

The Contribution of Agility to an Organization's Digital Transformation

Ghita Ibrahim¹, Bouchra Benchekroun¹

¹ Faculty of Law Economics and Social Sciences, Sidi Mohammed Ben Abdellah University, Fez, 28810, Morocco

Abstract – Firms strive to become agile as part of their organization's transformation to face the changes spurred by the digital world. Thus, this study aims to provide new and insightful findings to assist firms in carrying out digital transformations through agility. We surveyed agility practitioners currently operating in companies undergoing or within digital transformation. Our findings suggest that agility and digital transformation are still in their early stages and that they may coexist. Moreover, the study supported that if agility is well-enabled, it can assist an organization's digital transformation by leveraging the following components, namely agile culture, collaboration, value-co-creation, experimentation, willingness to take risks, continuous improvement, and organizational learning, seizing market opportunities, competitiveness, and agile leadership. In addition, the study identified the pain points that companies encounter in this process, including employee resistance to change. Finally, the findings represent a first step toward a shared understanding of ways to carry out digital transformations through agility and serve to guide future research work while also assisting practitioners in implementing digital transformation effectively.

Keywords - Agility, digital transformation, components.

DOI: 10.18421/TEM124-48

<https://doi.org/10.18421/TEM124-48>

Corresponding author: Ghita Ibrahim, Faculty of Law Economics and Social Sciences, Sidi Mohammed Ben Abdellah University, Fez, 28810, Morocco


Email: ghita.ibrahimi@usmba.ac.ma

Received: 14 July 2023.

Revised: 26 October 2023.

Accepted: 08 November 2023.

Published: 27 November 2023.

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1. Introduction

Jack Welch once stated, When the rate of change inside an institution becomes slower than the rate of change outside, the end is near [1]. This states the challenges faced by firms dealing with the current business environment. Namely, firms need to encounter rapidity, intense competition, market turbulence, uncertainty, and continuous changes increased by digital disruption [2]. These companies need to disregard past successes and prepare themselves for a flourishing future incorporating digital. Therefore, digital transformation requires an adjustment in properties, a new way of doing things, a particular culture, and skilled people [3]. Moreover, Vial defined digital transformation (DT) as the aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies [4]. It entailed a plethora of opportunities offered by integrating the Internet, blockchain, big data, artificial intelligence (AI), and related technologies to improve existing processes, products, and services, adapt to dynamic shifts in consumer demand, the COVID-19-related disruptions, and business operations readjustments [5], [6].

However, Many companies struggle with digital transformation as they rely on technology improvements rather than developing comprehensive planning, coherent digital strategies, and an open, collaborative, and shared culture supported by organizational agility [5], [7]. As a result, the marketing literature emphasizes the need for agility to address the complexities of digital transformation [8]. Agility is a critical market survival tool [9]. According to Lu and Ramamurthy it is defined as a firm's ability to cope with rapid, relentless, and uncertain changes and thrive in a competitive environment of continually and unpredictably changing opportunities [10]. Agility, in this context, is described as the ability to move quickly, cater to customers' needs, predict and respond to market opportunities, and respond to disruptions related to digital technologies [5], [8].

The present article aims to broaden both academic research and practice. From a theoretical perspective, we intend to broaden our understanding of how agility contributes to an organization's digital transformation. From a managerial perspective, we intend to contribute to a general call for novel and relevant insights to assist organizations in undertaking and carrying out digital transformation [11]. In addition, the results and propositions of this study could help managers and practitioners understand ways to develop and implement agility to improve digital transformation.

The remainder of this paper is structured as follows: the second section provides a literature review on agility and digital transformation. The third section describes the details of the research methodology adopted. The fourth section represents the research findings, while the final section concludes with a discussion of the study's outcomes, theoretical contributions, and managerial implications, and outlines this work's limitations and avenues for future research.

2. Literature Review

Organizations must abandon paradigms and cultures that have prevailed for centuries to thrive in highly competitive markets. Hence, they must address new business models that will allow them to compete in the future [12].

2.1. Agility: A Rapid Whole-Body Movement With Change

Agility is the ultimate solution to deal with the woes of this fast-paced present [13]. This stresses the increased engagement in attempting to grasp the notion of agility. Accordingly, multiple definitions and models have emerged over time, lightening the complexity hidden behind this deceptively simple seven-letter word. Thus, Yang and Liu synthesized the work of several researchers [13] into the following definition: Agility is a complex, multidimensional, and context-specific concept comprised of the ability to sense environmental change and quickly respond to unpredicted change by flexibly assembling resources, processes, knowledge, and capabilities.

Agility enables organizations to enhance the customer experience by providing end-to-end integrated solutions. It allows them to master change and uncertainty by fostering change management to succeed in transitioning into the desired future state. It can boost competitiveness by nurturing collaboration among internal and external resources. Furthermore, agility fosters organizational learning by aiming to continually improve and evolve, avoiding stagnation and boosting overall organizational performance [14].

2.2. Digital Transformation: A Key Organizational Reform Initiative

Digital transformation has become a controversial theme among academics and practitioners in recent decades. Hence, it is due to its multi-disciplinary nature, as it affects the whole company and its business practices [15] by rearranging the processes to change the business logic of a firm [16] or its value creation process [15]. Therefore, digital transformation can be described as the use of new digital technologies to enable major business improvements in operations and markets, such as enhancing customer experience, streamlining operations, or creating a new business model [17].

Hence, digital transformation does not happen by accident. It is a journey that requires a clear map guided by a digital strategy [18]. The development of a clear, consistent, and shared digital strategy initiates and promotes the digital transformation process [19]. Furthermore, a digital strategy enables organizations to improve customer and user experience; foster flexibility, autonomy, and efficiency; and redefine organizational structure, processes, and business models.

However, many transformation initiatives fail since they do not only create new opportunities but also lead to new challenges. Several challenges towards change have been identified: the absence of a digital and innovative culture that fosters change, continuous learning, risk-taking, cross-functional collaboration and, resists silo building; Leaders and their Leadership style; lack of skills, competencies, and experience.

2.3. The Potential of Agility for Contributing to the Digital Transformation

Agility was found to be a key managerial challenge in digital transformation [20]. Firms must foster flexibility and agility to embrace digital transformation [15]. Regarding its ability to enable continuous improvements in creating and capturing value through product, service, process, and business model innovation [21].

Thus, transformation processes resulting from digital transformation can be supported by an agile organizational culture that could facilitate restructuring or the adoption of new management concepts [22]. Given that, most of the firms that have initiated the digital transformation process often experience failures due to inert organizational cultures that resist change [22]. As agility enables firms to break functional silos, nurture cross-functional collaboration, and foster co-creation processes known as collaborative activities by parties involved in direct interactions that aim to contribute to value for one or both parties [23].

Since digitalization requires greater involvement of customers and ecosystem actors in value co-creation [24]. Furthermore, agility permits firms to cultivate a willingness to take risks and act proactively and responsively [21]. This enables firms to experiment with small changes during the digital transformation process before scaling these successful experiments to the rest of the organization [17]. Firms can foster learning through small, incremental, and iterative changes while maintaining their ability to adapt long-term plans based on the outcomes of such experiments and ongoing changes in their environment [17].

Along the same lines, we emphasize the importance of continuous learning in delivering high-quality products or services under tight budgets and time constraints [25]. Namely, agility enables firms to bring valuable product and/or service offerings to

customers to achieve the same result in significantly shorter product or service development cycles than the traditional product development process [26].

Furthermore, agility is linked with the ability to sense and seize market opportunities provided by digital technologies [15]. This enables companies to create value for customers by developing new products, services, and business models [15] and, allows them to generate more competitive actions and greater action repertoire complexity [21].

However, business transformations can only be successfully implemented if the change is accepted [22]. This explains the need for leadership skills as a set of activities required to manage institutional change [5]. Considering that mastering digital transformation requires leaders to establish a change-oriented mindset and the agility required to respond to disruptions related to digital technologies [17].

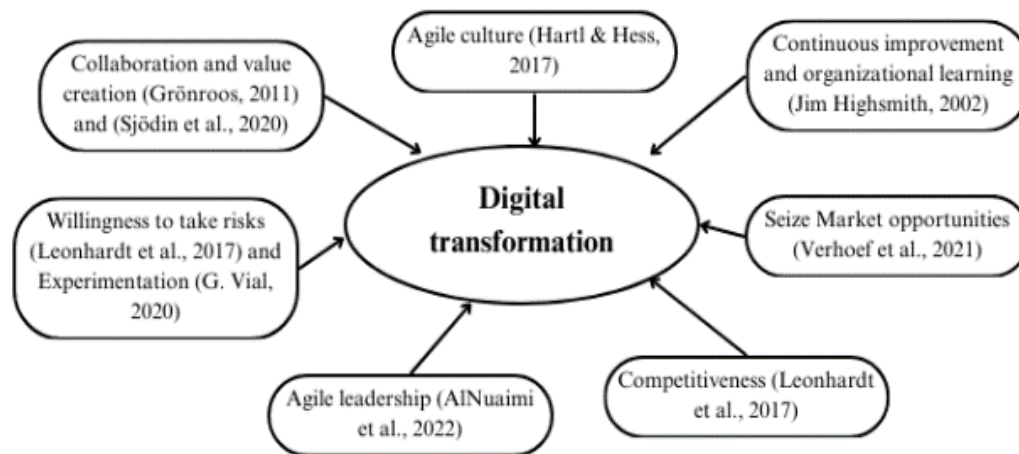


Figure 1. Agility components that influence digital transformation

3. Research Methodology

To explore our research question, we used semi-structured interviews to conduct an inductive qualitative research methodology. Digital transformation is a new and challenging phenomenon about which relatively little is known [11]. In addition, limited theoretical and empirical studies on agility and digital transformation in the Moroccan context indicate the exploratory nature of the present study. We aim to explore the views of a diverse group of experts involved in digital transformation and agility processes (Table 1). Mainly, experts in agility with several years of experience and certifications such as MBA, PMP, PSM, SAFe, ITIL, and PSPO, ...

Owing that expert interviews are a realistic technique to verify theoretical artifacts in real-world and organizational contexts [27]. Hence, the choice of this research design will enable us to gather sufficient data to broaden, clearly understand, and reduce the complexity related to the phenomenon.

Furthermore, qualitative research tends to focus more on ‘how’ and ‘why’ questions [28] that seek to understand the process through which a phenomenon emerges. In this study case, an exploratory study will enable us to gather valuable and relevant knowledge about how digital transformation evolves and how agility fits into this process.

Table 1. Background information about the study participant (N=10)

Informant title	Industry	Interview duration(hours and minutes)
Agility and Digital transformation consultant	Consulting and services	00: 45
Scrum Master/digital transformation and business analyst	Services	00:59
Scrum Master & agile coach	Independent	00:59
Scrum Master/Project Agile Manager	Digital transformation	01:20
Agile Project Manager	IT	01:08
Scrum Master	Banking and insurance	00:45
Agile et NLP coach	Independent	0:40
AgileProject Manager	Technology and service	01:00
Agile Coach	Independent	00:45
Agile Project Manager	Consulting	00:31

Data collection took place in November 2022. The interviews were arranged through the authors' professional networks. All but two of the 10 interviews were conducted via Google Meet or Zoom (two via telephone) and lasted around 30 to 60 minutes. A semi-structured interview guide with mostly open-ended questions was used. The guide included three sections a) Agility adoption and b) Agility's contribution to organizations' digital transformation, and c) the interviewee's perspectives on the significance of agility in digital transformation. All interviews were tape-recorded and verbatim transcribed manually. Finally, once saturation was achieved, we stored and analyzed the gathered data.

4. Findings

In this section, we present the key findings of our study, providing insights into the essential components of agility in the context of digital transformation.

We used the “Gioia approach” to help us comprehend these findings and ensure their credibility (Figure 2). We begin by examining the extent of agility adoption in the organizations under study, followed by a thorough examination of the verbatim statements shared by participants. These statements summarize their perspectives on agility components gathered from available literature, as well as their perceived contributions to the overall process of digital transformation. This section serves as a key connection between our study methods and the relevance of our results to both practitioners and researchers.

▪ Agility adoption

Agility helps businesses to be more proactive and adaptable, thereby enabling them to make informed choices and exceed consumer expectations. Meantime, participants stated that agility is mostly applied in project management, particularly in IT and industrial units. Agility, on the other hand, is problematic for human resources and finance owing to non-agile policies and procedures. As an agile project manager commented:

Not all entities are agile. Namely HR and finance departments, seem to be process-oriented. It is not their fault, it's due to regulations and legislation that make it challenging for these departments to become agile. They must be more versatile to ensure agility, but there are constraints. I would claim that there is no innovation in HR and administration. Mainly, the IT department is being reformed and made more agile, especially in Moroccan firms.

Other participants emphasized that agility is understood and seen differently among organizations. As a participant explained: ‘Each entity or firm's understanding of agility is different. Agility is a framework for some and a mindset for others. However, some guidelines and practices must be respected. Accordingly, agility can be applied as an approach in manufacturing, and as a mindset for management units. Other participants claimed that applying agility is defined by the customers' requirements and the nature of the project.

Unfortunately, agility implementation, particularly in Morocco is still limited in some sectors. As an agile coach claimed:

The agile degree of awareness and acquiescence varies significantly amongst industries. In the banking industry, we are beginning to witness what we term the digital factory or flat organizations that allow fluid collaboration and value chain creation. However, in industries such as insurance, telecommunications, automotive, and energy, we are still a long way from reaching the

above. We are still a long way off. They are in the middle of absorbing and comprehending agile.

NB: We addressed firms that are involved in digital transformation or support other firms in digital transformation. Its adoption was not an issue, although only one of the participating firms evaluated its digital maturity level, which was raised to 4 out of 5.

Agility's contribution to organizations' digital transformation

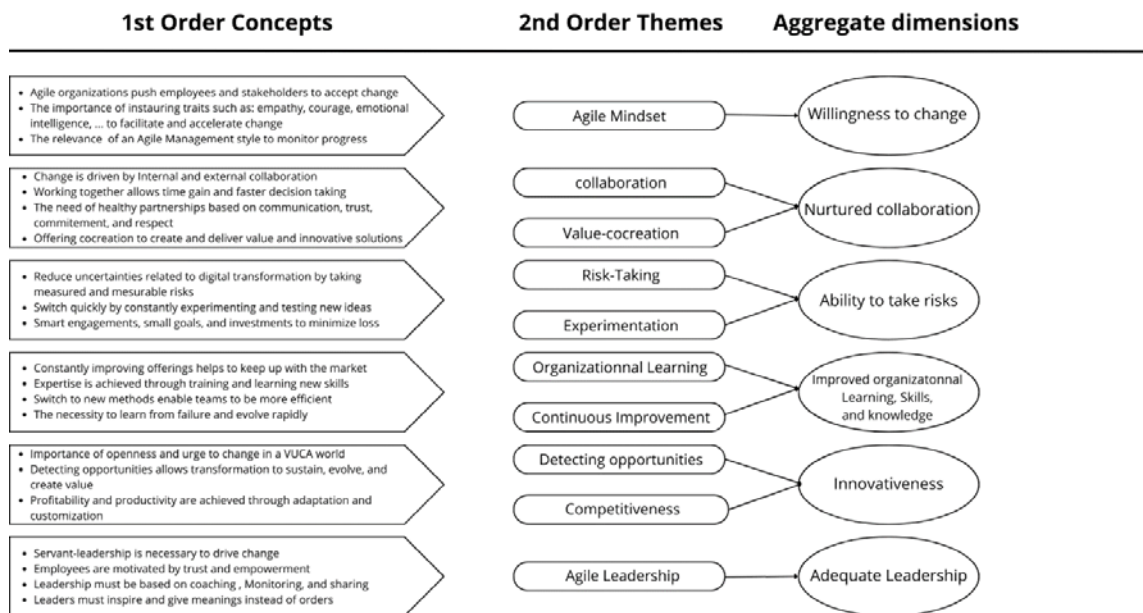


Figure 2. Data structure – The contribution of agility to digital transformation

a) Agile mindset and digital transformation

Participants described the agile mindset as having empathy, courage, a willingness to share and evolve, emotional intelligence, the ability to take risks, and collaboration, all of which are traits that may support and accelerate digital transformation. Others asserted that agile methodology and management style provide a cornerstone for efficient digital transformation implementation.

b) Promoting collaboration and value creation for digital transformation

Agile-enabled collaboration and digital transformation: Agility contributes to the creation of an environment in which both internal and external actors collaborate to drive change ahead. It ensures a healthy partnership based on communication, commitment, trust, and respect. This allows external parties to live up to digital and provides insight and transparency into the digital transformation project's development. In this regard, a scrum master stated:

We cannot function without collaboration. We cannot achieve our goals if there is no collaboration, common understanding, and synergy among the many stakeholders. Collaboration remains an important success factor in digital transformation.

Moreover, traditional project management tools depend on the project manager to do all tasks, leading to ineffectiveness, miscommunication, and time waste. However, with agility, each team member has a specific role: scrum master, developer, Po, etc., leading to significant timesaving and quick digital transformation project implementation through collaboration.

Agile-enabled value creation and digital transformation: ‘Value creation is the ultimate goal of digital transformation. Therefore, agility is the framework and method that allows digital transformation to achieve its goals and create value under the right condition’ as a participant stated.

This underlines the importance of agile methods and practices to create and deliver value through well-thought-out and innovative solutions.

- c) Promoting risk-taking and fostering experimentation for digital transformation

Risk-taking in agility and digital transformation: According to an agile coach: *'Agility provides the firm with a hunger for threat through all of its practices that contribute to the prevention of uncertainties. Agility is a driving force in digital transformation.* This underlines the importance of organizations taking risks to dive into digital transformation. Agility offers the ability to take measured and measurable risks, experiment, create scenarios, and backup plans to assist organizations in relieving pressure while confronting risks.

Experimentation and digital transformation as stated by the interviewee: *'We need experimentation in digital transformation to dive into uncertainty. Agility is the framework that will enable us to do so.* Since agility is built on a broad range of methods and practices, for example, the sprints used in scrum methodology allow organizations to experiment with new ideas, test them with stakeholders, and see if they work. If it does not, we can switch quickly, especially in the case of digital transformation, which is a long and engaging journey. A participant explained:

Test reviews and UATs (user acceptance tests) must be conducted at the end of each sprint of the digital transformation implementation to evaluate customer satisfaction. This helps them to trust the process and proceed with the digital transformation. In addition, to guarantee that the client is familiar with the digital solution, we use Hyper Care. It allows us to follow up with customers daily to provide them with the necessary information, documentation, and best practices until the solution is mastered.

- d) Organizational learning and continuous improvement for digital transformation

An agile project manager claimed: *'If we transform to produce one product that responds to a specific market in a specific period, and we don't attempt to improve it and progress via agility to keep up with the market. There is no digital transformation. As a result, continuous improvement is a digital transformation accelerator.* Furthermore, teams should seek continuous improvement by training, and learning new skills to evolve and become experts in their field, especially in fields undergoing innovation, such as software.

- e) The ability to detect opportunities and improve competitiveness contributes to digital transformation

Detecting opportunities for digital transformation: If the digital transformation process has already begun, the ability to recognize and address opportunities becomes critical. The key to making this transformation sustain, evolve, and create additional value is agility. A few participants claimed that agility only promotes openness, which stirred outrage. Detecting opportunities is common in all companies. Also, a participant stated that: *'What makes it possible to detect opportunities in Morocco is especially networking.'*

Agile competitiveness for digital transformation: Companies may have a solid marketing and sales strategy as well as cutting-edge technology. But, it is their agility that enables businesses to adapt and offer customized solutions to achieve profitability. This motivates stakeholders to continue on the digital transformation path. As a participant stated: *'Agility is still relatively new in Morocco, thus being agile benefits the organization.'*

f) Agile leadership for digital transformation agile CEOs spread agility throughout their organizations. They motivate employees by focusing on two key components: trust and empowerment. Leaders should delegate decision-making authority to their employees so that they can feel autonomous and committed to the process. As new generations are unable to deal with classic management styles, leaders exert control without truly limiting them. Therefore, the leader's function is based on mentoring, coaching, and sharing best practices. According to an interviewee:

Agile leadership can contribute to digital transformation by building communities in departments and sharing best practices within each perimeter. Then, leaders attempt to establish a consumer-producer culture in which employees consume and produce best practices, and processes that revamp the sense of sharing, promote knowledge management, and so on. These practices contribute to digital transformation and adaptability to changing circumstances.

▪ **The interviewee's perspectives on the significance of agility in digital transformation.**

The majority claimed that there is a strong link between digital transformation and agility. Nonetheless, each interviewee explained the connection uniquely. They identified agility as the framework required to successfully conduct digital transformation. Agility is the solution to achieve a sustainable, fast, and regular delivery channel, reduce time-to-market, make informed decisions, and understand the customer's real needs. Agility can also be viewed as a mindset, as an agile project manager addressed:

The adoption of a new mindset is at the heart of digital transformation. It turns out to be the basis of agility... Agility is the platform that facilitates transformation. If we seek to facilitate digital transformation via agility, they must go hand-in-hand.

An agile coach once stated: "Organizational, operational, human, and methodological foundations underpin digital transformation. Nothing beats agility for ensuring the last one ". Accordingly, agility is seen as a foundational component that promotes and accelerates digital transformation. It should be implemented in all entities, including management, human resources, and so on. Yet, there is no agreement on this issue; others argue that digital transformation may take place without agility. There are alternatives to agility depending on the firm's context or activity. As one interviewee noted:

We can adopt digital transformation without relying on agility, yet this is the current trend

Participants also stated that Moroccan firms are still lagging when it comes to implementing agility. They do not fully embrace agility; there are different levels of maturity depending on the context, the expenses involved, and the level of competition. Banking, software, and service firms, on the other hand, maintain the lead. According to an agile project manager, the future of digital transformation in Morocco is also promising:

Morocco will witness a massive wave of digital transformation over the next five years, thanks to the establishment of a new digital transformation ministry in Morocco. This will significantly improve the daily operations of both private and public organizations.

5. Discussion

This section serves a critical dual function in our study. First, it advances theoretical knowledge by analyzing the influence of agility in organizational digital transformation. We contribute to the academic body of knowledge by diving into the theoretical basis, pushing the boundaries of our field. Second, it addresses the practical space, providing useful managerial insights. Our findings bridge the gap between theory and reality as firms cope with the complexities of digital transformation. Managers and decision-makers may gain effective tactics, allowing them to confidently manage the shifting digital world.

5.1. Theoretical Contribution

According to the empirical findings, agility is both a mindset and a framework. The organization and the context determine the above. Moreover, agility does not always refer to a whole-body change. In practice, agility is used in project management, particularly in IT departments; although management departments continue to function traditionally. In other contexts, companies still shift between traditional and agile approaches based on the project and the client's needs.

Whereas, this article aims to understand how agility contributes to an organization's digital transformation. Our findings indicate the effectiveness of agility found in the literature in influencing digital transformation through its components, namely agile culture, collaboration and value-creation, experimentation, willingness to take risks, continuous improvement and organizational learning, seizing market opportunities, competitiveness, and agile leadership. Thus, this study proposes that agility can enhance digital transformation depending on its components (Figure 1).

Moreover, this research acknowledges that mindsets are the primary challenge that Moroccan organizations confront. Employees worry about the changes that technology may bring, especially when it comes to public organizations. This highlights the need to adopt an agile mindset to manage change and increase technology acceptance. Furthermore, businesses do not only rely on visionaries and servants. They must also work on developing both internal and external healthy partnerships, especially in a time of change. Collaboration is essential for implementing digital infrastructures and strategies.

Besides mindsets, training, and learning are also necessary for the digital transformation process. It entails the development of new skills and competencies to deal with technological advances. Moreover, agility offers a range of methods and practices (e.g. SCRUM). It enables businesses to continually experiment and test to switch rapidly when necessary, especially when it comes to the engaging and long journey of digital transformation. In addition to that, agility is usually considered a trend. Nonetheless, it has the potential to drive digital transformation sustainability, evolution, and added value.

Finally, digital transformation may occur without agility, and likewise. Although agility can indeed contribute to digital transformation, there are other options.

Ultimately, in Morocco, both agility and digital transformation are still in their early stages. There are advanced fields (e.g. banking) and others that are in the process but still have a long way to go. However, with the government's support, the future of digital transformation seems promising;

5.2. Managerial Contributions

According to research, agility is not applicable in all business units. This encourages scientists and managers to seek ways to bring agility to management units. Namely, through implementing processes, norms, and laws tailored to the needs of each unit.

Moreover, this study showed that not all businesses implement agility effectively. Some skip critical phases such as feedback. Managers, on the other hand, must acknowledge the importance of gathering stakeholder feedback in the agility and digital transformation processes. As they require collective intelligence to co-create value, and deal with uncertainty.

Furthermore, the study emphasized the need for change management in driving transformation and change. Thus, top executives and managers should adhere to the process by promoting trust and empowerment. The findings also highlighted the role of HR in succeeding in this process. They should provide the required coaching and training to help employees progress in their careers. They are also in charge of establishing a healthy work environment and the necessary motivations as well as warnings and sanctions if the staff does not comply with the change.

To summarize, managers should prioritize mindset growth above methods. People have been proven to determine a company's likelihood of success.

6. Conclusion and Future Research

This study entails some limitations that should be considered in future research. Firstly, this study does not delve deeper into the role of agility in digital transformation. Thus, longitudinal studies with a larger sample of practitioners and businesses from various fields are required. This reinforces the findings, provides better suggestions, and lowers the error margin. Secondly, this study might be undertaken by studying the role of agility in digital transformation through specific dimensions: organizational, operational, human, and methodological. Also, this study does not investigate the current stage of the firm's digital transformation. The findings related to the digital maturity level could have led to a research overturn.

Thirdly, the findings revealed that digital transformation and agility understanding and practice are context-dependent. Thus, future research should consider the specifics of each industry and context.

Furthermore, putting our managerial recommendations into practice might strengthen them. It will enable us to assess the usefulness of these suggestions, their potential to enhance digital transformation among firms, and the amount of value they will provide to practitioners. Also, the insights collected from the perspective of executives may be significant since they are at the core of the change decision.

To summarize, organizations should cope with the pace and pervasiveness of digital transformation. To face these technological changes they have to change their ways of doing. This article suggests that it is beneficial to use agility to support the digital transformation process. It describes and identifies the agility initiatives needed to remove the barriers to digital transformation. The findings supported the importance of agility in digital transformation. To this end, six elements were used. However, in the Moroccan context, the mindset has taken a more significant role.

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