# Unlocking the key dimensions of organizational agility: A systematic literature review on leadership, structural and cultural antecedents

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## ABSTRACT

This paper presents the first comprehensive systematic literature review of articles from the last five years published on enterprise-scaled agility and offers practical insights for organisations looking to become more agile. The management literature on agile structures is still relatively scarce and fragmented, but emerging. Our results highlight the characteristics, advantages and tensions created by agility at the organisational level, and give insight for executives to support their decisions on organisational design. By examining the structural, cultural, and leadership antecedents that are necessary for success, this paper contributes to the ongoing debate about agile organisations. The concept of 'Agility Forest' proposed here will contribute to the better understanding of the connections between structure, culture, and leadership.

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## 1. INTRODUCTION

In today's rapidly changing business environment, agility has emerged as a critical aspect of management and organisational performance (Li et al. 2020; Margherita et al. 2021). Organisations are under immense pressure to respond – to market changes, new technologies, and evolving customer demands (Csedő et al. 2017; Demirel – Kesidou 2019; Horváth – Szabó 2019). Most companies have to survive in a complex environment, where the old solutions, former best practices are no longer working (Petry 2018; Spigel et al. 2022; Stacey 2006). Proactive agile organisations are complementing or even replacing the traditional top-down, command and control, bureaucratic, slow organisations (Smet et al. 2018). Despite the emerging academic interest however, agility in organisations is still a relatively new phenomenon (Khan et al. 2022; Rademakers et al. 2019). This paper focuses on agile organisations and explores the latest research areas related to them.

### 1.1. The emergence of agile organisations in academic discussion

The emergence of agile organisations as a topic in the academic discussion is a reflection of the growing importance of agility in management. Scholars from a variety of disciplines, including management, organisational behaviour and information systems, have explored the concept of agility and its implications for organisations (Batra 2020; Qin – Nembhard 2015; Saputra et al. 2021).

In the 1990s, researchers began to explore the concept of agile manufacturing, which focused on the ability of manufacturing firms to respond quickly to changing customer demands (Booth 1996; Gunasekaran 1999; Yusuf et al. 1999). This research provided the foundation for the development of the agile organisation concept (Jin-Hai et al. 2003; Maskell 2001).

More recently, scholars have explored the concept of agility in a variety of contexts, including software development, project management, and supply chain management (Agarwal et al. 2007; Conforto et al. 2016; de Cesare et al. 2010; Sheffield – Lemétayer 2013). For example, researchers have examined the use of agile methods in software development, which emphasize flexibility, collaboration, and iterative development (Coram – Bohner 2005; Rico – Sayani 2009). Other scholars have explored the role of agility in project management, where the ability to respond quickly to changes is critical for success (Gong – Ribiere 2023; Lee et al. 2006).

Although agility has started as an innovative method for specific functions such as software development or project management, it has recently been scaled up onto the organisational level and increasingly considered as a general management concept for large organisations (Rigby et al. 2018). When reviewing the literature of agility, Sońta-Drączkowska (2018) identified five major research streams focusing on software development, project management, agility on the organisation level, the application of hybrid approaches, and on the agile methods for innovation. She claimed that research on an organisational level was relatively scarce, compared with other focus areas. More than five years later, this paper considers agility at enterprise-level only, without narrowing down to specific functions.

### 1.2. Agile organisations: definition and characteristics

The definition of an agile organisation lacks established, clear-cut elements. Authors tend to highlight behavioural characteristics and claim that it is an agile organisation is one which

rapidly adapts to changes in its environment to remain productive and cost-efficient (Demigha – Kharabsheh 2019). Another perspective comes from the software development-related roots of agility and suggests that agile organisations are those that have embraced the values and principles of the Agile Manifesto (www.agilemanifesto.org) in their management and organisational practices (Hohl et al. 2018; Schön et al. 2015). According to the Agile Manifesto, these organisations are characterized by their ability to quickly deliver customer value and respond to changes or adapt to new challenges (Apke 2015).

In addition to the adaptiveness of agile organisations, sources claim that they are typically customer-focused, flat, decentralized, and have a strong culture of collaboration and continuous improvement. Agile organisations are structured around teams that are empowered to make decisions and take actions. These teams are typically cross-functional and self-organizing, meaning that they have the autonomy to determine how to achieve their goals. This approach fosters a culture of innovation and experimentation, where teams can test new ideas and learn from their mistakes. They use feedback from customers and stakeholders to identify areas for improvement and make changes quickly (Harvey – De Meuse 2021; Holbeche 2018; Leybourn 2013).

## 1.3. Research context

Although definitions might be not perfectly clear-cut yet, the main characteristics of an agile organisation appear similar in most sources. It is less clear however how exactly organisations can become agile, and what are the antecedents of an agile organisation. When it comes to transformation and becoming agile, sources mention one or more of the following key terms.

1. Agile leadership: An important focus of the academic literature is the role of leadership in agile organisations (Day – Schoemaker 2019; Theobald et al. 2020; Widyastuti – Susanti 2022). This includes topics such as the responsibilities of a leader, the leaders' identity in agile organisations, the leadership methods in agile teams, or the kinds of skills and competencies required for agile leaders. Similar to nearly any transformation, the role and skills of the leadership seems to be crucial when creating an agile system.
2. Agile culture: The importance of culture in agile organisations is another key focus of the academic literature. This includes topics such as the development of an agile culture, the impact of culture on agile teams, and the role of values and principles in creating an agile culture (Bushuyev et al. 2020; Doz – Guadalupe 2019; Kavitha – Suresh 2021; Rane – Narvel 2022).
3. Agile teams and structure: The composition, structure, and functioning of agile teams, and business processes is a highlight in many agility-related sources. This includes topics such as how to build up high-performing, user-centred agile teams, the importance of team dynamics and communication, and how to coordinate the job between distributed agile teams (Balasubramaniyan 2021; Demigha – Kharabsheh 2019; Kohnova – Salajova 2021).
4. Agile methodologies and practices: There is a significant amount of literature on the different methodologies that can be used to help to implement agility in the organisations. These methodologies include Scrum, Kanban, Lean, and XP (Rigby et al. 2016). These also prescribe or recommend practises such as team ceremonies, backlog management, continuous integration, continuous delivery, and test-driven development (Bell et al. 2017; Krusche et al. 2014; Schwaber – Sutherland 2017).

5. The academic discussion of agile organisations has also explored the challenges and benefits of agility (along with their advantages and promises). For example, scholars have raised concerns about the potential for agile organisations to become chaotic and uncoordinated (Börjesson – Mathiassen 2005; Kreutzer et al. 2018; Rodrigues et al. 2018). Others have suggested that the emphasis on speed and flexibility can come at the expense of long-term planning and strategic thinking (Kohnova – Salajova 2021; Linden 2021; van Ruler 2021). Researchers even mention that the high intensity of work in agile organisations may lead to burn-out syndrome (Grant 2017).

We can see these research directions and focus points as a graphical representation shown by Fig. 1. The risks and benefits evaluation may be done in general or specific to the structural, cultural or leadership aspects as well. Agile methods tend to be a narrower topic such as rituals (tip of the iceberg) in cultural models. The aspects of structure, culture and leadership can be studied separately, however, they are naturally interrelated.

To conclude on the research context, we can see that the literature on agile organisations is constantly evolving as organisations seek to become more adaptive, flexible, and responsive to changing market conditions. Researchers seek to grasp the essence of agility by describing the benefits and drawbacks, and the structural, cultural and leadership characteristics of agile organisations. Another major topic seems to be agile methodology and practices, but this latter is out of the interest and capacity of the present paper, due to the fact that we must stay on the organisation level, without narrowing down to specific departments or units. We will thus develop the structural, cultural and leadership dimensions of agile organisations in the following sub-sections, after the explanation of the research methodology.
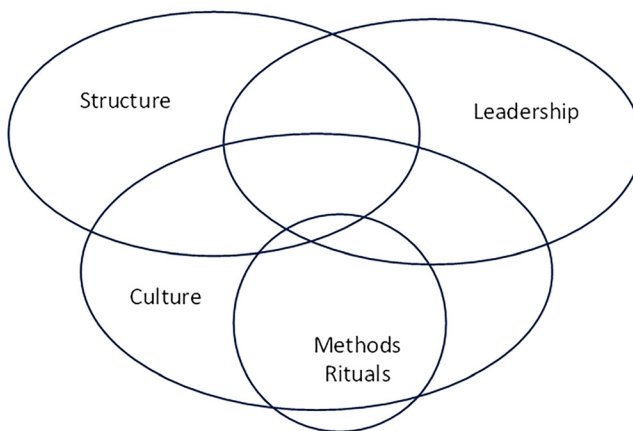


**Fig. 1.** The graphical map of agile organisations' research context
*Source*: authors.

## 2. METHODOLOGY

We carried out a systematic review of the relevant literature to answer the research questions formulated in the previous section. As suggested by Tranfield, Denyer and Smart (2003), we kept this process iterative, and refined our query after the clarification of our research criteria. In the following, we layout the steps adopted to find and analyse the relevant literature. Table 1 highlights the specific queries with the number of resulting hits. We have followed here the procedure suggested by Anand, Offergelt and Anand (2021b), including the restriction of source databases to Elsevier's Scopus.

We first performed a search for relevant papers based on specific keywords identified in Section 1. A query for 'agile' AND 'management' in the Scopus database resulted in 3,630 documents listed. We then filtered these for the subject area (to be relevant for management), source type (to get journal articles), and language (for English). This step resulted in extracting 234 articles in English on the topic of agility in the context of business and management.

When analysing the search results (see Fig. 2), we noticed that this topic started to emerge at a stable pace from 2017. Hence 2017 to 2023 will be our timeline of reviewing the literature. This process reduced our set of documents to 139.

Based on these 139 articles, we finetuned our key terms and definitions. In order to answer our research questions, we needed to develop an organisation-level focus, therefore we decided to exclude software-specific keywords which apparently distorted our results with a too narrow, IT-specific perspective. Then, the resulting 130 documents have been enlarged again to 987 by including more organisation-level, agile-specific keywords such as agile firm, agile company and agile organisation.

After a partial review of the resulting document pool, we restricted the search to only 'organisational structure' or 'business model'-related documents: in order to keep only those relevant for reflecting on our research context. The resulting 63 articles have been subject to more careful analysis by two independent researchers to see if they are truly organisational-level articles on agile organisations. The researchers shortlisted only those which dealt with the topic of agility in a business context and with a corporate-level scope. They excluded documents with only a narrow-focused agility (e.g.: project management, software development…), and kept papers focusing on the characteristics and consequences of agile organisational models. 21 articles matched the shortlist of both researchers.

The next section is based on the detailed examination of these 21 articles. The qualitative thematic synthesis was prepared according to the guidelines proposed by Anand, Muskat, Creed, Zutshi, and Csepregi (2021a). The literature allowing us to derive research themes and propose future research questions was synthetised following the recommendations by Heisig and Kannan (2020). We provide detailed bibliometric information on the final article pool in Annex 1.

## 3. RESULTS AND DISCUSSION

All reviewed articles have been published in peer-reviewed journals and, except for one article – have already been cited in other similar publications, meaning that they became part of the academic discussion on agile organisations. Figure 3 shows that these discussions tend to be channelled by high quality academic journals.

**Table 1.** Reference selection protocol

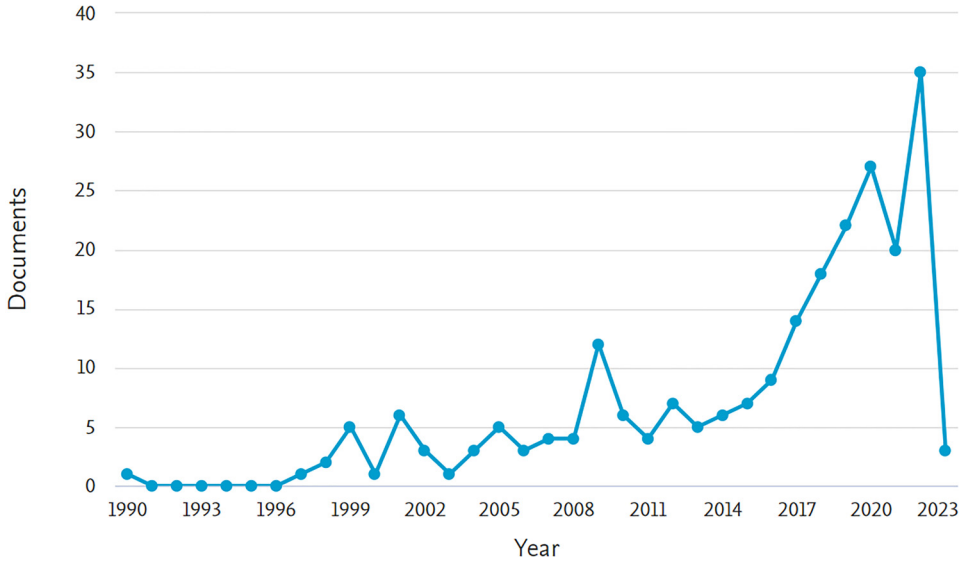| Key word protocol query | No. of hits |
|---|---|
| Keyword Protocol applied in Scopus<br>TITLE-ABS-KEY (agile AND structure) AND (LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (SRCTYPE, "j")) | 234 |
| TITLE-ABS-KEY (agile AND structure) AND (LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (SRCTYPE, "j")) AND (LIMIT-TO (PUBYEAR, 2023) OR LIMIT-TO (PUBYEAR, 2022) OR LIMIT-TO (PUBYEAR, 2021) OR LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2019) OR LIMIT-TO (PUBYEAR, 2018) OR LIMIT-TO (PUBYEAR, 2017)) | 139 |
| TITLE-ABS-KEY (agile AND structure) AND (LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (SRCTYPE, "j")) AND (LIMIT-TO (PUBYEAR, 2023) OR LIMIT-TO (PUBYEAR, 2022) OR LIMIT-TO (PUBYEAR, 2021) OR LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2019) OR LIMIT-TO (PUBYEAR, 2018) OR LIMIT-TO (PUBYEAR, 2017)) AND (EXCLUDE (EXACTKEYWORD, "Scrum") OR EXCLUDE (EXACTKEYWORD, "Software Engineering") OR EXCLUDE (EXACTKEYWORD, "3-D Printing") OR EXCLUDE (EXACTKEYWORD, "3D Print") OR EXCLUDE (EXACTKEYWORD, "3D Printers") OR EXCLUDE (EXACTKEYWORD, "3D Printing") OR EXCLUDE (EXACTKEYWORD, "3D-printing") OR EXCLUDE (EXACTKEYWORD, "Agile Software Development") OR EXCLUDE (EXACTKEYWORD, "Agile Software Development (ASD)")) | 130 |
| TITLE-ABS-KEY (agile AND (structure OR organi* OR firm* OR compan*)) AND (LIMIT-TO (SRCTYPE, "j")) AND (LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (PUBYEAR, 2023) OR LIMIT-TO (PUBYEAR, 2022) OR LIMIT-TO (PUBYEAR, 2021) OR LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2019) OR LIMIT-TO (PUBYEAR, 2018) OR LIMIT-TO (PUBYEAR, 2017)) AND (LIMIT-TO (LANGUAGE, "English")) AND (EXCLUDE (EXACTKEYWORD, "Scrum") OR EXCLUDE (EXACTKEYWORD, "Software Engineering") OR EXCLUDE (EXACTKEYWORD, "3-D Printing") OR EXCLUDE (EXACTKEYWORD, "3D Print") OR EXCLUDE (EXACTKEYWORD, "3D Printers") OR EXCLUDE (EXACTKEYWORD, "3D Printing") OR EXCLUDE (EXACTKEYWORD, "3D-printing") OR EXCLUDE (EXACTKEYWORD, "Agile Software Development") OR EXCLUDE (EXACTKEYWORD, "Agile Software Development (ASD)")) | 987 |
| TITLE-ABS-KEY (agile AND (structure OR organi* OR firm* OR compan*)) AND (LIMIT-TO (SRCTYPE, "j")) AND (LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (PUBYEAR, 2023) OR LIMIT-TO (PUBYEAR, 2022) OR LIMIT-TO (PUBYEAR, 2021) OR LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2019) OR LIMIT-TO (PUBYEAR, 2018) OR LIMIT-TO (PUBYEAR, 2017)) AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (EXACTKEYWORD, "Organisational Agility") OR LIMIT-TO (EXACTKEYWORD, "Agile Management") OR LIMIT-TO (EXACTKEYWORD, "Agile Transformation") OR LIMIT-TO (EXACTKEYWORD, "Business Model Innovation") OR LIMIT-TO (EXACTKEYWORD, "Agile Organisation") OR LIMIT-TO (EXACTKEYWORD, "Agile Organisations") OR LIMIT-TO (EXACTKEYWORD, "Business Model")) | 63 |
| Thorough analysis of the remaining documents, exclusion of those judged irrelevant for answering the research questions | 21 |

*Source*: authors.

### Documents by year



**Fig. 2.** Distribution of search results by time
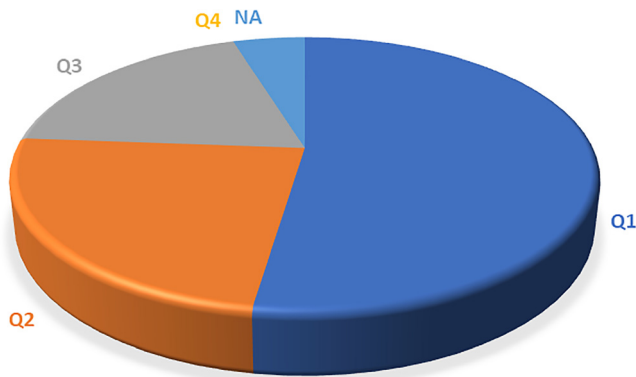*Source*: Scopus.com (retrieved on 7 February 2023).



**Fig. 3.** Scimago journal rankings of the reviewed papers
*Source*: authors.

More than half (11) of the articles were based on empirical studies, but we also found two review papers from 2019 and from 2021, and seven conceptual papers from 2017, 2018 and 2019. These numbers might indicate that agility still being a relatively new area, most researchers are still in the empirical discovery phase to build up related literature, with others

are trying to conceptionalise formal knowledge. Our reviewed articles cover mainly large companies, and focus on the organisation as a whole. By definition we excluded papers regarding agility as a feature for a sole function such as IT or project management. The aggregated sample size of the research papers covers 1,075 persons in total, 16 companies where the counting of persons was not applicable, and various corporate documents such as reports and emails for example.

For the thematic clustering of the research papers, we applied the bottom-up process of Heisig and Kannan (2020) and extracted the main themes and topics from the previously identified research streams. The 21 selected articles were thematically clustered and coded according to their type, the mentioned advantages and risks or tensions of agile organisations, the reasons and prerequisites of agile transformations, descriptive data on the sample of empirical papers such as company size, industries, or sample size, and characteristics related to the structure, culture and leadership of agile organisations. Most papers kept a larger perspective and considered both the advantages and the potential tensions related to the agile structure. The following sub-sections highlight the results of our thematic analysis.

## 3.1. Overview of the advantages and tensions of being an agile organisation

Advantages and tensions are identified and considered in nearly all selected articles, adding up to long lists of characteristics and references. For better readability, we did not strive for comprehensive full lists but rather for highlighting the main features and using only reference examples when more articles referred to the same characteristics. Based on the 21 articles selected, the main advantages of being agile include faster time-to-market (Walter 2021), improved project success rates (Sommer 2019), increased customer satisfaction (Joiner 2019), enhanced teamwork and communication (Goncalves et al. 2020), improved flexibility and adaptability (Goncalves et al. 2020), increased efficiency and productivity (Junker et al. 2022), and greater innovation and creativity (Prange 2021; Vaishnavi et al. 2019). Agile methods support continuous improvement and learning, leading to higher quality outcomes (Strode et al. 2022). The agile approach can help organisations to be more responsive to changing customer needs and market demands, leading to greater competitiveness (Troise et al. 2022). These features are also the typical reasons why an organisation might want to transform into an agile one, albeit some of them merely mention formal requests or informal pressures from the market as motifs for transformation (Bastiaansen – Wilderom 2022; Strode et al. 2022).

At the same time, according to our sample articles, there are several potential risks or tensions associated with being or transforming into an agile organisation. The main tensions include resistance to change even in top management and lack of organisational support (Sommer 2019), and the challenge of scaling-up in large organisations (Holbeche 2019). Fast reaction and short-term changes can conflict with long-term, strategic goals, and confusion can also occur around traditional positions versus new roles (Strode et al. 2022). Difficulties can become more apparent when agile is applied in strongly regulated industries (Prange – Hennig 2019). Changing the employees' mindset from traditional ways of thinking and working to agile can take much longer than planned or can not be carried out at all (Bastiaansen – Wilderom 2022). The cultural environment has apparently an extremely strong impact on the success of agility, and cultural diversity in teams can make the agile ways of working harder (Bastiaansen – Wilderom 2022).

Thus, it seems that agile may not be suitable for all organisations. In the following sub-sections we summarize the most prevalent characteristics found in our sample related to structure, culture, and leadership (often inter-related). Our results can orient leaders when looking for the ideal organisational form to be adopted in their firms.

## 3.2. The structure-related characteristics of agility

Advantages and tensions related to an agile operating mode are naturally impacted by organisational design. According to our sample, agile organisations seem to be typically characterized by flat hierarchies, cross-functional teams operating as the smallest units of agile organisations, and decentralized decision-making processes (Gerster et al. 2020). Teams in agile organisations work collaboratively and have a shared sense of purpose and ownership over their work, since they are typically self-organizing and have a high degree of autonomy in decision-making (Vaishnavi et al. 2019).

These empowered, cross-functional teams, often called "squads", need to cooperate with each other in large enterprises. Several types of structural design can help the communication and the deliveries of these squads. Spotify's structure is an example where a "tribe" was built up from 8 to 12 squads with the same business interest (Gerster et al. 2020). This agile structure allows for greater flexibility, adaptability, and faster response times to changing market conditions and customer needs. The way in which work is organised implies that agile teams deliver value in short cycles and ask continuous feedback from their customers or end users (Denning 2017).

## 3.3. The characteristics of agile culture

Agile organisations not only have specific structural characteristics and organisational design, but also develop a new type of culture. According to our sample, the agile ways of working promote a culture of collaboration, transparency, and continuous improvement (Goncalves et al. 2020; Prange 2021; Vaishnavi et al. 2019). Agile culture values customer satisfaction and responsiveness to change over strict adherence to plans and processes (Nejatian et al. 2018; Strode et al. 2022).

Agile culture promotes a sense of ownership and accountability among team members, who are empowered to make decisions and take responsibility for their work (Bastiaansen – Wilderom 2022). Agile culture encourages experimentation and learning through feedback loops and iterative processes (Goncalves et al. 2020; Prange 2021). Agile culture also requires a high degree of openness among team members, as well as a willingness to embrace change and adapt to new situations (Bastiaansen – Wilderom 2022; Vaishnavi et al. 2019). This includes developing a shared vision and values, fostering an environment of trust and psychological safety, and aligning incentives and rewards to encourage desired behaviours (Bastiaansen – Wilderom 2022). In agile organisations, innovation is fostered by shared knowledge and creativity, learning and diversity are encouraged and rewarded (Holbeche 2019).

## 3.4. Agile leadership

It became apparent in our sample articles that potential tensions, structural characteristics, and especially cultural values and behavioural patterns depend heavily on the skills and the level of involvement of top management (Joiner 2019). We must note here that most of the examined

articles use leadership as a synonym for top management, but there are papers in which leadership is used for the activity of a leader in the organisation. Based on the 21 articles reviewed, the following characteristics of leadership are important when operating as or transforming into an agile organisation.

Best practice suggests that agile leaders should prioritize serving the needs of their team members and removing obstacles for them to work effectively, meaning that they should act as a "servant leader" (Tyszkiewicz – Pawlak-Wolanin 2017). As a servant leader, they provide coaching and mentorship to team members to help them grow and develop in their roles (Bastiaansen – Wilderom 2022). However, being a servant leader can be especially challenging in today's VUCA world with constant changes. Leaders must pay attention to formulate a clear vision statement, stay flexible and adaptable to changing circumstances, and be willing to adjust their approach when needed (Denning 2018; Vaishnavi et al. 2019).

Tyszkiewicz and Pawlak-Wolamin (2017) also point out that leaders in agile organisations must constantly balance between top-down and bottom-up decision making. Bottom-up decision-making builds on the collaborative culture described earlier. How can the development of this culture be facilitated by leadership? Agile leaders encourage collaboration and facilitate communication between team members (Junker et al. 2022). They build trust with their team members by being transparent, providing a clear vision, communicating effectively, and following through on commitments (Prange 2021). Acting as catalysts for changes in governance structures fosters behavioural change within the organisation (Sommer 2019).

## 3.5. Research synthesis

In this sub-section we synthetize our findings and give them more meaning through contextualisation. The structure of our previous sub-sections reflects an important contribution to the academic and practical understanding of agile organisations: the coherent combination of structural, cultural and leadership characteristics appears to be a key element for being agile.

According to our content analysis of 21 articles, agility is considered by rather large firms. Some of them are "born agile" such as Netflix or Spotify, other become agile by transformation (Bastiaansen – Wilderom 2022). The latter can be very diverse in terms of size and industry. It is apparent that agility is not a "one size fits all" solution and that companies need to find the right agile framework for their own case (Prange – Hennig 2019). In markets and industries that are strictly regulated for example, agility has proven to be only partially possible. When articles examine and present different industry cases, the authors wonder to what extent their example could be applied to other companies or industries, and how interesting it would be to see the differences (Hamad – Yozgat 2017).

Another aspect which became apparent with this review is that structural, cultural and leadership characteristics are bound together and seem equally important for successful agility: a clear vision and alignment with business goals, a culture of transparency, trust, and collaboration, the ability to respond quickly to changing market and customer needs, a focus on delivering value to customers through continuous improvement, the adoption of agile methodologies and practices, the involvement and empowerment of team members, the ability to adapt and learn from failures, and the support and involvement of leadership (Gerster et al. 2020; Oliva et al. 2019). Other success factors include the creation of cross-functional teams, the use of data and metrics to guide decision-making, the alignment of organisational structure and

processes with agile principles, and the adoption of a growth mindset (Denning 2018; Hamad – Yozgat 2017; Nejatian et al. 2018; Prange 2021). These features blend structural, cultural, and leadership characteristics.

It is apparent however, that the authors of the 21 articles focus more on culture and leadership, and less on structure. The reason could be that the usual first step in the way towards agility is structural transformation and the adoption of agile practices. The appropriate organisational structure is only a step towards agility, however, and it should help to foster agile culture which takes much longer time to develop. As Bastiaansen and Wilderom (2022) argue, structural change with the adoption of agile practices ("doing agile") is only the first level in the transformation, followed by the cultural shift and a new mindset from the side of both leaders and employees ("being agile"). Another sidenote here is that along with the structural, cultural, and leadership characteristics already mentioned, only a few of the authors emphasised that the essence of being agile is following the agile values and principles declared in the Agile Manifesto (see Section 1).

The significant change in terms of leadership might be the hardest nut to crack. The executives of any company have successful behavioural patterns based on which their career had been built. Changing their formerly successful mindset and behaviours is a difficult. Despite that, success without leaders' commitment to embrace agile is clearly illusionary. But surprisingly, the radical change in the leaders' mindset is also hardly mentioned in the articles. The article by Joiner (2019) emphasizes that agile leaders must develop a "self-leadership agility", implying that they would proactively seek feedback, and regularly reflect on themselves.

To summarise Section 3, we believe that real agile organisations should harmonize the structure, culture and leadership aspects and should focus on all of them equally. We can therefore see organisational agility as a thriving forest (Agility Forest), with three vital elements work together to keep it healthy and resilient. The culture of the organization is like the soil that provides a nourishing foundation for the growth of trees and plants. The structure is like the trees (tribes) themselves, with their interconnected roots and branches that form a strong and flexible ecosystem. And leadership is – like the sun and the rain – providing energy, nourishment and direction needed for the forest to flourish and adapt to changing conditions.

## 4. CONTRIBUTIONS AND FUTURE IMPLICATIONS

In the previous section, we gave a summary of the latest research results on agility to leaders who seek to better understand what an agile organisation means and how it can be developed. They will be able to use these practical insights provided as advantages and potential tensions in deciding whether an agile form would really fit their purposes.

At the same time, our review contributes to theory on two levels. First, we demonstrated the current state of the literature on agile organisations and how it can be thematised. We highlighted that when it comes to agile organisations, the most important success factor might be the coherent combination of structural, cultural, and leadership characteristics (Agility Forest) which usually yield results in different time horizons (structural transformation being quicker than the cultural one). Second, as the field of agility and agile organisations is maturing, some topics have been better developed, while limited attention has been paid to several other, which can offer various avenues for impactful future research.

As we have seen, among the reviewed articles, all 21 analysed agility at the enterprise level. The academic research on agility started with a scope on functions (IT), and scaled-up to the enterprise-level, the latest trends show a further development on the research scope: the next step seems to study agility not only within a given organisation, but in its whole network of partners, for example its supply chain. Forthcoming research may focus on that higher level, instead of only studying separate companies.

Another interesting phenomenon is the lack of the topic of burnout, identified relevant for agile organisations in Section 1. We saw 21 articles without mentioning this potential danger, but it might get a stronger impact with time, once a more significant number of companies had shifted to an agile working mode. The same goes for the various roles and functions of agile leaders (who are the leaders in agile organisations, see Section 1). Given that there are various labels for new roles (e.g.: product owner, agile coach, scrum master, chapter lead…), but the reviewed articles do not go deeper in their activities, this topic might also get more attention in the future.

Finally, another aspect in terms of the relevance of agility is – surprisingly – speed. In most articles, being agile means being fast, but Prange (2021) reminds us, that "active waiting" and slow action can be agile as well. This new idea sounds revolutionary and is certainly worth further examination.

## 5. LIMITATIONS AND CONCLUSION

This paper reviewed the literature on agile organisations in two steps. In Section 1, we presented the topic in general with its key terms and research streams. Then, using the methodology of a systematic literature review, we carefully selected and analysed the 21 most relevant, high-quality publications in the Scopus database, dealing with agility at the organisational level. We cannot guarantee that we found all relevant papers for the thorough analysis of the topic, but we used valid and transparent means to give an overview of the most recent stock of academic research.

According to our results, agility is still a relatively new scientific topic, with growing academic and industry interest. As of today the definitions and boundaries might not be perfectly sharp yet, but several major themes seem to be emerging in the literature already. We have selected the 21 most relevant articles on agile organisations to see if they justify the selection of these themes, and we carried out our coding accordingly. Our list of advantages and potential dangers can help executives decide whether agility would fit their corporate environment. Our sections on structure, culture, and leadership attempted to identify the most important elements of successful agility.

Our message to practitioners is that agile is not for everyone, but it helps those who fit with the main structural-cultural-leadership elements in becoming more adaptive organisations. It seems to be clear that structure, culture and leadership form a strong alliance in agile organisations – like the soil, the trees and the sun in a forest: we saw that for many, structural change is the first step followed by a gradual shift in terms of culture and leadership. We also saw why this latter is often the major cause of failure in agile transformations. We came to the conclusion that we must handle agility with all these three main elements combined. They are the components of the concept of Agility Forest proposed in this paper, namely the cultivating culture (soil), the interconnected structure (trees and branches), and the guiding and servant leadership (sun and rain).

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## ANNEX

**Table A1.** The final sample of our systematic literature review

|    | Author(s) (Year) | Sc. Rank | Type | Agility + | Agility − | Firm size | Sample size |
|----|------------------|----------|------|-----------|-----------|-----------|-------------|
| 1  | Junker et al. (2022) | Q1 | Empirical | yes | no | Large | 476 persons |
| 2  | Strode et al. (2022) | Q1 | Empirical | yes | yes | Large | 37 persons |
| 3  | Bastiaansen – Wilderom (2022) | Q2 | Empirical | yes | yes | Large | 118 persons |
| 4  | Troise et al. (2022) | Q1 | Empirical | yes | yes | SME | 204 persons |
| 5  | Prange (2021) | Q1 | Empirical | yes | yes | Large | 25 persons |
| 6  | Walter (2021) | Q1 | Review | yes | yes | Diverse | 75 articles |
| 7  | Ghezzi – Cavallo (2020) | Q1 | Empirical | yes | yes | Startup | 17 persons, various documents |
| 8  | Gerster et al. (2020) | Q2 | Empirical | yes | yes | Large | 15 companies |
| 9  | Goncalves et al. (2020) | Q2 | Empirical | yes | yes | Diverse | 10 persons |
| 10 | Prange – Hennig (2019) | Q3 | Conceptual | yes | yes | NA | NA |
| 11 | Joiner (2019) | Q3 | Conceptual | yes | yes | NA | NA |
| 12 | Oliva et al. (2019) | Q1 | Empirical | yes | yes | Startup | 5 persons |
| 13 | Vaishnavi et al. (2019) | Q1 | Review + empirical | yes | no | NA | 25 persons |
| 14 | Sommer (2019) | Q2 | Empirical | yes | yes | Large | 1 company |
| 15 | Holbeche (2019) | Q1 | Conceptual | yes | yes | NA | NA |
| 16 | Denning (2018) | Q3 | Conceptual | yes | yes | NA | NA |
| 17 | Fjeldstad – Snow (2018) | Q1 | Conceptual | yes | yes | NA | NA |
| 18 | Nejatian et al. (2018) | Q1 | Empirical | yes | yes | NA | NA |
| 19 | Tyszkiewicz – Pawlak-Wolanin (2017) | Q2 | Conceptual | yes | yes | NA | NA |
| 20 | Hamad – Yozgat (2017) | NA | Empirical | yes | NA | Large | 158 persons |
| 21 | Denning (2017) | Q3 | Conceptual | yes | yes | Large | NA |

*Source*: authors.