows that behavior toward disruption encompasses the ability to accept uncertainty and reality and to engage in doing what is required. The development of these abilities also demands the organizational ability to widely communicate its values, ensuring that employees hold the corporate values, which in turn develop a strong sense of identity and purpose within the organization. So, purpose acts as a reference point to stabilize and maintain focus, attention, and behavior while responses are being shaped and recovery occurs (McCann & Selsky, 2012). Organizations must be able to develop purposefulness at organizational, team, and individual levels to build a strong behavioral basis to apply cognition and respond to unexpected changes. From an agility perspective, well-understood and widely shared values and purpose enhance behavior related to being action-orientated, enabling quick

and proactive responses toward changes. A deeper understanding of the behaviors in agile and resilient organizations shows that some behavioral abilities are interrelated, affecting, and being affected by one another.

When companies that comprise a resilient organization accept uncertainty and reality, they also acknowledge that change is a constant and that unexpected events and challenges are likely to occur, as all EMNEs of the study have reported. This acceptance of uncertainty and reality creates a behavior through which change can be embraced rather than resisted or ignored. Some authors argue that organizations exposed to frequent events of change are more likely to develop the ability to accept uncertainty (Rafferty & Griffin, 2006) as part of their behavior, increasing their commitment and openness to changes (Peng et al., 2021). Moreover, I argue that this acceptance increases their ability to do what is required in case of unexpected changes and disruption. This leads to the following proposition:

> *P3a: Organizations that develop higher levels of agility are more prone to accept uncertainty and reality, being ready and more prone to doing what is required.*

Another interplay between behavioral agility and resilience is due to the ability of organizations to promote continuous learning. Some authors have argued that resilience is associated with a dynamic process through which an organization not only restores from disturbance but also transforms itself, coping with unexpected changes and learning to bounce back (Conz & Magnani, 2020). Similarly, agility is linked with strategic transitions, demanding continuous learning at the individual, team, and organizational levels. While individuals continuously learn through their interpretation and communication of their experiences, teams build consensual learning through interactions, sharing understanding, and mutual adjustment of

the individuals' learning. Nevertheless, organizations institutionalize learning by establishing routines, rules, or procedures incorporating new knowledge (Crossan, Lane, & White, 1999). Then, fast organizational learning is an essential behavior to capture and understand what happens in the dynamic environment, ensuring that all relevant organizational actors are aware of these developments (Nijssen & Paauwe, 2012). Accordingly, to cope and adapt to disruption, I argue that organizations need to be able to acquire new information and evaluate them based on their prior knowledge base, as well as to reflect and learn from unexpected events, changing the knowledge base. Then, I argue that continuous learning due to changes and turbulence provides the organizational basis for learning in cases of unexpected events. This leads to the following proposition:

> ***P3b:*** *Organizations that develop behaviors of continuous learning in response to environmental changes are more likely to cope with unexpected events.*

The Responsive Dimension

The abilities involved with employing agility and resilience to respond to sensed changes due to volatility and to react to escalating or unexpected changes can be seen as overlapping, complementary, and interdependent. In a structure that promotes variation due to agility, organizational behavior helps build and apply several abilities used to respond to environmental changes quickly and effectively. As discussed previously, although resilience claims stability, reacting to unpredicted changes escalates the demands for the use of abilities that also result in changes within the firm. Agility employment demands organizations to assess, develop, and implement new strategies, processes, routines, and systems (Walter, 2021). Similarly, in adversity, organizations should be able to adapt resources, processes, and routines as part of their reaction to unexpected circumstances and adversity (Limnios et al., 2014). I argue that this last

ability can be considered a subset of that employed to deal with volatility and turbulence. For example, if an unexpected event disrupts an organization's operations, the ability to quickly assess and develop new processes or routines can help the firm adapt those elements more quickly to react and recover. The agile ability to take advantage of existing capabilities, processes, and resources to achieve better results (e.g., companies B, C, D, and E) can also support organizations in their efforts to react to disruptions by enabling them to adapt and improve their skills and abilities (e.g., companies B, C, and E), leveraging the organizational strengths and resources.

Moreover, the agile ability to deploy and redeploy the resources due to changes can be added to the two previous abilities, providing bases for organizational leaders to rethink and redesign the organization due to disruption if necessary (Miceli et al., 2021). Finally, the ability to quickly take the required action can also be valuable during disruption since the time to react can determine an organization's survival (Sahebjamnia, Torabi, & Mansouri, 2018). The interplay between agility and resilience in performing responses shows that firms possessing the ability to perform agility to deal with changes help the organization present higher readiness and effectiveness to react to disruptions. This leads to the following proposition:

> ***P4:*** *The organizational abilities to employ agility to quickly respond to changes are antecedents of and enhance responses towards unexpected and disruptive events.*

As the interaction between organizations and the environment is an inherently dynamic process (Lengnick-hall & Beck, 2005), their actions improve their interpretations of environmental changes and experiences, providing feedback that will affect their behavior towards change. More effective plans and actions towards adversity will enhance the company's

employees' self-efficacy, while those that fail to enhance experiences and new interpretations of the actions provide feedback that improves the organizational behavior (Oreg & Bartunek, 2018). These behavioral improvements reflect higher motivation and readiness to act when other events occur; thus, these are vital for adjusting the firm's responses. This leads to the following proposition:

> ***P5:*** *The performance of actions to respond or react to changes or disruptions influences the organization's behavior toward performing new actions*.

The Improvement Dimension

During and after actions due to environmental changes or disruptions, organizations experience improvements in agility and resilience, which will reinforce their behaviors towards turbulence and adversity. Research on agility and resilience suggests that responses due to changes and adversity are facilitated by past and learned experiences (Duchek, 2014; Vecchiato, 2015). Although this organizational learning is frequently associated with change-oriented action, it can also be directed toward stability by supporting companies to draw on past experiences and preserve their behavioral and responsive abilities (Aranda et al., 2017).

In both cases, organizations may implement plans due to crises and develop new skills and abilities due to continuous learning from experiences, from successful and failed plans (e.g., companies C and D), or from the new knowledge and information acquired through collaboration (e.g., companies B, C, and E). Hence, organizational learning plays a significant role in acquiring, disseminating, and applying new knowledge due to navigating and adapting to environmental changes (Balasubramanian et al., 2022). It has also been related to overcoming organizational issues, such as those due to turbulences (Park & Kim, 2018). This leads to the following proposition:

P6: *Employing adaptive abilities promotes improvements in the organization's bundle of resources to confront future changes and disruptions.*

Several organizational improvements, such as new knowledge and information, may be relevant to organizations' responses to future turbulent events. Organizations need to align these developments within the organizational context to apply them when required. I argue that this alignment is achieved through feedback looping using organizational learning processes. For example, since planned actions to react to disruption were implemented, and new skills and abilities were developed due to resilience employment, they will provide feedback to the organization, being sources of reliable and systematic shifting of the organizational structure by improving the patterns of flexibility and stability of organization to deal with future turbulent events. Moreover, top managers need to be able to systematically and incrementally renew the organizational bundle of resources and abilities by incorporating new knowledge and information provided by the feedback from those improvements (Helfat & Winter, 2011). This orchestration demands a high level of organizational flexibility, strengthening the bundle of resources to deal with different environmental dynamisms (Eisenhardt & Martin, 2000). This leads to the following proposition:

P7: *Organizations absorb improvements from employing adaptive abilities through organizational learning processes.*

Discussion

EMNEs, internationalizing homegrown organizations from emerging economies like Brazil, display superior abilities due to their home-based environmental changes. EMNEs experience unique environmental challenges, such as the high frequency of market and technological turbulences and rapid social disruptions. This essay outlined how organizations

from EMs face and respond to an increasingly interconnected, complex global competitive landscape. The development, construction, and application of agile and resilient abilities to respond to environmental changes (turbulence and/or disruptions) bring novel elements to explain EMNEs. The proposed typology positions organizations across four quadrants related to their levels of the interplay between agility and resilient abilities. Organizations should target higher levels of agility and resilience, simultaneously becoming able to anticipate environmental changes while being prepared to respond to disruptions (agile resilient) so that they can continue to grow and survive. Agile resilient organizations found a hybrid equilibrium using superior abilities from agility and resilience dynamically that provides higher competitiveness in international settings. The theoretical framework and propositions elaborate on how organizations can reach the hybridity between and within agility and resilient abilities. The interrelatedness and integration of these abilities within and across the shared dimensions allow us to derive theoretical and managerial implications.

Theoretical Implications

This research extends the theorizing on organizational agility and resilience (Gölgeci et al., 2019; Holbeche, 2019) by uncovering and acknowledging the interplay between their elements through an integrative framework of how the interplay between the dimensions operates and supports each other. Shedding light on the interrelatedness of the five dimensions, which compound both the agility and the resilience dimensions of responding to changes or disruptions, allows us to broaden our understanding of the nature of agility and resilience abilities. While several studies stress the relevance of agility and resilience abilities in isolation, analyzing their conceptualization, antecedents, and outcomes (Duchek, 2020; Felipe, Roldán, & Leal-Rodríguez, 2016, 2017; Parker & Ameen, 2018), this essay goes further by inductively

uncovering critical organizational abilities arising from building and applying agility and resilience. Moreover, I build on these findings and their interrelatedness between them to propose a dynamic theoretical framework integrating five dimensions - cognitive, structural, behavioral, responsive, and improvement - through which organizations respond to different environmental changes. The proposed theoretical framework differs from previous studies since they analyze agility and resilience in isolation as a combination of a few attributes without pondering the possibility of environmental changes escalating to disruptions and the interplay between agility and resilience.

The typology and the five dimensions integrated into the theoretical framework extend current theory. Most of the previous literature built their discussion on only three dimensions (Lengnick-Hall & Beck, 2009) without considering their interplay and the mechanisms through which they simultaneously affect agility and resilience (Gölgeci et al., 2019). Moreover, scholars argue that the process of employing agility or resilience is static, ignoring its dynamics or the resulting organizational improvements from their application. The theoretical framework incorporates this dynamism and represents how their deployment and practice shift organizations' experience through two main feedback loops.

In addition, the proposed theoretical framework shifts the prevalent paradigm recognizing the interplay between agility and resilience across the five dimensions. This approach also suggests that organizations moving from resilience quadrants (stable-resilient or rigid-fragile) to develop agility will face more challenges in moving from the stability developed to support resilience than those from agility quadrants (agile but fragile or rigid fragile) in developing stability and resilient abilities. From the data analysis, I theorize that agility is, in many ways, an enabler of resilience. First, although resilience allows firms to react to surprising

and disruptive events, continuous changes are the norm due to environmental complexities (Brown & Eisenhardt, 1997). Thus, building resilience abilities is necessary to deal with disruptions but not a sufficient condition to quickly respond to continuous changes representing opportunities that may enhance the firm's competitive advantage. Moreover, some of those changes can configure threats to the organization. If not timely sensed, it can escalate, harming the organization's competitive position and demanding contingency planned actions through resilience. However, firms that build unified cognitive abilities enhance the analysis of changes, being more prepared in case of disruptions or escalation of sensed threats (Holbeche, 2019).

Another evidence that agility enables resilience is related to the behavioral and responsive dimensions, critical elements of deploying agility and resilience (McCann, Selsky, & Lee, 2009). At the organizational level, key abilities related to agile behaviors are openness to change, continuous learning, and being action-oriented. These enhance resilient behaviors of acceptance of uncertainty and reality in a context of continuous change, learning from unexpected events due to the culture of continuous learning, and doing what is required, since the organization has an action-oriented culture. Similarly, an agile organization that can quickly and effectively respond to changes by employing agility is ready to react to the effects of disruption, an essential concept of employing resilience. In summary, organizations that possess agile behaviors and responsive abilities are more likely to perform resilience reactions quickly when needed.

In addition, I suggest that organizations should build a hybrid structure that enables them to be prepared for environmental changes benefiting from both agility and resilience abilities. Although the organizational structure towards agility is mainly built on flexible structures, processes, and routines, which provide quick adaptability when needed (Fayezi et al., 2017), it

can coexist within a resilient context, which presumes stability and robustness through processes and routines that enable organizations to overcome disruption (Holbeche, 2018). Moreover, organizations must be open to the developments that emerge in adapting and responding to challenges due to changes. I argue that organizational learning and routines are core to firms shifting their organizational structures (Rerup & Feldman, 2011). By routinizing how the developments due to agility will be incorporated, organizations evolve with stability, creating the basis to respond to turbulent events if necessary.

Managerial Implications

In addition to its theoretical contributions, this essay offers managers directions on how to deal with the varying environmental changes in a global context. First, the typology for conceptualizing agility and resilience informs managers in which quadrant they are positioned in their different levels of agility and resilience. This knowledge allows organizations to access and establish objectives to increase their levels of agility and resilience.

Second, the theoretical framework provides managers insights on alternatives for simultaneously addressing the apparent contradiction in dealing with agility and resilience. The interviews revealed that EMNEs apply some agility and resilient abilities in an unstructured way, struggling to comprehend why some of them should build an agile-resilient structure that supports the hybrid approach, becoming agile resilient successfully. This may be partially explained by the fact that, in most existing organizations, the organizational culture exerts pressure to maintain the status quo, reflected in a stable structure, processes, and routines resulting in organizational inertia. Attempts to change this scenario require companies to build a strong organizational culture towards uncertainty, changes, and reality through learning and knowledge management (Park & Kim, 2018). Organizations with a highly flexible context are

viewed as “ready and prepared” for change; they rapidly adopt creative approaches to address the changes and uncertainty they face.

Another possible cause of this difficulty may be the managerial mindset. As changes in the current business environment are the norm, dealing with ambiguity and complexity is not easy for them. It requires a significant shift in their mindset, embracing adversity and change as usual and creating a sense of identity and purpose towards them, communicated through corporate values that grasp uncertainty and openness to change (Lengnick-hall, Beck, & Lengnick-hall, 2011). Moreover, tensions emerge in their strategic decisions since the organizational culture for stability and the manager’s risk aversion mindset can seem contradictory to the need for flexibility to respond quickly to changes. Building a hybrid agile-resilient organization requires top managers to possess and operate comfortably in a paradoxical mindset (Miron-Spektor, Keller, Smith, & Lewis, 2018).

Limitations

The present essay is set in the context of firms from a unique country, Brazil. Although all of them operate abroad, as any research rooted in such a setting, it is crucial to admit that its findings may suit the focal country and its cultural setting but may not be a good fit in other cultural settings. Moreover, EMNEs are not homogenous (Ramamurti et al., 2019). The advantage of the research context is that it allowed me to compare and contrast the abilities involved in responding to changes and disturbances, enabling the theory extension by adopting an engaging scholarship perspective (Van de Ven, 2018). Nonetheless, the findings suffer from a lack of generalizability.

In addition, the levels of organizational agility and resilience might be influenced by the size of the companies when they were founded, the length of their internationalization, and the

type of industry in which they operate. Some industries are naturally more dynamic, facing frequent environmental changes (e.g., digital economy) than others. Thus, this research can be considered an initial contribution to address the coexistence of agility and resilience issues in organizational practices that can be expanded to other regions, including more organizations of different sizes (e.g., large multinationals) across different types of industries.

Finally, due to the qualitative nature of our research, I was unable to empirically examine my focal variables' impacts on firm performance. I based my conclusions on qualitative estimates of my sample EMNEs' performances; it was not possible to determine how the varied levels of agility and resilience would be associated with higher or lower levels of performance. Assessing these performance benefits is made more challenging because measurements about the consequences of actions due to change are difficult to define and capture since they are time sensitive, demanding a longitudinal study associating each change event to a variation in performance. However, I suggest that future research investigate the effects of responding to environmental changes or disruptive events (such as the COVID pandemic) on performance outcomes, capturing and developing a wide range of quantitative and qualitative metrics.

Conclusions

As the pace of the business environment keeps accelerating, organizations struggle to keep up, being unable to respond and react quickly to environmental changes. Agility and resilience are considered adaptive abilities enabling organizations to sustain competitive advantages in complex global environments. EMNEs, due to their home countries' experiences with the high frequency of changes in their environments (Marquis & Raynard, 2015; McCann, Selsky, & Lee, 2009), need to develop unique responses to these changes, including being simultaneously agile and resilient. This essay sheds light on how EMNEs can develop agile and

resilient abilities simultaneously and activate them in their responses to turbulence and disruptions. The theoretical framework integrates five dimensions showing that agility and resilience are complementary and interrelated across and within the dimensions. Based on this theoretical framework, I developed propositions expanding the theory and offered managerial recommendations. My findings highlight the importance of simultaneously activating agility and resilience responses to unexpected changes in turbulent environments.

APPENDIX

Appendix 1[2]

# of Variable	Name	Description	Possible Values
1	Author(s)	It refers to Authors' names using APA.	N/A[3]
2	Title	It refers to the article's title.	N/A.
3	Abstract	It includes the articles' abstracts.	N/A.
4	AKW	It includes the authors' keywords.	N/A.
5	Year	It refers to the year in which the article was published.	N/A.
6	Source	It refers to the name of the source in which the article was published.	N/A.
7	Volume	It refers to the volume of the source in which the article was published.	N/A.
8	Issue	It refers to the issue of the source in which the article was published.	N/A.
9	Citation	It refers to the number of the article's citations, according to Google Scholar.	N/A.
10	Per year	It refers to the average of citations that the article has received per year since it was published.	N/A.
11	Research Focus	What is the topic explored in the article?	N/A.
12	Theory	What is the theoretical approach adopted?	1- Dynamic Capabilities 2- Knowledge-based View 3- Resource-based View 4- Network Theory 5- RBV + DC 6- Complexity theory 7- Institutional Theory 8- Market Orientation 9- Organizational Learning 10- Contingency Theory
13	Methodology	What is the methodological approach?	1- Qualitative 2- Quantitative 3- Both
14	Type of the research	What is the type of research?	1- Conceptual/theoretical 2- Empirical 3- Both
15	Aim of research	It refers to the aim of the research.	1- Exploratory 2- Theory building 3- Theory testing
16	Gap	It indicates which gap the research aims to fulfill.	
17	Technique	What is the methodological technique used?	1- Case study 2- Observation 3- Survey 4- Content analysis 5- Statistical models

[2] Adapted from Edmonson & Mcmanus (2007).
[3] N/A means not applicable, referring to the lack of sense in providing this information due to several factors

18	Data Collection	What is the data collection method?	1- Interviews 2- Questionnaire/surveys 3- Observations 4- Documents 5- Datasets
19	Dataset/Database	It refers to the name of the dataset used.	
20	Sample size	It indicates the sample size used in the study.	
21	Industry	It refers to the industry analyzed by the article	
22	Country/ies	If it is a mono-country or multi-country	1- mono-country 2- multi-countries
23	Country names	It lists the name of the country(ies).	N/A
24	Construct	It indicates the analyzed construct.	N/A
25	Variables	It lists the variables used in statistical models, identifying IV, DV, Mediators, Moderators, and Control.	
26	Agility positioning	It refers to the position of agility in the model.	1 – IV 2 – DV 3 – Mediator 4 – Moderator
27	Agility representation	It refers to the type of agility that is analyzed. (Strategic agility, organizational agility, etc.)	N/A.
28	Hypotheses	It describes the hypotheses tested using the model	N/A
29	Propositions	It describes the propositions generated using the framework	N/A
30	Agility definition	It refers to the definition of agility used in the article	
31	Unit of analysis	It indicates the level of analysis adopted in the article.	1- individual 2- team 3- managerial 4- firm 5- industry 6- country
32	Key Findings	It serves to wrap up the main findings of the study	
33	Future Research	It serves to include future research recommendations if provided.	
34	Contributions	It refers to the contributions of the study	
35	Comments	It serves to make comments and critiques and suggest the application in our research.	
36	Scope - space	It refers to the scope of the study (Bacharach, 1989)	
37	Scope - time		
38	Scope - values		

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