# Organizational Agility:
# Current Challenges and Future Opportunities

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**Abstract:** *In this introduction to the special issue on organizational agility, we carve out central challenges in research on organizational agility. More specifically, we suggest that (a) scholars have used a variety of definitions of organizational agility, (b) the agility concept has evolved in different communities that lack joint knowledge development, and (c) the term agility has been used to refer to different empirical phenomena (i.e., methods versus capability of an organization). Rather than suggesting the unification of theoretical and methodological approaches, this special issue provides a forum to embrace different theoretical and empirical approaches to advance the understanding of organizational agility. The editorial provides an overview of the contributions in the special issue and carves out possible avenues for future research.*

## 1.  Introduction

Organizational agility is central to the survival of contemporary organizations. This is evident from many recent challenges, such as the disruptions that many businesses face due to the Covid-19 pandemic, the rise of companies that rely on digital capabilities such as Amazon, Google or Tesla and their ability to adapt to changing physical markets, and governmental regulations that force organizations to contribute to mitigating climate change. In each case, organizations are forced to change or decline, typically in a way that they would have been unable to anticipate some years ago.

Although the need to adapt to dynamic environments is not a recent phenomenon, it may have changed in character over recent decades. Stieglitz, Knudsen, and Becker (2016) note that environmental dynamism can conceptually be decomposed into changes in magnitude, frequency and direction. Directional changes add a new quality to environmental dynamics, as we see in recent examples such as the disruption of the taxi industry through the market entry of Uber or the rise of crypto currencies that follow a fundamentally different logic than traditional exchanges. In all these cases, companies require organizational agility to thrive despite these environmental dynamics.

The aim of this introduction to the special issue is to characterize and define problem areas in research on organizational agility. We accomplish this by first defining challenges that we see in the current debate on organizational agility. We further show that agility can be approached from different conceptual angles. Finally, we devise avenues for future research.

This special issue also reflects a major change in the academic environment, i.e., the increasing trend of journals to open access solutions. This special issue is the first issue of the 'Journal of Competences, Strategy & Management' that is fully available through open access. Supported by the 'University of Stuttgart', we have set up a platform that enables us to manage the publication process and make future articles freely available. We believe that this is a crucial step to prepare the journal for future academia, and we are excited that the articles can now engage a broader audience across the globe.

## 2.  Challenges in research on agility

Even though research on organizational agility has flourished in recent years, there are several challenges that may prevent further progress. We highlight three key challenges in research on organizational agility, i.e., that there are many different definitions for the same phenomenon, that many different communities elaborate on organizational agility but lack joint knowledge development, and that the term 'agility' is used for a methodological approach to project management as well as an organization-level phenomenon. We explicate each of these challenges below.

### 2.1. Different definitions for the same phenomenon

Reviewing the literature on agility, we found a plethora of definitions of the term: Table 1 provides an overview of prominent definitions of organizational agility. Rather than adding another definition to this canon, and further contributing to the confusion, we instead highlight commonalities among definitions of organizational agility.

First, many scholars highlight the *kinds of environments* in which organizational agility matters. A key characteristic of such environments is the existence of quick and relentless (as opposed to one-time) changes. This is also reflected in the term 'dynamic', which some scholars use in their definitions.

Moreover, several definitions emphasize the unpredictable nature of changes in the environment, i.e., they happen unexpectedly and disruptions are common.

Second, many definitions regard the nature of agility as an *organizational ability or capability* (Teece, Peteraf, & Leih, 2016). This implies that agility is oftentimes seen as a latent capability, rather than an observable behavior of the organization (Di Stefano, Peteraf, & Verona, 2014). While this conceptual angle makes sense, it may also be useful to think of organizational agility as a process or set of practices that may or may not be connected to capabilities (Battistella et al., 2017). Additionally, viewing agility as a capability clarifies the scope of agility, i.e., it is an organization-wide phenomenon.

*Table 1: A selection of definitions of organizational agility*

| Authors | Journal | Definition |
|---|---|---|
| Agarwal, Shankar, and Tiwari (2006, p. 212) | European Journal of Operational Research | "Agility is being defined as the ability of an organization to respond rapidly to changes in demand, both in terms of volume and variety." |
| Battistella, De Toni, De Zan, and Pessot (2017, p. 67) | Journal of Business Research | "[T]he ability to dynamically revise or reinvent the company and its strategy […] Agility can be described as a dynamic process of anticipating or adjusting to trends and customer needs without diverging from the company vision." |
| Cegarra-Navarro, Soto-Acosta, and Wensley (2016, p. 1544) | Journal of Business Research | "Organizational agility refers to the capability of a company to rapidly change or adapt in response to changes." |
| Christopher (2000, p. 37) | Industrial Marketing Management | "Agility is a business-wide capability that embraces organizational structures, information systems, logistics processes, and, in particular, mindsets. A key characteristic of an agile organization is flexibility." |
| Felipe, Roldán, and Leal-Rodríguez (2016, p. 4624) | Journal of Business Research | "OA [Organizational agility] is the firm's capability to sense the changes of the environment and respond efficiently and effectively to them." |
| Giannakis and Louis (2016, p. 707) | Journal of Enterprise Information Management | "[T]he ability of firms to better deal with unexpected events, to overcome unforeseen situations of business environment as to take benefits and opportunities of changes." |
| Lewis, Andriopoulos, and Smith (2014, p. 60) | California Management Review | "[A]gility enables firms to flexibly respond to complex, global, and dynamic environments." |
| Lu and Ramamurthy (2011, p. 932) | MIS Quarterly | "Organizational agility is a firm's ability to cope with rapid, relentless, and uncertain changes and thrive in a competitive environment of continually and unpredictably changing opportunities." |
| Naylor, Naim, and Berry (1999, p. 108) | International Journal of Production Economics | "Agility means using market knowledge and a virtual corporation to exploit profitable opportunities in a volatile market place." |
| Sambamurthy, Bharadwaj, and Grover (2003, p. 238) | MIS Quarterly | "[T]he ability to detect and seize market opportunities with speed and surprise." |
| Tallon and Pinsonneault (2011, p. 464) | MIS Quarterly | "[T]he ability to detect and respond to opportunities and threats with ease, speed, and dexterity." |
| Yusuf, Sarhadi, and Gunasekaran (1999, p. 37) | International Journal of Production Economics | "Agility is the successful exploration of competitive bases (speed, flexibility, innovation proactivity, quality and profitability) through the integration of reconfigurable resources and best practices in a knowledge-rich environment to provide customer-driven products and services in a fast changing market environment." |

Third, definitions share commonalities in terms of the *effects of organizational agility*. Several authors suggest that organizational agility enables the organization to detect and seize opportunities in the external environment. More importantly, scholars specify that detecting and seizing typically happens very quickly, is flexible and could even surprise the competition. This temporal connotation is one of the most prominent features of organizational agility.

## 2.2. Organizational agility as a matter for different communities

Another challenge is that organizational agility has been the concern of many different scientific communities. These communities have developed specialized knowledge, which is only partially compatible and rarely has a cross fertilizing effect (Brown & Duguid, 1991).

We performed a bibliometric coupling analysis of 717 articles to better understand which communities deal with agility.[1] As shown in Figure 1, the analysis revealed six different clusters, each of which can be seen as a different community.

Cluster 1 (n = 143) is the oldest and largest cluster. Building on Nagel (1992) and Goldman,

Nagel, and Preiss (1995), this cluster is concerned with how organizations adapt to environmental changes by modifying their supply chains (Fayezi, Zutshi, & O'Loughlin, 2015; Sharifi & Zhang, 1999). Important issues are antecedents and (performance) outcomes (cluster 1a), supply chains as strategic options and choices (cluster 1b), and agile manufacturing (cluster 1c). Cluster 2 (n = 10) contains a small group of scholars that also focus on supply chain agility, but in the context of humanitarian organizations (L'Hermitte, Tatham, Brooks, & Bowles, 2016). Cluster 3 (n = 6) deals with the selection of suppliers in agile supply chains.

Cluster 4 (n = 64) is concerned with the management of software development projects through agile approaches (Conboy & Fitzgerald, 2004; Lee & Xia, 2010), as well as the transfer of those methods to non-software contexts (Cooper & Sommer, 2016). Cluster 5 (n = 9) also focuses on information technology but examines its influence on organizational agility (Tallon & Pinsonneault, 2011). Agility, here, enables organizations to quickly adapt to environmental changes. Cluster 6 (n = 7) considers the acceptance of information technology. This cluster uses the term 'agility',
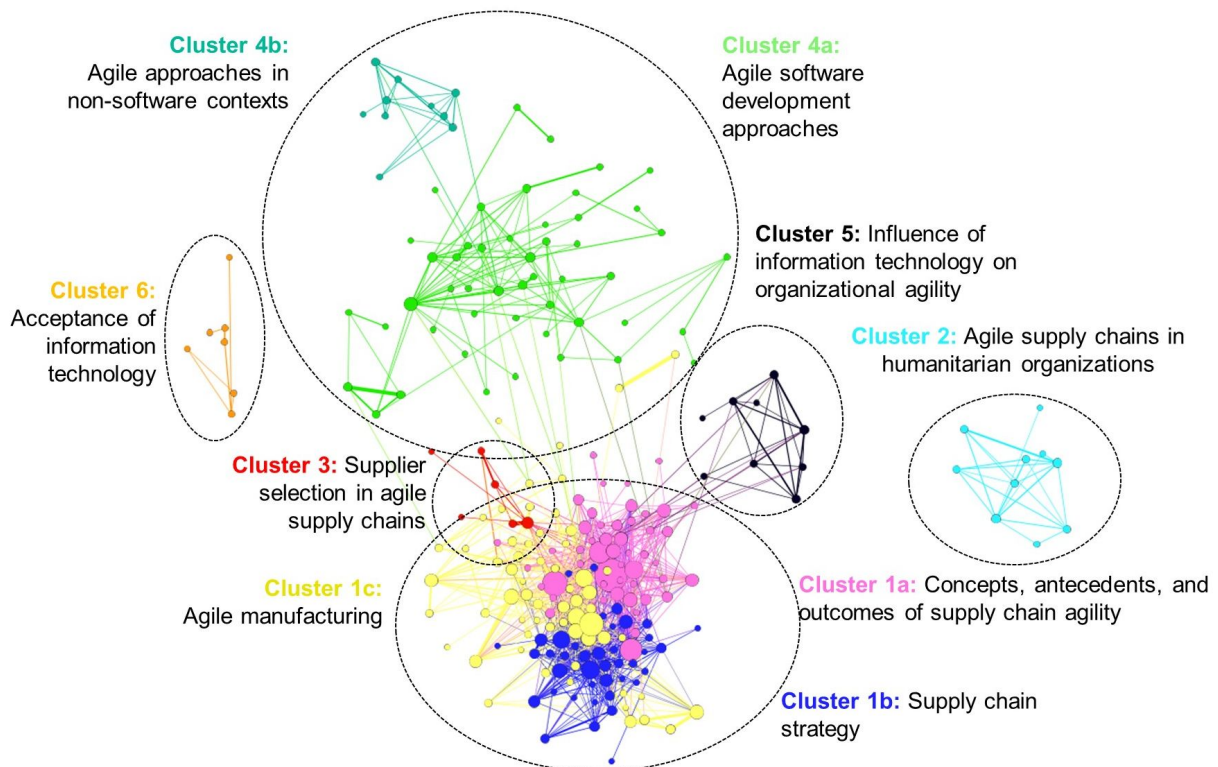


*Figure 1: Scientific communities in research on agility*

but does not explicitly elaborate it (Hong, Thong, Chasalow, & Dhillon, 2011).

In summary, the analysis shows that different communities deal with agility. However, mutual knowledge development about agility may be impeded, which hampers the opportunity for cross-fertilization and mutual learning.

### 2.3. The same term for different phenomena

A third challenge is that the term agility is used to refer to different empirical phenomena (Langholf & Wilkens, 2021; Ritter, Danner-Schröder, & Müller-Seitz, 2021). On one hand, agility refers to a phenomenon on the organizational level that is concerned with environmental dynamics and how organizations react to those dynamics. On the other hand, agility is used to refer to a specific set of methods, such as Scrum (Mahringer, Dittrich, & Renzl, 2019; Schwaber & Sutherland, 2020) or extreme programming (Beck, Hendrickson, & Fowler, 2001), and the values and principles needed to successfully apply those methods (Highsmith & Cockburn, 2001). The identified clusters also reflect these differences. Cluster 4, for example, mostly refers to agility as a set of methods, whereas cluster 5 typically refers to organizational agility.

Although there could be connections between organizational agility and agile methods, this is not necessarily the case. We may find that an organization is able to adapt to dynamic environments without using agile methods and principles, or we may find that an organization applies agile methods but is unable to adapt to the environment. Clearly, these relationships require attention, but it is important to be clear whether one refers to organizational agility or

*Table 2: Exemplary relations between the use of agile methods and the extent of organizational agility*

| | | Use of agile methods | |
|---|---|---|---|
| | | *Low* | *High* |
| **Extent of organizational agility** | *Low* | Traditional bureaucracy | Complex organization that fails to scale agile methods. |
| | *High* | Small organization with a visionary leader | Organic organization |

agile methods. This special issue focuses on the former: organizational agility.

Table 2 exemplifies possible relations between agile methods and organizational agility. First, traditional bureaucracies are an example of a low degree of adoption of agile methods and a low extent of organizational agility. Second, an organization that scores high on the adoption of agile methods but low on organizational agility may be suffering from a problem in scaling, i.e., the inability to integrate agile teams in a way that produces a concerted effect in terms of agility (Bansal, Kim, & Wood, 2018; Shepherd & Patzelt, 2020). Third, an organization may not use agile methods but still score high on organizational agility. An example could be a small organization with a visionary leader that guides the organization according to his observation of the market. Although these organizations benefit from this source of agility (the leader) in expansionary phases and periods of growth, they may also reach certain limits as they grow. Finally, an organization may widely adopt agile methods and score high on organizational agility. In this case, the organization most likely can enact agile methods to enable synergies and coherence between its teams, but at the same time fully exploits the teams' capabilities to react to local changes in the environment. As Sherehiy, Karwowski, and Layer (2007) note, such organizations typically are what Burns and Stalker (1961) have termed 'organic organizations'.

Here, we have only examined one possible confusion in the use of the term organizational agility. However, it has to be noted that scholars have used a variety of similar terms. These include strategic agility (Weill, Subramani, & Broadbent, 2002), agile manufacturing (Gunasekaran, 1999), agile supply chains (Christopher, 2000) and enterprise agility (Overby, Bharadwaj, & Sambamurthy, 2006). Though we cannot examine these differences in detail, we urge future research to be clear about which term they select and to be sensible of possible differences among these concepts.

### 3. Conceptual approaches to study organizational agility

Scholars have grasped organizational agility through different conceptual approaches. Here, we highlight three conceptual approaches that the papers in this special issue have applied.

## 3.1. Agility as a capability

In recent decades, scholars have conceptualized firms as bundles of capabilities (Peng, Schroeder, & Shah, 2008). Moreover, they have examined how 'dynamic capabilities' enable organizational change (Teece, 2007). Such a capability lens has been applied to various phenomena. Agility is one particular phenomenon that has been examined through such a lens (Teece et al., 2016). The papers in this special issue, hence, have also applied a capability lens to better understand organizational agility.

Wenzel (2021), for example, suggests that progress in understanding organizational agility is held back by the assumption that firms primarily react to environmental changes rather than shaping the environment. He shows that this view on organizational agility is rooted in the assumptions that scholars hold about dynamic capabilities. Revising these assumptions, he argues, may advance understanding of agility. when we consider market-shaping, for example, we see that agility not only refers to reacting to changes but can also imply that firms influence market dynamism.

Langholf and Wilkens (2021) build their conceptualization of organizational agility on Felipe et al. (2016) and Panda and Rath (2021). These scholars view organizational agility as a specific kind of dynamic capability. Langholf and Wilkens (2021) use the scale from Hsu and Sabherwal (2012) to measure organizational agility as a specific dynamic capability. This dynamic capability scale seems to be especially appropriate to measure organizational agility, because its parameters reflect actions referring to flexibility and adaptability in an organization.

Walter and Rätze (2021) develop a framework that describes how organizational agility can be promoted in organizations. They link agility literature, dynamic capability literature and literature on organizational learning. This view leads them to reconceptualize organizational agility "as a second-order DC [dynamic capability], which allows organizations to enact different agility capabilities (first-order DCs) to successfully change operational (zero-level) capabilities in a constantly changing business environment" (p. 13).

Meier and Kock (2021) view the agile R&D units' organization in their case study as "a context-specific manifestation of dynamic capabilities in R&D and innovation management" (p. 16). In their conceptualization of organizational agility, the authors follow Teece et al. (2016, p. 29),

who argue that dynamic capabilities can help organizations to reduce "costs associated with maintaining a given level of organizational agility."

In summary, these studies use (dynamic) capabilities as a conceptual lens to better understand organizational agility. The papers show how such a lens can help scholars to embrace this phenomenon.

## 3.2. Agility as a process

Another conceptual angle, which some papers in the special issue use, is viewing organizational agility as a process. In recent years, scholars have emphasized the need to examine organizational phenomena, such as change or innovation, as processual phenomena (Cloutier & Langley, 2020; Pentland, Mahringer, Dittrich, Feldman, & Wolf, 2020; Tsoukas & Chia, 2002). This 'processual move' has advanced organization theory and strategic management research in a variety of ways. Hence, a processual perspective is also useful to better understand organizational agility.

Ritter et al. (2021) acknowledge that the assumptions of a capability perspective may become problematic in advancing research on organizational agility. They draw on recent research on organizational routines that views routines as processes (Feldman, 2016; Feldman et al., 2021), and transfer the insights generated in this stream of research to organizational agility research. The authors show how such a perspective can draw attention to how organizations 'become' agile, which opens an exciting direction for future research.

Similarly, Walter and Rätze (2021) conceptualize capability development as a process. Organizational agility represents a collective pattern of behavior, which has to be developed and regularly updated by the actors in the organization (Salvato & Rerup, 2011). By enacting organizational agility, the organization and its actors learn, and the level of agility increases. It not only highlights the processual nature of organizational agility, but also the relevance of temporality in understanding agility.

## 3.3. Agility as microfoundations

In recent years, scholars have increasingly emphasized the relevance of unpacking the 'microfoundations' of capabilities and routines (Felin, Foss, & Ployhart, 2015; Mahringer &

Renzl, 2018; Renzl, Rost, & Kaschube, 2013; Rost, Sonnenmoser, & Renzl, 2019). Scholars do not always agree on how to approach these microfoundations (Pentland, 2011), however, many scholars have noted that everyday actions and practices are important to understand organizational phenomena (Feldman & Orlikowski, 2011).

Several articles in the special issue shed light on the microfoundations of organizational agility. Walter and Rätze (2021), Meier and Kock (2021) and Langholf and Wilkens (2021) analyze the underlying processes of organizational agility and the actions of actors in agile organizations. Walter and Rätze (2021) stress the roles and actions of managers on different levels in the organizational learning and capability development process. Langholf and Wilkens (2021) analyze the interplay between organizational agility, agile methods and the actions of team-members and team-leaders in agile teams. Meier and Kock (2021) contribute to an in-depth understanding of the characteristics, antecedents and consequences of agility. Ritter et al. (2021) suggest a practice-oriented approach to organizational agility. This view also emphasizes that everyday actions matter for organizational agility.

## 4. Avenues for future research

The articles in this special issue open exciting avenues for future research on organizational agility. Here, we hint at some possibilities that scholars might further pursue.

### 4.1. Reactive and proactive views on organizational agility

As Wenzel (2021) emphasizes, organizational agility is typically seen as a capability that helps organizations react to environmental changes. However, if we consider the possibility that agility could also imply proactive market-shaping we can better understand how agility enables companies such as Apple and Uber to thrive, and we can ask exciting new questions: How are reactivity and proactivity connected in organizational agility? How do processes that underpin reactive aspects differ from processes that underpin proactive parts? How are organizations able to balance both aspects? Are there temporal rhythms of how organizations switch between proactive and reactive modes? In sum, the proactive element in organizational agility needs further attention.

### 4.2. Connecting agile methods and organizational agility

We have argued that the connections between agile methods and organizational agility are more complex that commonly assumed (see also Ritter et al., 2021). Langholf and Wilkens (2021) also link organizational agility with the use of agile methods and the actions of members in agile teams. However, there is a need to unpack the connections between both aspects in more detail: when do agile methods contribute to organizational agility and when is this contribution limited? How do organizations scale agile methods in a way that contributes to organizational agility? How are organizations agile without using agile methods?

### 4.3. Dynamic conceptualizations of organizational agility

Ritter et al. (2021) have shown the relevance of taking a processual perspective on organizational agility. Walter and Rätze (2021) also stress the relevance of temporality (and thus process) for understanding organizational agility. Even though these papers have advanced a processual approach to study organizational agility, however, most scholars still view it as a capability. Hence, there is a need to develop more dynamic concept-ualizations of organizational capabilities. We hope that future research addresses this gap.

### 4.4. Top-down and bottom-up views on organizational agility

Some papers in this special issue have examined which aspects underpin organizational agility. Meier and Kock (2021), for example, have analyzed the enablers and barriers of organizational agility in agile R&D units. Future research could further examine which aspects (such as certain structures, cultural norms, skills, and tools) underpin organizational agility to develop a more sophisticated understanding. Furthermore, research could examine how different contexts influence these aspects (Mahringer, Rost, & Renzl, 2019).

However, an alternative tactic could be to take a bottom-up approach, i.e., examining how everyday actions lead to larger changes and thus may underpin organizational agility. Such a view is more situated and looks at emergent processes and how they enact organizational agility (Sele & Grand, 2016). Such a perspective may provide a fresh view on organizational agility.

### 4.5. Expanding the methodological repertoire

Scholars may also have to reflect on their use of methods to better understand organizational agility. One possibility is to conduct in depth qualitative studies such as ethnography or critical incident interviews. Such an approach helps to appreciate how mundane actions matter for organizational agility, thus generating a deeper understanding. Walter and Rätze (2021) also suggest that qualitative studies could help to understand the processes underlying organizational agility (see also Spector and Meier, 2014; Teece, 2012). Meier and Kock (2021) use a qualitative interview study to develop an in-depth understanding of the characteristics, antecedents and conse-quences of agile R&D Units' Organization. This study is a good example of how processes and actions of actors underlying organizational agility can be analyzed.

Moreover, the insights of Meier and Kock (2021) "could be a basis for developing a multi-dimensional measurement scale and thus facilitates future quantitative studies" (p. 16). Langholf and Wilkens (2021) also show how a combination of qualitative and quantitative methods can be used to link organizational agility with organizational structures and individuals' actions. The authors collected quantitative data on dynamic capabilities and empowerment at three points in time from teams working with agile methods and from teams working with traditional project management methods. Additionally, they analyzed qualitative data. Hence, the triangulation of qualitative and quantitative data might help to examine organizational agility.

Another possibility is the analysis of sequentially ordered digital trace data (Mahringer & Pentland, 2021). These data sources become increasingly available due to the use of digital tools in organizations. Such sequence analysis might help to generate a deeper understanding of agility from a processual perspective.

### 5. Conclusion

Although research on organizational agility has gained momentum during the last decade, it still provides a fruitful area for further knowledge development. We have carved out challenges, conceptual angles and future research areas that might be of interest. We hope that our arguments enable scholars to advance research on organizational agility.

### Note

[1] Bibliographic coupling aims at identifying scientific communities in a data set. The method assigns articles that cite the same references to the same group. Bibliographic coupling has also been used in prior management research (e.g., Vogel & Güttel, 2013; Wilden, Hohberger, Devinney, & Lavie, 2018). We used the 'Louvain Method' to cluster the results (Blondel, Guillaume, Lambiotte, & Lefebvre, 2008). We further used the software tools 'BibExcel' (Persson, Danell, & Schneider, 2009) and 'Gephi' (Bastian, Heymann, & Jacomy, 2009) to perform the analysis, and analyzed the content of the clusters by identifying frequent keywords within each cluster.

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## Acknowledgements

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