



# Perspectives on the Sustainability and Future Trajectory of Agile

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**Abstract.** Agile has gained speed and penetrated into many and varying organizations today. In tune, the term Agile has become representing a widely appreciated mind-set, principles, practices and methods, for varying domains. Despite these benefits of agility, the Agile consultants may evangelize it with commercial concerns resulting in “selling agility” to organizations as an object in the form of packaged practices, which may lead to end of Agile. Also, there are views about/on the Agile Manifesto as it is a product of the past and mainly developer centric. Those concerns have led us to investigate whether Agile is sustainable enough to live for a long time, what the future of Agile look like in the coming years or whether there is any point in the Agile Manifesto to be altered. To find out answers to these questions, fourteen interviews from nine companies in three major industries in Turkey including TechFin (Technology-Finance), Aviation, and Telecommunication were included to collect data. It seems that Agile will be lasting for a long time as it provides many benefits to the organizations. On the way, it may evolve into many different versions shaped around customized needs and contexts of the organizations. Organizations will probably focus more on people related factors, integrating and balancing Agile with other best practices, being-changed communication needs after the pandemic, seeking solutions for the outside of the “initial Agile” zone and Agile mindset. Commonly, the participants expect to see a change in the software focus on the Agile Manifesto, as well as an addition of value perspective on it.

**Keywords:** Agile software development · ASD · Agility · Scrum · Kanban · Sustain · Prospective

## 1 Introduction

It is a fact that due to the evolutionary nature of software development, changing market needs and evolving technology [1], projects inevitably change in many aspects including requirements, circumstances, and stakeholders [2], which is especially required for

agility in the complex domains. Based on this natural need for agility, people have invented Agile approaches. Agile approaches have appeared to meet the need of faster time to market, shorter development cycles, lower development cost, and the ability to move and change quickly [3, 4]. Initially, software developers borrowed best practices from other disciplines, but now best practices of Agile Software Development (ASD) are gradually and increasingly being inspired by other disciplines [5]. In tune, Agile has gained speed and penetrated into many and varying organizations today [6]. Therefore, the term Agile has become representing a widely appreciated mindset, principles, practices, and methods, for varying domains [6].

Despite these benefits of agility, the Agile consultants may evangelize it with commercial concerns resulting in “selling agility” to organizations as an object in the form of packaged practices [7]. As many other Agile products, the original ideas of the Agile Manifesto, in particular, have already become more and more commercialized, sloganized and jingoist because of the misinterpretations caused by politics, imagination, and economic interests, as pointed out by some of the manifesto authors including Dave Thomas, R. C. Martin, and Andy Hunt [7, 8]. Consequently, Agile products are inevitably following the Gartner Hype Cycle [6, 7, 9] and Janes and Succi [9] claim that Agile has already reached the trough of disillusionment phase. What Denning [10] asserts is that as long as the market wants to sell “agility” like an object, the Agile movement will die. Even more, as stated by study [5, 11, 12], and [13], Agile is already dead. At best, it has some widespread and underlying assumptions [6, 14, 15] and prevalent misconceptions to clear up [18].

The Agile concept was popularized in the aftermath of the release of the Agile Manifesto [6]. As the most widely read statement of Agile values and principles [19], the manifesto is regarded a universal inscriptive source for Agile software development [20, 29] and as well as for other domains [20]. The manifesto sets out the philosophy of Agile that various Agile approaches ascribe [21]. Some people believe in the manifesto as if it is the “holy grail” and religious fervor for successful software development and they would never want to change it [7, 9, 19]. It leads to thinking that it has universal value and represents some ultimate recipe of software engineering [22]. However, there are views on the manifesto as it is a bit out of date and developer centric especially as Agile’s spread to the domains other than software development [19]. Moreover, some people see it as a product of a particular time and place [20]. Then, they want to update the manifesto to evolve it and to reflect the realities of today [19, 20].

As the usage area of Agile applications expanded, the meanings of the concept and the word Agile also have diversified. The Agile concept is vague, elusive, and hard to define and that results in many different interpretations of it and even more results in some variations of how Agile is implemented across organizations [6]. Today, Agile can represent a commercial product offered by the market, which is being criticized by some of the manifesto authors, or the manifesto itself proposing some particular principles and values or values, principles and practices beyond and independent of the manifesto, or, as expressed by study [7] directly Scrum framework. By implicitly including all these kinds of Agile perceptions, based on the aforementioned concerns on Agile and considering the growing importance of Agile in the organizations and the

manifesto's significant effects on the Agile movement, this study aims to answer the following research questions (RQ):

- RQ1: Is Agile sustainable enough to live for a long time or is it just a management fashion?
- RQ2: What agendas are waiting for organizations in the heading of Agile in the coming years? What does the future of Agile look like?
- RQ3: Is there any point in the Agile Manifesto that will or should be changed? What can any new versions of the manifesto in the future include?

For this paper, semi-structured interview method was used, because it allows flexibility to get more deep insights and obtain reliable and valid data at the same time. Fourteen interviews from nine companies in three major industries in Turkey including TechFin (Technology-Finance), Aviation, and Telecommunication were included to collect data. We used the term "Agile" directly in the interviews, implicitly referring the interviewee's own perceptions about Agile that can be either market, Scrum or the manifesto-oriented Agile or anything else. By doing so, we aimed to explore the perceptions of Agile by the practitioners in its broadest meanings and usages.

The rest of this paper is organized as follows: Sect. 2 presents the scopes of previous researches. Section 3 depicts the research method adopted. Section 4 delivers results and Sect. 5 evaluates them. Finally, Sect. 6 delivers conclusion, limitations, and future work.

## 2 Related Work

There are various studies on possible future scenarios of Agile and updating the manifesto. For instance, study [7] and [23] aim to identify the evolution of interpretations of the statements in the manifesto and future directions from the original contributors' point of view. The manifesto authors state no need for changing the wording of the manifesto except Arie van Bennekum who would like to change the wording of "software" with "solutions". The study shows that the authors of the manifesto do not find any imperfections in the manifesto, but instead seek a flaw in those who try to interpret and implement the manifesto. It also adds that the authors have stopped focusing on the future trends of the manifesto. Their study also points out that many people misinterpret the basic claim of the manifesto because of politics, imagination, and economic interest.

Study [9] focuses on the values presented in the Agile Manifesto as a means to clarify the origins and impact of Agile. It criticizes the manifesto in terms of the language used. It points out that the creators of the manifesto intended some specific terms such as process and documentation to refer to a specific context such as a large or bureaucratic process as opposed to simply a process. However, the study states this usage of the terms by the authors is not explicit and some terminology misconceptions are prone to emerge.

The manifesto also got updated by some people resulted in "yet another manifesto" but not in substituting the existing one. For instance, study [20] that draws on insights from Beck's talk [24, 25] comes with some update proposals to the manifesto. The study proposes these new values: "team vision and discipline over individuals and interactions", "validated learning over working software", "customer discovery over customer

collaboration”, and “initiating change over responding to change”. In the same vein, study [19] argues that the Agile Manifesto looks a bit out of date and developer-centric and whether it is time to revise the Agile Manifesto. The panelists in the paper mainly expressed that the manifesto will not likely be changed by its authors, by referring to the reference [7]. Meanwhile, it was stated that many people feel compelled to extend it to fit different contexts, without any major reworking of the content or structure. Also, it was added that the principles and values of the original Manifesto are “mostly” true, just software focused. Related to our subject, study [15] claims that some statements named as principles in the manifesto are not principles in definition rather they are assertions, practices or platitudes.

Study [18] provides some prominent issues in Agile™ that do not support and inhibit agility like regarding Agile as a “holy” product and having binary thinking, trade-offs, and determinism. The study asserts that these issues ultimately may lead to the end of Agile™. After discussing these misconception issues, a prediction is made about the likely future of Agile™ and rise of agility. Similarly, study [37] defines “Fake Agile” as an attempt not truly to embrace the principles and values of agile, and, as a consequence, not delivering the business benefits of pure agile. In their study, they deal with the causes and early symptoms that make a difference between true agile and “Fake Agile” by identifying some reasons for its emergence, presenting some implications of practicing it, and discussing how to mitigate it.

Alexander [26] claims that in Agile frameworks and methodologies, which are a kind of business process, what is missing is a set of human and interactive social skills that address how team members interact in working together to actually achieve effective goals. He argues that organizations that leverage the people side of Agile, focus on teams and teamwork, and move beyond the basic implementations of the Agile systems will be among the best organizations and define the next business epoch in the future.

Study [27] explores potential applications of Agile management methods in domains where they have not yet been tried and provides a trajectory of where Agile management methods can be explored in the future. They, like study [28], anticipate that the domains that require creative work, where Agile mainly is located, could open up further demands for Agile methods in diversified domains including engineering, science, education, audiovisual industries, and healthcare. Design thinking, lean start-ups, growth hacking, beyond budgeting, and such methods were counted as the impetus to make different domains for Agile. The study underlines the impact of digitization as a crucial future impact. Because Agile management methods are people-based, it is foreseen that they will be less affected by computerization. It was also noted that having people-centric management styles, leadership, looking more in-depth, skill sets of empathy and support, science and engineering will have more demands in the future.

By synthesizing findings from a wide range of academic and practitioner-oriented sources, Madsen [6], to a large extent, links the considerable popularity of Agile to an active supply-side made up of actors such as consultants, coaches, and trainers. When it comes to the future viability and trajectory of the Agile concept, the study states that there is much speculation and debate about whether Agile is the latest in a long line of managerial fads or it is approaching its end. On the other side, some optimistic views see it as a reflection of a more lasting organizational trend. In light of these conflicting

views on the future trajectory of the concept, the paper states that “the last word has probably not been said on this matter.”

The general feature of literature on the topic we are covering in our study is that the number of academic and empirical studies that predict the future of Agile in the field of software development is limited. In addition to this, the number of studies on possible updates to the manifesto is limited. Considering these, we aim to conduct an empirical study in our study to fill the gap.

### 3 Research Method

For this paper, the semi-structured interview method suits best since it is qualitative and exploratory. The questions asked during the interviews allowed exploring the RQs and the flow of the conversations and the order of questions were flexible to get more deep insights and obtain reliable and valid data at the same time.

Fourteen interviews from three major industries including TechFin (Technology-Finance), Aviation, and Telecommunication and Consultancy covering nine companies were included to collect data. We followed Lincoln and Guba’s [16] guidelines for “purposeful sampling” in choosing our information-rich participants allowing an in-depth study. All the participants were selected from those who are currently operating in the industry, experienced in Agile, and performing different roles such as experts, managers, consultants, and academicians. Five of the participants were from Telecommunication, four of them were from TechFin, three of them were from Aviation, and two of them were from consultancy. Three of the interviewees had also an academic background and they have published some academic researches about Agile. In the TechFin industry, different types of banking including regular banking, Islamic banking and banking for clearing, settlement and custody services were covered. In the Aviation industry, in addition to the flag-carrier company, a low-cost example was also covered. In the telecommunication industry, three major players of the Turkey industry were selected. The average years of experience of the participants regarding Agile are 5.8. Generally, the participants have experience of Scrum and Kanban, but some of them are using tailored or scaled frameworks like Spotify Model. The list of the interviewees and the general information about them are presented in Table 1.

**Table 1.** List of the interviewees

Interviewee ID	Sector	Role	Total agile experience year
P1	Consultancy	Consultant/Expert/Academician	5
P2	TechFin	CTO	1,5
P3	Telecommunication	Agile coach	5
P4	Telecommunication	Agile coach	4
P5	Aviation	Manager	4,5

*(continued)*

**Table 1.** (continued)

Interviewee ID	Sector	Role	Total agile experience year
P6	Aviation	Scrum Master/Senior Analyst	7
P7	TechFin	Expert/Academician	7
P8	Consultancy	IT & Project governance consultant/Agile coach/Founder	7
P9	TechFin	Software engineer	1,5
P10	TechFin	IT architect	6
P11	Aviation	Product owner	6
P12	Telecommunication	IT director	15
P13	Telecommunication	Manager	9
P14	Telecommunication	Manager/Academician	4

The interviews were conducted by the first author of this paper. The guiding questions asked to initiate the conversations are as follows; “How do you regard the sustainability of Agile?” (regarding RQ1), “When you consider the global, technological, organizational, and cultural perspectives, how do you see the future scenario of Agile?”, “Do you think values and principles of Agile will alter?” (regarding RQ2), “Are there any necessary new concepts and adjustments for the manifesto?” and “Which parts of the manifesto would you change?” (regarding RQ3).

Prior to the interviews, the research questions were reviewed with an expert for the reliability of the research, and the RQs and questions were shared with the participants for their initial investigation. At the beginning of the interviews, confirmations were received from the participants to ensure the questions were understood.

For the interviews, face-to-face communication was preferred. Because of the Covid-19 pandemic, the interviews were conducted via video communication tools. Only one interviewee preferred e-mailing. All interviews were conducted in Turkish and recorded with the consent of the interviewees. The interviews were carried out in a quiet place to improve the recording quality. The average duration of the interviews is 33 min. The records were transcribed by an external resource and translated into English by the same person. In the texts, participant and company names were expressed as codes, not in their real names. The translated texts were checked by the first author of this paper and shared with the interviewees to check against possible errors. Then, necessary corrections were made.

We began our analysis by reading the transcriptions and extracting statements relevant to RQ’s. These extracted statements were then grouped into related RQ(s). While doing so, we paid attention to engaging in constant comparison techniques [17] supporting us to discern the shared concepts. In this way, all transcript content was reviewed by the first and second authors to reach extracted data and a consensus between them. In doing so, line-by-line reading of the English text was done manually to identify the

relevant statements. The identified statements were agreed upon by the first and second authors in terms of the relevance to the RQs. These statements were then grouped into the RQs. Then, the results were used for discussions in this paper which consider the other studies' findings.

In this research, the questions were determined aligning with the key points we have encountered in the literature. Furthermore, the participants were all relevant individuals who have working experience with Agile. Hence, all these dynamics were provided to keep the validity high. To reduce possible biases, it is ensured that the three responsibilities namely interviewing (the first author), transcription (the external resource), and examining the texts (the first and second author) were shared by different people. To minimize the bias, all transcript content was reviewed by the first and second authors. Both transcription and examination results were reviewed by the researcher who conducted the interviews, who is the first author. In addition, the reviews of the interview contents by the interviewees also reduced possible errors.

## 4 Results

The following section delivers the results from the analysis carried out. Related participant codes are mostly attached next to each insight so that it would be helpful to see better which insights are common results of how many interviews.

### 4.1 Sustainability of Agile (RQ1)

As long as organizations continue to get benefits from Agile, they will continue to make investments in it [P3, P5, P6, P8]. It was mentioned that if teams believe it is beneficial, they already want to adopt Agile and support sustainability. Agile has varying advantages for organizations for the long term including making things easier in terms of working from home, competence development of people, and enabling autonomy for them [P6, P13]. [P7] expressed that being agile is a need for every organization and they will want to reach the point of being agile sooner or later by overcoming any obstacle they are facing. Meanwhile, he worries about the "selling Agile" that damages real agility and its sustainability. Pointing to Gartner's Hype Curve, he stated that even though there is a great appetite for Agile and the trend is upward nowadays, after an inappropriate Agile implementation, organizations' energy will be run out to establish the right agility.

Some other participants mainly stated that Agile will remain in the future, thanks to its inherent adaptability, constantly improvement approach, and open to change the culture [P2, P3, P4, P8, P9, P12, P13, P14]. It was also stated in the interviews that Agile is a journey, not an endpoint, so a/the change was inevitable in Agile as well. However, [P11], [P12] and [P14] expressed that the main aim, idea, values, and pillars behind Agile such as getting quick feedback would not fundamentally change in the short and medium period, however, according to [P14], there can be some radical changes about its implementation. He also mentioned that, if the philosophy behind Agile is not understood properly, people could not internalize it and the teams may give up following the rituals. It was also expressed by him that in order to maintain agility, if one way does not work, instead of losing hope totally, trying another way around is crucial by considering that

it takes time for teams, managers, and business to get used to the Agile way of working. [P3] mentioned that patience, investment, and having a team spirit are crucial for Agile's sustainability.

Internalizing the Agile values and principles is the main point for sustainability [P3, P7, P8], even though it is relatively hard to internalize them in organizations. [P7] added that because these aspects are abstract, the transformation of a mindset is the most difficult part of the work and hard to prove and show; then, consultants do not prefer such a transformation instead do prefer to transform only the concrete substances of the organizations. According to him, this trading mostly ends with an illusion of "doing", which takes years to realize and overcome this issue. It is also highlighted by some of the participants that the ownership of the leaders, coaches, and human resource departments is crucial for its sustainability. The participants stated that understanding the mindset, philosophy and principles, transforming the culture, improving not only projects but also organizations via retrospectives and supporting the teams with lessons learned help for the continuity of Agile, stated as: *"We regard Agile's philosophy as a mindset and it provides really good practices when we internalize this philosophy and focus on the right target with the right people"* [P1]. *"The issue of sustainability not being dependent on people also shows us that it should have a cultural infrastructure"* [P8].

According to [P9], doing the same work and being within the same team continuously can be boring, and interchanges within the teams and different topics of work can support sustainability.

## 5 Future of Agile (RQ2 and RQ3)

According to the participants, the Agile Manifesto, frameworks or their rituals may/should change as everything changes [P1, P3, P8, P10, P11, P14], in an experimental and scientific way [P14]. [P1], [P6], and [P7] stated that particular Agile practices, especially those ones coming with the predefined models or frameworks such as within Scrum, will change in the next term; *"Those ties [to the particular practices] will unwind a little bit because the biggest reason for failed projects is about not forming the right teams and not being able to define the right targets"* [P1]. As another instance, [P6] pointed out that in Scrum, there are some issues about sprints expecting a product increment at the end, with no exception. She proposed that there may be sprints for monitoring, observation, prototyping, etc. instead of for a releasable product. There are some other expectations about the Agile rituals by [P6] and [P13] to be more relaxed and adapted by the teams' contexts. In a similar vein, [P7] proposed to break rules of Scrum according to the specific needs, by considering "Shu-Ha-Ri" philosophy that suggests following the rules first, then breaking them and then becoming the rules themselves.

According to some opinions provided by the participants, there would be different frameworks tailored for each company. In addition, [P1], [P3], [P7], [P12], and [P13] expressed that changes of the general frameworks may/should come from the fields of practitioners as well: *"Scrum is changing and people who change the Scrum Guide are not solely the creators of it rather the whole community, thanks to the self-organization and open discussions inside the whole community"* [P1]. It was also stated that the Agile Manifesto is a starting point and defines the basics by leaving some rooms to



the environments to find out one's own particular way, and to share it with the open community. [P7] adds that every organization should go beyond what the "pre-defined Agile" proposes, by stating, "*My principles can be more. Maybe I understand Agile better now, because I am stepping on the hot stone. I am burning while working with agile at my company... Then, we, as the enthusiastic people, need to improve it as a community*".

[P7] also stated that the manifesto does not include a proper mindset and he proposed reaching a post-manifesto thought by transcending the manifesto and free the Agile mindset from being relied on solely the manifesto in this regard. [P1], on the other side, put forward that Agile [manifesto] principles and philosophy are a source and a very accurate compass for innovation and inspiration; everyone interprets them according to their own needs and mindset, by stating that, "*Not changing for 20 years of the manifesto should not end up with an excuse in terms of fitting the today's conditions, because it is still a guidance for organizations.*"

Agile can be used in various areas such as production, education, human resource management and in family matters [P1, P3, P10]. These domains can have their manifesto and principles [P1]. Besides, some interviewees highlighted that providing solutions for big projects and organizations and varying locations may be a hot topic in the future [P12]. [P8], [P10], and [P14] mentioned that traditional and hybrid approaches will be still on the agenda, especially for some certain project types. According to [P3], [P8], and [P9], the concept of DevOps and Lean-start-up will be more integrated with Agile.

Agile promotes close communication and working side by side. However, [P14] mentioned that after the pandemic, this case is not valid, and there should be some ways to work more efficiently from a distance in efficient communication manners. Therefore, such challenges are waiting for Agile in the short or medium term. "*This pandemic period came upon. I think a whole new situation has occurred with the combination of technology and ecology. Agile needs to adapt to this situation*" [P14]. Meanwhile, [P8] thinks that technology will make everyone more Agile when people feel that they can plan their work more dynamically and manage them with mobility.

[P1] mentioned that in the future, real leaders will play more important roles than before and it will be more significant to make the right decisions, to give the right directions, and to put a vision for the teams in order to simplify the complex world. It is also mentioned that crude management is not enough; systems, organizations, and teams will eliminate such leaders. Besides, employee performance, executive management resistance issues, and new organizational structures will be among other hot topics in the future [P2]. [P12] stated that even employees have started to demand from the organizations to work in Agile environments more and more rather than in the traditional ones.

Participants [P1, P4, P6, P9] highlighted that "working software" in the manifesto could be changed as "working solution" or something else to cover non-IT units and to spread Agile across the organizations. [P1] also stated that the value (outcome versus output) perspective could be as the 5<sup>th</sup> value, which means "do not focus on the number of outputs, rather focus on value" that is more important than the former one. Some other participants wanted to see more diligence in Agile regarding maturity [P1], working with other teams, and communication network aspects [P11]. [P7], [P8], [P9], [P12],

and [P14] also highlighted that some topics such as managing and sharing experience about the Agile in large-scale organizations, qualitative and quantitative measurement of Agile benefits, quality and human factors including human needs, personality traits and emotional intelligence, distributed Agile, project related concepts, balanced views on Agile, the mindset aspects, and managing technical depth in Agile will be on the future agenda of the organizations.

Another interesting point stated by [P13] is that artificial intelligence and robotic processes could become a topic in the medium and long term. In the team's effort estimations, after a learning time, the artificial intelligence code can provide an effort estimation to the works; *"I think that robotic jobs will increase in Agile teams, that is, robot guys in teams"* [INT-13].

It is also explored that in the next years, with the generation Z that will be more equalized and fed from more central streams and new ways of working, the effects of the cultural effects of localization may disappear [P7, P12]. In the future, generation Z may also influence the perceptions about the management and hierarchy, because they are coming from the open culture exposing a similar cultural background and they will not accept hierarchical structures easily. Especially young generations will change the current prevalent perceptions of hierarchy and leadership styles.

## 6 Discussion

From the results, we anticipate that agility and Agile that is the common representative of it today are an indispensable need for organizations. In particular, as long as organizations continue to benefit from Agile (there are indications in this study stating that this is possible), they will invest in Agile. Thanks to the instinct of constantly improving itself and its environment, with elements such as its inherent benefit-seeking mechanism inside addressing the resources to the most valuable goals, ensuring plans that are more likely to be realized, and creating a stronger and more sustainable unity that helps individuals to support each other with a team spirit, Agile supports many aspects of organizations. Therefore, we can conclude that as long as organizations exist, needs for agility and any form of agility including Agile will also be present.

In this research, many of the participants believe that Agile will remain in the future. However, Agile teams can have some challenges to sustain. The sustainability depends on patience, how much effort is put on agility or on some other "Agile products" and how much the Agile mindset is internalized. What we also want to draw attention to is that the organizations should find their own way according to their needs by understanding the difference between the absolute agility needs and what models, frameworks and similar artificial elements claiming to provide agility really provide.

As pointed out by some of our participants, agility should be regarded as a journey, not a definite end. Accordingly, our work, as some others do, draws attention to the trap of "selling Agile" as an object that can danger the sustainability of Agile. As stated by a minority of the interviewees and some of the literature included in this study, "selling Agile" as a commodity harms agility and inhibits organizations from "being agile". In line with this, study [18] and [37] put forward that with the industrialization effects driven by the Agile market, selling Agile™ products and "Fake Agile" to organizations

appears as a factor overshadowing the agile mindset leading to the properly understood and market-independent agility.

Accordingly, there is still a debate in the literature; some of the practitioners believe that Agile will last longer than the other management terms but some pessimists mention that Agile can be regarded as management fashion and could disappear in the future. Philippe Kruchten states that the Agile movement is in some ways a bit like a teenager and accepting few criticisms but “it will mature further, become more open to the outside world, more reflective and also therefore also more effective” [14]. In a similar vein, Madsen [6] notes that Agile can be considered a relatively young management concept. Study [6] mentions that it is a bit difficult to say anything about the future projection of Agile whether it will stay as a trend or go out of fashion. Some people indicate that Agile will be a more lasting organizational trend and several reports published in recent years support this view, however, some pessimists believed that Agile can be regarded as a short-term, transitional trend and we may be coming the end of the Agile [6].

Agile is a journey, not an endpoint, so the change is inevitable for it. This results in some minor changes [for now] according to what many of the participants stated. In the course of Agile, from some participants’ point of view, it seems that the focus on the people side and having a proper Agile mindset will be more important and the predefined practices will take relatively less place. Similarly, study [26] argues that after a while, Agile practices will be largely equalized for organizations, and organizations that make a difference will come to the fore with the people dimension. Many organizations today generally focus on the common frameworks such as Scrum and Kanban but in the future agenda, the ties of these frameworks will be weakened and there can be some new frameworks tailored to each organization depending on the organizational culture and needs.

It is clear that the values and principles of the manifesto are appreciated among the interviewees to guide the organizations in their journeys. The manifesto is seen by them as a compass to adjust the customized Agile applications, regardless of time. Meanwhile, the Agile Manifesto was designed about two decades ago, in the year 2001, and has aroused attention to Agile development practices. However, since then, it has stayed inert, even in the ever-changing world of today that renders changes inevitable for it. The Agile Manifesto is regarded as old and even limited to the certain biased point of view dominated by a group of 17 specific people consisting of all male persons (no women) and mostly consultants [19]. As mentioned in the manifesto, “at regular [or not regular] intervals, the team [or any people] [should] reflect/s on how to become more effective, then tunes and adjusts its behavior accordingly” to improve, let us say, the manifesto itself.

According to the results of the interviews, even if there will be such a change in the manifesto, it is expected that instead of waiting for others to do it, the practitioners and the whole community should do it. Indeed, such an initiation would not probably come from the original authors of the manifesto, as there is no intention to review it by its creators; they do not deem it is necessary to update it and even they have stopped focusing on the future trends of it [7]. It is clearly stated by the participants in our study that Agile is a common property of the whole community and the responsibility of improving it should belong to that community, which is stated by Ozkan [30] and Kruchten [22].

When we asked the interviewees, what would they like to change in the manifesto, the answers we received were mainly in line with what the study [7] suggested; replacing the concept of “solution” with “software”. In fact, the notion of “software” does not provide the full frame, even for the software development. The “solution” term in this regard can thus include software, hardware, service, or a combination of them. Applying Agile to a wide range such as marketing, human resource management, innovation, government, procurement, manufacturing, finance, etc. is a hot topic [6]. In a similar vein, study [31] and [32] state that Agile development of business, organization, and leadership has appeared on the strategic agenda of leadership teams in organizations. Hence, it is explored that “working software” term may be replaced with “working solution” in the Agile Manifesto because of the need to widen its application to the enterprise-wide-agility or so-called business agility. According to the interviewees, this playing on words will also open a door to the liberation of Agile from software development boundaries, or at least from software development jargon to consider it with a broader sense, and allow its application on other business areas. The view that every business area should have its own manifesto was also expressed, albeit weakly, by some of the participants. In addition, it was stated that the focus on value should be added to the manifesto. Also, one of the interviewees expressed that the understanding of Agile should be pursued to go beyond the manifesto.

Apart from what the participants suggested to change in the manifesto, there are also people like Beck in reference [24, 25] who suggests more radical changes. Although not included in our findings, with effects of the manifesto not defined precisely but with a high level of abstraction [9], there are unintended language implications and ambiguity in the statements in the manifesto; for instance, the term “process” in the manifesto refers to a large or bureaucratic process as opposed to simply a process [21]. Even though it is not implied by the authors, when it is misunderstood, the Agile world has led to a set of misconceptions such as it is forbidden to document or to plan within Agile [9]. Therefore, as a resolution of this issue, some updates to the manifesto may provide more correct perceptions especially on the new practitioners against any erroneous readings of it. One of the reasons why this issue was not mentioned in the interviews may be because of that the interviewees have relatively high Agile expertise, and this problem is more likely to be faced by the newcomers to Agile.

The Agile Manifesto principles are close enough to the SPI Manifesto [33], then it can be possible to enrich the Agile Manifesto with it that places people, business focus, and organizational change at the core of improvement practices [33]. Therefore, it seems that there are still some rooms for improvements in the structure and language adopted in the Agile Manifesto itself [21]. Consequently, it is apparent that updating the manifesto will be open to discuss in the future.

The interviewees seem to find solutions for some realities of their organizations regarding the issues that are mostly outside the comfort zone of “initial Agile”, such as leadership, scaling, distributed remote working, working with machines, balancing agility with quality, and reconciling Agile with “others”, even with the classical methods. For instance, Agile management models suggest working of team members in the same location with close and face-to-face communication [34]. Face-to-face communication is in the heart of Agile but due to the recent pandemic, this type of communication

has replaced with virtual meetings. Therefore, changing communication styles could affect the future agenda of Agile. Besides, some new technologies especially artificial intelligence, machine learning, and robotic process automation could affect the course of Agile teams. In the future, the Agile teams may consist of a combination of real people from varying generations and virtual team members such as robots or smart machines. Agile models are increasingly combined with other management models or ideas and there is a process of convergence between them [6]. For example, the concepts of Lean and Agile have been integrated and sometimes called “LeAgile” [35]. In terms of the quality, Annosi et al. [36] report how Agile and dealing with changes may pave the way for diminished quality, especially due to the time stress inherited in Agile, which will require to strike a balance between those and such factors. Therefore, Agile will be searching for a balance point between and in harmony with some “other” realities of the organizations.

## 7 Conclusion, Limitations and Further Research

The aim of this study is to explore the possible future of Agile, with a special focus on its sustainability. One of the main motivations to conduct this study is the lack of sufficient research on this topic. To achieve the objective, an exploratory and qualitative research design is used.

In a nut shell, as a result of the study, the following findings are observed. It is noted that there is no pattern found in a given industry. 1) Agile will remain in the future. 2) Agile teams should focus on long terms perspectives to sustain Agile including, internalized Agile mindset, people side of Agile, new communication manners, patience and tailored ways beyond the pre-defined and sold models, frameworks and similar artificial elements. 3) The practitioners and the whole community should embrace and shape the Agile movement. 4) Agile will change, in some minor or major ways. 5) Agile can be used in various areas. 6) The Agile Manifesto is still guiding practitioners yet needs some minor or major updates, at least to be applicable to a wide range business. 7) There is a need for more studies to bring solutions to outside comfort zone of the “initial Agile”. 8) It is needed to have a reconciliation of Agile with “others” in a balance. 9) Generation Z may influence the perceptions on Agile.

We conclude that agility and its popular form, Agile, are a need and as long as organizations can benefit from them to be agile. It seems that Agile will continue to live, with minor or major changes. However, this study underlines that confining agility within the boundaries of a manifesto or a framework designed by someone else is a serious problem for the future of Agile, which can lead to its death. Rather, organizations should focus more on the “soft” side of Agile and harmonizing Agile with others needs and facts of the organizations depending on their contexts.

This study has several contributions. It sheds light on the possible and prospective future scenarios of Agile, with a special focus on the manifesto. It hopefully gives ideas about the topic that may be of practical interest in applying or planning to apply Agile in organizations. Moreover, we hope that the study provides insights to researchers as a reflection on the field in terms of possible avenues for further studies.

Like any other study, this research has several limitations. It is limited to data from the Turkish software development industry. Thus, this research does not claim that its findings are universal, because the access to appropriate resources was limited to those participants that voluntarily attended interviews. Even so, regardless of the contextualized and localized lenses, it can provide global insights on Agile to a certain extent.

The outputs could also change because the characteristics could change from industry to industry or from one organization to another. Like any study including the perception-related aspects, we are unavoidably prone to stereotype the insights through individuals' findings. They are some impressions on single or limited opinions in the study. Considering this, to show the strength of the results and to see better which insights are common results of how many interviews, the related participant codes are largely attached next to each insight in the text. Moreover, as mentioned earlier, it is a common problem that the definitions and perceptions of agility and Agile change from person to person and it makes hard to reach a common definition of Agile within the participants.

This research presents opportunities for further researches. It might be worthwhile to consider using the same set of questions in different firm contexts with a quantitative approach. It can also be possible to provide a larger view with the impact of intercultural aspects of Agile. Effects of entering generation Z to the work-life can be analyzed more deeply. Moreover, there is limited research about the management fashion of adopting and “buying” Agile. Therefore, it could be important to understand the future of Agile.

Although these preliminary findings in our research simplify such a complex domain with some limitations, which calls for more validation, they provide researchers and practitioners with a good entry point to elaborate. The study can motivate academic researchers for further research on this practice-driven and initially-monopolized-by-practice concept, Agile, to discover any fine-tuning potential for its implementations and to enable it more effective and sustainable for the future.

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