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Agile Management in the Scalability of Software Startups: The Role of Organizational Culture

ABSTRACT

Software startups undergoing scalability face multiple cultural and structural challenges that can influence the effective implementation of agile approaches. This study aims to elucidate the interaction between organizational culture and agile management in these organizations, with a focus on the role of cultural factors in the success or failure of Agile. The present research was conducted using a qualitative and exploratory approach based on grounded theory. Data were collected through 16 semi-structured interviews with managers, founders, and Agile coaches in software startups, and data analysis was carried out through open, axial, and selective coding until theoretical saturation was reached. The findings indicated that concepts such as transparency, continuous learning, trust, self-organization, and team coordination emerge as facilitators of successful Agile implementation, whereas hierarchical control, resistance to change, and short-term pressures represent key obstacles in the path toward agile scalability. The analysis of the relationships among these categories led to the development of a paradigmatic model in which transparency and continuous learning play a causal role in strengthening agile performance, while control structures and time pressure act as inhibiting conditions. The results of the study indicate that the success of scaling Agile depends less on formal frameworks and more on the quality of organizational culture and the learning capacity of teams. Accordingly, enhancing transparency, documenting experiences, strengthening team trust, and reducing hierarchical barriers are among the most important actions that managers should consider to support agile transformation.

Keywords: Agile management, software startups, organizational culture

Introduction

Organizational agility has emerged as a defining capability in contemporary environments characterized by rapid technological change, digital disruption, and intensified global competition. As organizations increasingly confront volatile and uncertain conditions, agility is no longer viewed as a peripheral attribute but as a strategic imperative for sustaining competitiveness, innovating continuously, and navigating market complexity. Agile principles—originally developed for software development—have expanded into broader organizational and managerial domains, becoming a foundation for adaptive decision-making, iterative learning, and value co-creation [1]. Research across industries consistently demonstrates that agility enables organizations to respond effectively to market turbulence, accelerate value delivery, and foster cultures conducive to innovation and responsiveness [2]. Yet, despite widespread enthusiasm for Agile methodologies, the success of Agile transformation is far from uniform. Many organizations experience partial, stalled, or failed attempts at agility, suggesting that factors beyond processes and tools shape the outcomes of Agile initiatives.

One of the most critical determinants of Agile success is organizational culture, which directly influences how Agile values are interpreted, enacted, and sustained across teams and units. A growing body of research highlights that cultural dynamics

may either enhance or inhibit Agile implementation, especially in organizations with diverse teams, complex structures, or long-standing hierarchical traditions. Cultural barriers such as resistance to change, risk aversion, and command-and-control leadership styles impede the collaborative, transparent, and iterative nature of Agile work [3]. Multicultural teams often face additional challenges as differences in communication norms, power distance, and collective expectations shape how members perceive autonomy, feedback, and self-organization. These complexities are further amplified in software development environments where cross-functional collaboration is essential, making cultural alignment a major prerequisite for Agile maturity [4].

Recent empirical studies deepen this perspective by underscoring that organizational culture is a key mediating mechanism through which Agile practices generate their intended outcomes. For example, the MoCA (Model of Cultural Impact on Agile Methods) framework identifies specific cultural variables—such as openness, transparency, trust, experimentation, and shared decision-making—that significantly affect the effectiveness of Agile rituals, roles, and artifacts [5, 6]. The model highlights that Agile is not simply a methodology but a socio-cultural system that depends on collective norms and shared mental models. In the absence of supportive cultural values, Agile roles such as Scrum Master, Product Owner, or cross-functional team lead often become ceremonial rather than functional, undermining the capacity of teams to iterate, learn, and coordinate effectively.

Parallel research in organizational transformation and workforce agility reinforces this argument. As organizations pursue more dynamic and resilient workforce models, the role of HR systems in fostering adaptability, continuous learning, and innovation becomes more salient. Agile workforce strategies—rooted in empowerment, skill diversification, and responsive learning—enable employees to adjust to changing conditions while supporting broader organizational adaptability [7]. Job redesign, reskilling, and upskilling further contribute to building resilience and enhancing organizational agility, particularly when integrated into a supportive cultural environment [8]. Without these cultural and structural foundations, organizations risk superficial adoption of Agile frameworks that fail to embed agility into daily work or strategic decision-making.

The significance of culture in Agile transformation is particularly evident in scaled Agile environments, where organizations expand Agile beyond individual teams to entire departments or enterprises. Scaling frameworks such as SAFe, LeSS, or Nexus introduce organizational layers that require both structural coordination and strong cultural alignment. Emerging research in systems engineering shows that scaling Agile requires balancing discipline and flexibility, especially in settings where high-stakes technical decisions intersect with cross-team coordination [9]. In these contexts, excessive hierarchical control can slow decision-making and inhibit innovation, while insufficient governance can lead to fragmentation or inconsistency in implementation. Thus, scaling Agile is fundamentally a cultural endeavor, requiring a deliberate shift toward decentralized decision-making, psychological safety, and empowered team structures.

The digital transformation literature also underscores the role of culture as a central factor in achieving agility. Organizations undergoing digital transformation must foster a culture that supports experimentation, rapid feedback cycles, and cross-functional collaboration. Several studies suggest that digital transformation and organizational agility are mutually reinforcing: digital capabilities enhance agility while agile culture accelerates digital adoption [10]. In healthcare systems, for example, dynamic managerial capabilities integrated with cultural agility enable organizations to improve digital readiness and strategic responsiveness [11]. Similar patterns emerge across various industries, indicating that cultural flexibility and managerial adaptability are critical enablers of agile performance.

Complementing these findings, big data analytics has been identified as another crucial driver of organizational agility, particularly through its influence on managerial decision-making and strategic responsiveness. When supported by agile cultural practices, data-driven leadership enhances the organization's ability to perceive changes, assess risks, and iterate rapidly [12]. In this context, agility becomes both an outcome and a capability: the organization gains the ability to adapt while strengthening its long-term capacity for continuous transformation. Yet again, cultural alignment is essential to ensure that insights are shared openly, decisions are collaborative, and experimentation is encouraged rather than penalized.

Research within public infrastructure and utility sectors similarly identifies culture as a critical variable influencing agility. For example, studies on organizational agility in water and wastewater companies show that cultural characteristics such as communication openness, trust, and shared goals are foundational to developing agile capabilities in complex and bureaucratic environments [13]. These findings illustrate that agility is not exclusive to digital or high-tech firms; rather, cultural readiness is a universal driver of agile transformation across diverse organizational settings.

The literature on organizational virtuousness provides yet another lens through which to understand the cultural foundations of agility. Characteristics such as resilience, collectivism, and positive relational climate significantly enhance employees' subjective well-being and contribute to agile behavior at the individual and team levels [14]. When employees feel psychologically safe and supported, they are more likely to engage in proactive problem-solving, rapid adaptation, and collaborative learning—behaviors central to Agile methods. These insights highlight the reciprocal relationship between employee well-being, cultural attributes, and organizational agility.

At the macro level, digital transformation lifecycle research identifies culture as a central factor shaping the success of Agile digital strategies. Systematic reviews reveal that digital transformation initiatives require iterative structures, cross-functional collaboration, and data-centric decision processes—all of which depend on open, learning-oriented, and inclusive cultural values [15]. Without cultural support, digital transformation becomes fragmented or symbolic, weakening its contribution to organizational agility.

Yet despite the extensive literature emphasizing the cultural underpinnings of Agile, significant gaps remain. First, there is limited empirical research that explores how cultural values concretely interact with Agile practices within fast-growing software startups undergoing scaling. As software startups transition from small teams to large multi-team systems, cultural heterogeneity, competing priorities, and increased structural complexity intensify the challenges of Agile implementation. These firms encounter tensions between speed and learning, innovation and control, autonomy and coordination—tensions that require sophisticated cultural and managerial responses. Second, relatively few studies use grounded theoretical approaches to uncover the deep cultural mechanisms shaping Agile outcomes, especially from the lived experiences of Agile practitioners, founders, product managers, and technical leaders. Much of the existing literature is conceptual or model-based and lacks fine-grained empirical insights into how real organizations negotiate cultural enablers and barriers.

Furthermore, while the MoCA model [5, 6], cultural challenge surveys [16], and Agile-focused frameworks [1, 2] offer valuable theoretical foundations, they do not specifically address the scaling context of software startups, where speed, limited resources, complex team structures, and evolving organizational identities create unique cultural dynamics. Likewise, research on multicultural Agile teams suggests that diversity brings both potential and challenges, but more empirical evidence is needed to understand how multicultural dynamics influence scaling decisions and Agile maturity [4].

Studies in job redesign, workforce agility, resilience, and managerial capabilities provide further insights into how organizations foster adaptability [7, 8, 11, 14]. However, these studies do not sufficiently examine how cultural enablers and constraints emerge, evolve, and interact during the scaling of Agile practices.

In sum, although existing research acknowledges the central role of culture in Agile transformation, empirical studies capturing the interaction between cultural values, scaling complexity, and Agile implementation from a grounded theoretical perspective remain scarce. This gap is particularly relevant for software startups in scale-up stages, where Agile success depends on balancing learning-oriented values with the pressures of rapid growth and strategic expansion.

Therefore, the aim of the present study is to develop a grounded theory explaining how organizational culture influences the success or failure of Agile implementation in scaling software startups.

Methodology

This research was designed with a qualitative and exploratory approach and aims to examine the interaction between organizational culture and agile management in software startups undergoing scalability. Given the complexity and dynamic nature of startup environments, qualitative data provide the possibility for a deeper understanding of the real experiences of organizational actors.

To systematically analyze these data and derive an experience-based theory, grounded theory was employed, allowing researchers to extract concepts and the relationships among them directly from empirical data rather than relying solely on prior assumptions.

The research design is based on both classical and constructivist grounded theory, enabling the identification of complex interactions between organizational culture and agility in startup environments. This approach allows for process-based and structural analysis of data and contributes to the development of a conceptual model reflecting the reciprocal influence of organizational values, behaviors, and structures on the implementation of Agile (Strauss & Corbin, 1998). In addition, the research design facilitates the identification of cultural and structural facilitators and constraints in scalability, which is essential for constructing practical and theoretical managerial frameworks.

The target population included software startups that had experienced at least one stage of growth and scalability and used agile methods such as Scrum, Kanban, or SAFe. Participants included startup founders, technical managers, product managers, and Scrum Masters or Agile coaches.

To ensure the meaningfulness and diversity of the data, purposive sampling was used, followed by snowball sampling to identify new participants and expand the range of experiences. The number of interviewees was set between 12 and 18, and data collection continued until theoretical saturation was achieved. In this study, after conducting 16 analytical interviews, it was observed that most themes and core concepts were repeatedly appearing, and the emergence of new codes and concepts had significantly decreased. Therefore, the data were able to fully represent the cultural dimensions and scalability challenges of Agile in software startups, and theoretical saturation was achieved. Sampling analysis also considered the representation of diverse experiences across different organizational levels so that the perspectives of founders, managers, and Scrum Masters were balanced within the data to ensure that the final framework would be comprehensive and generalizable to similar environments.

Data were collected through in-depth semi-structured interviews to capture complex experiences and reflect cultural values and beliefs. The interview questions were designed to explore participants' experiences related to organizational culture, Agile implementation, growth challenges, and the interaction between these two domains. Sample questions included:

1. How do you define the organizational culture of your startup?
2. What values are emphasized in your organization (e.g., transparency, learning, innovation, control)?
3. How have Agile methods been implemented in your teams?
4. What challenges have you experienced in implementing agile methods during rapid growth?
5. How has organizational culture contributed to the success or failure of Agile implementation?
6. What strategies do you suggest for aligning organizational culture with Agile?

In addition to interviews, internal organizational documents such as charters, policies, and strategic documentation were reviewed to assess convergence between stated perceptions and actual organizational practices and to enhance data triangulation (Flick, 2018).

Interviews were conducted both in person and online (considering participants' circumstances and confidentiality), and each interview lasted between 45 and 70 minutes. All interviews were digitally recorded with participants' written consent and then transcribed verbatim for analysis.

Data analysis was conducted simultaneously with data collection so that subsequent interview questions could be adjusted based on initial findings, and theoretical sampling could be used to focus on newly identified dimensions (Corbin & Strauss, 2015). Data analysis followed the three stages of grounded theory coding:

1. **Open Coding:** Interview transcripts were divided into meaningful units and labeled to extract initial concepts. This stage involved content analysis, identifying behavioral patterns, and categorizing concepts related to culture and Agile.
2. **Axial Coding:** Relationships among the codes were identified, and core categories were formed. For example, the code "trust" could belong to the category of "cultural facilitating values," while the code "hierarchical control" might belong to the category of "cultural constraints."
3. **Selective Coding:** Based on core categories and major concepts, the final conceptual framework was developed to explain the interaction between organizational culture and agility in startup scalability.

This reflective and analytical process helped identify complex organizational interactions and clarify the implicit causal relationships demonstrating how organizational culture affects the success or failure of Agile implementation.

To enhance validity and reliability, member checking was conducted first, whereby preliminary findings were sent to several interviewees to verify their accuracy, and their valuable feedback was incorporated. Additionally, data triangulation was applied by combining interview data with organizational documents and observations of actual team performance to ensure alignment between findings and organizational reality. For improved analytical rigor, the findings were also presented to collaborating researchers and underwent peer debriefing for scientific critique and refinement of interpretations. Finally, all research stages—from data collection to analysis and theory construction—were thoroughly documented to establish an audit trail, enhancing research transparency and enabling replication by other researchers.

Findings and Results

In this section, the findings of the study are presented based on the qualitative analysis of interviews conducted with 16 key members of software startups undergoing scalability. The main objective of this study was to identify the role of organizational culture in the success or challenges of implementing agile methods in the scaling process of startups.

Table 1 presents the demographic characteristics of the 16 interviewees in the current research and includes essential information such as age, position, work experience, team or organizational unit, startup type, and interview focus. This table provides a comprehensive view of the diversity of the sample and the organizational roles examined in the qualitative analysis.

Table 1

Demographic Characteristics of Interviewees

Interview No.	Age	Position	Work Experience	Team/Unit	Startup Type	Interview Focus
1	32	Product Owner	8 years of experience in product development and feature management	Product	Project management SaaS	Experience of Agile implementation in the product team and organizational culture
2	33	QA Lead / Test Manager	10 years of experience in QA and software testing	QA	Project management SaaS	Agile implementation in QA, product quality, team interaction
3	30	Senior Developer	7 years of full-stack development experience	Development	Financial SaaS	Agile development experience, interaction with QA and product
4	29	Scrum Master	5 years of Scrum management experience	Development	HR management SaaS	Role of Scrum Master, team coordination, Agile challenges
5	35	CTO	12 years of experience in technology and team management	Technology	Data analytics SaaS	Technology culture, innovation, and Agile in larger teams
6	34	UX/UI Designer	6 years of experience in UI design	Design	Project management SaaS	Design interaction with Agile and team culture
7	31	Backend Developer	5 years of backend development experience	Development	Project management SaaS	Technical challenges and Agile coordination between teams
8	36	Product Manager	9 years of product management experience	Product	HR SaaS	Product strategy, team culture, and the role of Agile
9	32	QA Tester	6 years of QA experience	QA	Data analytics SaaS	Agile testing experience, team interaction, tools
10	45	COO / Operations Manager	20 years of operations management experience	Operations	HR and financial SaaS	Organizational agility, unit coordination, Agile scalability
11	37	DevOps Engineer	10 years of DevOps and CI/CD experience	Development / Operations	Financial SaaS	Agile implementation in DevOps and release automation
12	34	Data Analyst	7 years of data analysis experience	Data	Project management SaaS	Interaction of the data team with Agile and organizational culture
13	38	Team Lead	12 years of development and team management experience	Development	HR management SaaS	Team coordination, Agile processes, operational challenges
14	33	QA Lead / Test Manager	10 years of QA experience	QA	Project management SaaS	Product quality and the role of culture in Agile
15	45	COO / Operations Manager	20 years of operations management experience	Operations	HR and financial SaaS	Organizational agility and coordination among units
16	38	Customer Success & Operations Manager	12 years of support and operations experience	Support / Internal Sales	HR and financial SaaS	Cultural heterogeneity, underrepresented teams, operational challenges

This table shows that the samples sufficiently cover the diversity required for in-depth analysis and identification of cultural themes and dimensions within scalable startups, allowing for the extraction of core concepts, cultural categories, and the conceptual framework in the findings section.

In the following, the findings are presented first through the interview coding table and then through thematic analysis and the related conceptual framework. This analysis clarifies causal relationships between organizational culture, team agility, and scalability challenges and forms the basis for the study’s discussion and conclusion.

In this stage, all 16 interviews conducted with key members of software startups were examined. The objective of this stage was to extract initial concepts and identify meaningful units related to organizational culture and Agile implementation in the scalability of startups. For data extraction, two main approaches exist:

1. **Micro-level or word-by-word analysis:** In this method, the data are examined word by word, and the meanings embedded in each word or group of words are coded. Although this method is precise, it has two major drawbacks: first, it is extremely time-consuming, and second, it may create ambiguity. Moreover, breaking the data into very small units can reduce the coherence of the analysis and shift the researcher’s focus away from key insights.
2. **Key-point coding:** This method, proposed by Glaser, identifies and codes important points related to the research question rather than coding each individual word. This method preserves analytical coherence while maintaining focus on key and practical concepts.

In this study, the key-point coding method was employed. Sixteen interviews were conducted with experts in the field of software startups, and all interview transcripts were prepared for analysis. After each interview, the researcher extracted the textual data and performed open coding based on participants’ statements. In this stage, the data were read line by line, and meaningful units—including sentences or short segments—were identified, and initial labels (open codes) were assigned to them. The open codes consisted of the exact words and expressions used by participants to describe their experiences, challenges, and organizational values.

Table 2
Open Coding of Interviews

Interview No.	Role	Meaning Unit (Text)	Open Code
1	Product Owner	Daily meetings and stand-ups ensure that everyone is aware of the goals and can provide rapid feedback	Transparency
		Managerial pressure for fast delivery prevents opportunities to learn from mistakes	Short-term pressure
		Our team tries to document past experiences and learn from them	Continuous learning
2	QA Lead	Some developers are still unfamiliar with the Agile mindset and show resistance	Resistance to change
		Using test-management tools and dashboards has increased transparency in QA progress	Transparency
3	Senior Developer	When teams operate independently, trust between members and managers increases	Trust
		Sometimes managerial decisions are quick and create pressure on the development team	Short-term pressure
		Continuous feedback from the Product Owner helps the team adjust faster	Transparency
4	Scrum Master	Some technical decisions require hierarchical approval, which slows down Agile	Hierarchical control
		Teams can be self-organizing, but some managers still have a traditional mindset	Resistance to change
5	CTO	Retrospectives turn mistakes into learning opportunities	Continuous learning
		Close collaboration between development and QA increases transparency and trust	Trust
		Teams must make technical decisions quickly, but some hierarchical structures slow them down	Hierarchical control
6	UX/UI Designer	Architecture and design review meetings create cross-team learning	Continuous learning
		Pressure for rapid delivery during growth reduces attention to innovation	Short-term pressure
		User-centered design requires close collaboration with the product team	Transparency
7	Backend Developer	Some developers still do not understand the importance of UX	Resistance to change
		Design critique sessions improve experiences	Continuous learning
8	Product Manager	Team self-organization enhances speed and quality	Trust
		Some managers make restrictive decisions instead of supporting teams	Hierarchical control
		Pressure for fast releases reduces testing and quality	Short-term pressure
8	Product Manager	Continuous communication with development and QA increases transparency	Transparency
		When a learning culture is strengthened, teams correct mistakes quickly	Continuous learning

		Resistance from some members toward Agile feedback creates challenges	Resistance to change
9	Scrum Master	Retrospectives help teams learn from mistakes and pursue continuous improvement Some managers still maintain traditional control and restrict team decisions	Continuous learning Hierarchical control
10	QA Lead	Pressure for rapid delivery sometimes causes the value of learning to be ignored Using dashboards and real-time reports increases transparency between QA and development Some teams resist performing tests on time	Short-term pressure Transparency Resistance to change
11	Backend Developer	Teams learn from past mistakes and improve processes Some technical decisions still require senior manager approval, slowing down the team	Continuous learning Hierarchical control
12	Product Manager	Code-review sessions foster team learning and improve quality Pressure for rapid delivery sometimes reduces focus on innovation Continuous collaboration with development and UX teams increases transparency in decision-making Some senior members still have a traditional mindset and resist	Continuous learning Short-term pressure Transparency Resistance to change
13	CTO	Learning from customer feedback and mistakes helps improve the product Teams should be able to make their own technical decisions, but hierarchical structure sometimes blocks them	Continuous learning Hierarchical control
14	UX Designer	Documenting experiences and feedback helps teams achieve continuous learning Pressure for rapid delivery reduces attention to innovation and creativity Joint design sessions create transparency and coordination with the product team Some developers still do not accept the importance of UX	Continuous learning Short-term pressure Transparency Resistance to change
15	Product Owner	Continuous design reviews promote learning and process improvement Daily meetings and stand-ups create transparency in goals and team progress Some managers still restrict team decisions and block self-organization	Continuous learning Transparency Hierarchical control
16	Scrum Master	Pressure for rapid delivery sometimes reduces focus on quality and learning Retrospectives and ongoing feedback support continuous learning and team improvement Some senior members are still uncomfortable with Agile methods and resist	Short-term pressure Continuous learning Resistance to change
		Continuous communication between development and QA increases transparency	Transparency

After key-point coding, the codes with thematic similarity were grouped, and each group was defined as a main category. These categories provided the foundation for axial coding and clarified the relationships among the codes. Accordingly, the initial analysis led to the extraction of themes related to cultural facilitating values, cultural constraints, and challenges of Agile scalability, forming the basis for the next stage of analysis and conceptual framework design.

Table 3

Categorization of Open Codes Based on Research Questions

Research Question	Interview Text (Key Points)	Initial Codes
Q1: How do you define your startup's organizational culture?	Daily meetings and stand-ups help ensure that everyone is aware of goals and provides rapid feedback	Transparency
	Our team tries to document past experiences and learn from them	Continuous learning
	Close collaboration between development and QA has created transparency and trust	Trust, Transparency
Q2: Which values are emphasized in your organization (e.g., transparency, learning, innovation, control)?	Continuous feedback from the Product Owner helps the team adjust faster	Transparency, Continuous learning
	Some managers still have a traditional mindset and restrict team decisions	Hierarchical control, Resistance to change
	Team self-organization contributes to speed and quality	Trust, Self-organization
Q3: How are Agile methods implemented in your teams?	Retrospectives turn mistakes into learning opportunities	Continuous learning, Continuous improvement
	Design Critique sessions improve experiences	Continuous learning, Process improvement
Q4: What challenges have you experienced in implementing Agile during rapid growth?	Managerial pressure for fast delivery prevents opportunities to learn from mistakes	Short-term pressure, Speed-learning conflict
	Some technical decisions require hierarchical approval, slowing down Agile	Hierarchical control
	Resistance from some members toward Agile feedback creates challenges	Resistance to change
Q5: How has organizational culture contributed to the success or failure of Agile implementation?	When a learning culture is reinforced, teams correct mistakes quickly	Continuous learning, Error correction

Q6: What strategies do you propose to align organizational culture with Agile?	Teams learn from past mistakes and improve processes	Continuous learning, Continuous improvement
	Some managers still maintain traditional control and restrict team decisions	Hierarchical control, Limitation of self-organization
	Documenting experiences and feedback supports continuous learning	Continuous learning, Experience documentation
	Continuous communication between development and QA increases transparency	Transparency, Team coordination
	Daily meetings and stand-ups create transparency in goals and team progress	Transparency, Coordination improvement

In grounded theory, causal conditions refer to the factors that directly trigger the phenomenon under study—in this case, Agile implementation and the influence of organizational culture on the scalability of startups. Data analysis reveals that these conditions can be grouped into six main subcategories: transparency, continuous learning, trust, hierarchical control, resistance to change, and short-term pressure.

Transparency was identified as one of the most critical causal factors, contributing to coordination, participatory decision-making, and increased team responsiveness. Interview data show that daily meetings, stand-ups, and project-management tools play a key role in communicating goals, work progress, and feedback flow. Transparency not only improves communication between teams and managers but also creates an environment where team members can quickly implement necessary adjustments and reduce decision-making risks. From a theoretical perspective, this finding aligns with prior studies in agile management and learning organizations, which emphasize transparency as a prerequisite for trust and self-organization within teams (Schein, 2010; Denning, 2018).

Continuous learning is another causal condition with direct effects on teams’ capability to cope with rapid-growth challenges. Retrospectives, feedback sessions, and documentation of experiences help transform mistakes into learning opportunities and improve internal processes. This category demonstrates that in scaling software organizations, the capacity for continuous learning not only enhances team performance but also contributes to organizational flexibility and innovation. The findings align with knowledge management and learning organization theories, emphasizing that continuous learning within a supportive culture enhances Agile implementation (Nonaka & Takeuchi, 1995).

Trust emerged as a causal variable and a prerequisite for effective teamwork and self-organization. The data show that when teams have autonomy and open communication, trust strengthens, leading to effective collaboration, reduced conflict, and improved decision-making quality. These findings are consistent with organizational psychology research, which views trust as essential for active participation in agile processes and self-organizing teamwork.

Hierarchical control is one of the limiting causal conditions that negatively affects Agile implementation. Interviewees emphasized that certain technical and managerial decisions require hierarchical approval, slowing team decision-making. This condition acts as a restraining factor, indicating that organizational agility requires mindset shifts and reduced hierarchical barriers. Data analysis shows a direct relationship between this category and resistance to change and short-term pressure, positioning it as a key causal constraint reducing Agile effectiveness.

Resistance to change primarily stems from senior team members or traditional managers who have not fully internalized Agile values. Even with adequate processes and tools, conservative attitudes or unwillingness to embrace self-organization hinder effective Agile use. This indicates that organizational culture change and continuous education are essential to reducing resistance and facilitating Agile adoption.

Short-term pressure, driven by the urgency to deliver products quickly, has a dual impact. On one hand, it can increase motivation and focus; on the other hand, it reduces opportunities for learning and innovation and may affect decision quality. This category is a central causal factor in creating conflict between Agile values and organizational constraints. The analysis suggests that managing this pressure requires balanced processes and support for continuous learning.

Overall, the analysis of causal conditions shows that the interaction of transparency, continuous learning, and trust—acting as facilitating factors—creates the foundation for successful Agile implementation, whereas hierarchical control, resistance to change, and short-term pressure function as constraining factors. The data suggest that a supportive organizational culture that reinforces learning and trust is essential for achieving agility in scaling startups.

Table 4

Causal Categories

Subcategory	Sample Concepts Extracted from Interviews
Transparency	<ul style="list-style-type: none"> - Daily meetings and stand-ups ensure awareness of goals and rapid feedback. - Continuous communication with development and QA increases transparency.
Continuous Learning	<ul style="list-style-type: none"> - Teams attempt to document past experiences and learn from them. - Retrospectives turn mistakes into learning opportunities.
Trust	<ul style="list-style-type: none"> - Team self-organization enhances speed and quality. - Close collaboration between development and QA increases transparency and trust.
Hierarchical Control	<ul style="list-style-type: none"> - Some technical decisions require senior manager approval, slowing Agile. - Some managers still maintain traditional control and restrict team decisions.
Resistance to Change	<ul style="list-style-type: none"> - Some senior team members with traditional mindsets resist. - Some developers still do not understand the importance of UX.
Short-term Pressure	<ul style="list-style-type: none"> - Managerial pressure for rapid delivery reduces learning opportunities. - Pressure for fast product release decreases attention to innovation.

Contextual conditions in this study refer to the set of characteristics and environments within which Agile methods are implemented and cultural values emerge in scaling software startups. Data analysis showed that these contextual conditions play a key role in facilitating or constraining the effectiveness of Agile and, in fact, provide the operational ground for organizational culture and organizational agility. Development teams act as the core of Agile process implementation. Interview data indicated that coordination, transparency, and continuous feedback in these teams lead to increased decision-making speed, reduced errors, and improved product quality. However, hierarchical structures and centralized decision-making in some cases slow processes and limit team autonomy. Therefore, development teams are directly influenced both by cultural facilitating values (such as continuous learning and trust) and by cultural constraints (such as hierarchical control and resistance to change).

Quality assurance (QA) teams play an intermediary role between development and product. Process transparency and access to real-time dashboards, especially at scale, have facilitated communication and coordination across different units. However, resistance from some members to adopting Agile practices, particularly in testing and rapid feedback, creates an intervening challenge. This finding indicates that successful QA experience requires cultural convergence and the creation of tool-based infrastructures. UX/UI design and experience teams play a vital role in aligning the product with end-user needs. The data showed that close collaboration with product and development teams, Design Critique sessions, and continuous design reviews lead to transparency, continuous learning, and improved product quality. However, acceptance of UX importance by senior developers and cultural resistance can limit Agile implementation in this area. Therefore, the presence of a learning culture and reciprocal communication between teams is a necessary condition for Agile success in the design domain.

Contextual conditions become more complex in growing or scale-up organizations. The increase in the number of teams, concurrent projects, and diversity of expertise leads to cultural heterogeneity. Interviews revealed that coordination between teams is particularly challenging in such environments, and if Agile values are not fully embraced at the organizational level, cultural conflicts and hierarchical constraints intensify. Therefore, scalability requires the design of flexible structures and the preservation of an innovative culture. The startup environment itself has unique characteristics; high speed, pressure for product delivery, and limited resources create a context for operational challenges. The data showed that managing short-term pressure, the complexity of cross-team coordination, and hierarchical structures can turn into cultural constraints. However, the startup environment also provides opportunities for continuous learning, flexibility, and innovation, which reinforce culturally facilitating categories.

Analysis of contextual conditions indicates that the operational setting and team structures are determining factors in the success or failure of Agile implementation and the formation of a scalable organizational culture. These contextual conditions have a complex interaction with cultural facilitating and constraining values and, as an intermediate layer, define the degree of impact of Agile strategies. Therefore, in designing the conceptual framework, contextual conditions must be considered as a key factor in analyzing culture and agility in software startups.

Table 5

Contextual Categories

Subcategory	Sample Concepts Extracted from Interviews
Development teams	<ul style="list-style-type: none"> – Close collaboration between development and QA has created transparency and trust. – Continuous interaction with development and UX teams has increased transparency in decision-making.
QA teams	<ul style="list-style-type: none"> – Use of dashboards and real-time reports has increased transparency between QA and development. – Retrospective sessions help teams learn from mistakes.
UX/UI teams	<ul style="list-style-type: none"> – Design Critique sessions improve experiences. – User-centered design requires close collaboration with the product team.
Growing / Scale-up teams	<ul style="list-style-type: none"> – Pressure for rapid product delivery during growth reduces attention to innovation. – Some technical decisions require hierarchical approval, which slows down Agile.
Startup environment	<ul style="list-style-type: none"> – Teams must make technical decisions quickly, but some hierarchical structures reduce speed. – Some managers still have a traditional mindset and restrict team decisions.
Complex projects	<ul style="list-style-type: none"> – Architecture and Design Review meetings support cross-team learning. – Continuous design reviews foster learning and process improvement.

Intervening conditions refer to factors that stand between causal conditions and operational outcomes and significantly influence how Agile methods are implemented and how cultural behavior takes shape in teams. Analysis of data from 16 interviews showed that several major intervening factors affect the interaction between organizational culture and agility in software startups. One of the most important intervening conditions is the resistance of managers with a traditional mindset. These managers, who were present in the organization before Agile methods were adopted, are sometimes not aligned with values such as self-organization, acceptance of errors, and continuous feedback. Multiple interviewees stated that the existence of this resistance causes teams to face constraints in implementing Agile and reduces self-governance. From a theoretical perspective, this resistance can be regarded as a cultural constraining factor that slows down and complicates Agile implementation.

The presence of team members with an old mindset or traditional organizational culture also has an intervening role. These individuals, who have often been part of the team since the early days of the organization, may be uncomfortable with Agile principles and resist process changes. Interview analysis showed that this resistance appears particularly in complex projects and larger teams and makes cross-team coordination more difficult. This finding highlights the importance of training

strategies and Agile coaching to align legacy teams with agile values and processes. Interviewees emphasized that the focus on rapid delivery and short-term results sometimes conflicts with principles of continuous learning and innovation. Short-term performance pressure leads teams, in striving to meet deadlines, to lose opportunities for error analysis and feedback. This intervening factor plays a major role in reducing decision quality and the impact of culturally facilitating values. The findings indicate that managing the balance between short-term pressure and long-term growth is vital for Agile success.

As the organization scales, coordination among multiple teams becomes a major intervening challenge. Interviews showed that small differences in team cultures and constraining hierarchical structures create gaps in Agile implementation. In other words, even if teams follow cultural facilitating values, the absence of cross-team coordination can limit the effectiveness of agile processes. This finding is consistent with studies emphasizing that Agile scalability requires cultural convergence and coordination between teams (Dikert et al., 2016).

Intervening conditions indicate that the success of Agile implementation in scaling startups does not depend solely on the adoption of agile principles; rather, a combination of managerial factors, resources, legacy culture, and performance pressures strongly influences the realization of culturally facilitating values and the capacity to overcome organizational constraints. Consequently, identifying and managing these intervening conditions is essential for designing successful Agile implementation strategies.

Table 6

Intervening Categories

Subcategory	Sample Concepts Extracted from Interviews
Resistance of traditional managers	<ul style="list-style-type: none"> – Some managers still have a traditional mindset and restrict team decisions. – Some managers, instead of supporting, make decisions that are constraining.
Resource constraints	<ul style="list-style-type: none"> – Pressure for rapid product delivery reduces attention to innovation and quality. – Some team members do not have enough time to document experiences.
Legacy team culture	<ul style="list-style-type: none"> – Some senior team members are still not comfortable with the Agile mindset and show resistance. – Some developers still do not understand the importance of UX.
Short-term performance pressure	<ul style="list-style-type: none"> – Managerial pressure for rapid delivery leads to loss of learning opportunities. – Prioritizing short-term outputs sometimes reduces the value placed on learning.
Complexity of cross-team coordination	<ul style="list-style-type: none"> – Coordination among multiple teams in a larger organization is difficult. – Minor differences in team cultures create conflict in Agile implementation.

The analysis of the interview data shows that the organizational culture of scaling software startups plays a critical and decisive role in the success or failure of implementing Agile methods. The core category derived from the data analysis is organizational culture as an enabling or constraining factor in Agile implementation. This core category consists of two main dimensions: enabling cultural values and constraining culture.

Enabling cultural values:

This dimension of organizational culture includes a set of values and behaviors that strengthen Agile processes and enable continuous learning, collaboration, and self-organization. The findings showed that transparency, continuous learning, trust, and innovation/flexibility are the most important enabling components.

- **Transparency:** Interviewees repeatedly emphasized the importance of open and continuous information sharing. Daily meetings, stand-ups, and project management dashboards ensure that all team members are aware of goals, progress, and challenges. This transparency not only supports rapid decision-making but also creates a foundation for trust and self-organization.

- **Continuous learning:** Teams document past experiences and mistakes and use them as learning resources. Retrospective and Design Critique sessions provide opportunities to review weaknesses, adjust processes, and continuously improve the product. This learning-oriented approach strengthens a feedback culture and supports the professional growth of team members.

- **Trust:** Trust between team members and managers is fundamental. Team self-organization and decision-making autonomy increase accountability and improve performance quality. Trust provides the basis for active participation and a spirit of innovation.

- **Innovation and flexibility:** An innovative and flexible culture goes beyond the mere execution of Agile processes. Teams are able to make creative decisions and propose novel solutions under conditions of uncertainty and rapid market change.

These findings emphasize that the presence of enabling cultural values is essential for Agile implementation to move beyond procedural execution and become an organizational mindset and approach.

Constraining culture:

On the other hand, data analysis showed that some aspects of organizational culture can limit Agile implementation and slow down scalability. This dimension includes hierarchical control, resistance to change, short-term and performance pressure, and cultural heterogeneity.

- **Hierarchical control:** Technical and managerial decisions that require senior management approval restrict team autonomy and reduce the speed of Agile decision-making. This hierarchical structure often emerges in growing startups and conflicts with Agile's self-organizing culture.

- **Resistance to change:** Senior members or conservative managers make it difficult to adopt Agile values such as continuous feedback, self-organization, and tolerance of error. This resistance can slow down organizational change and reduce Agile effectiveness.

- **Short-term and performance pressure:** A strong focus on rapid product delivery, customer acquisition, and revenue generation may lead to neglect of long-term learning and innovation. This performance pressure is especially evident during periods of rapid startup growth.

- **Cultural heterogeneity:** As teams and offices grow, the initial organizational culture may diverge across units. This cultural gap can reduce convergence and coordination between teams and make Agile implementation more complex.

The qualitative data analysis indicates that organizational culture in software startups functions as a mediating factor that directly and indirectly affects Agile success. Enabling cultural values such as transparency, continuous learning, and trust increase teams' capacity for self-organization, innovation, and coordination, whereas cultural constraints such as hierarchical control and resistance to change can hinder Agile development and scalability speed. In summary, the success of Agile implementation in scaling startups depends on the balance between these two cultural dimensions. Organizations that can strengthen enabling values and reduce constraints are more likely to achieve true agility and sustainable growth.

Table 7

Core Category

Subcategory	Sample Concepts Extracted from Interviews
Enabling cultural values (Enabling Culture)	<ul style="list-style-type: none"> – Continuous learning: Teams use Retrospectives and documentation of experiences to turn mistakes into learning opportunities. – Transparency: Continuous communication between teams and managers and daily meetings support information sharing and rapid decision-making. – Trust: Team self-organization and autonomy increase trust between members and managers. – Innovation and flexibility: An innovative culture influences not only Agile execution but also strategic decisions and team processes.
Constraining culture (Constraining Culture)	<ul style="list-style-type: none"> – Hierarchical control: Some decisions still require senior management approval and slow down the team. – Resistance to change: Senior members or conservative managers make it difficult to adopt Agile values. – Short-term and performance pressure: A focus on rapid delivery sometimes reduces the value placed on learning and innovation. – Cultural heterogeneity: Minor differences between teams or different offices reduce cultural convergence.

The data analysis shows that scaling startups implement a set of targeted strategies to overcome cultural and operational constraints. These strategies not only facilitate Agile processes but also act as moderating mechanisms between the existing organizational culture and operational agility. Transparency, as one of the main pillars of an enabling culture, plays a vital role in scalable startups. Interviewees emphasized that daily meetings, real-time dashboards, and continuous communication between teams increase members’ awareness of goals, project progress, and essential feedback. These actions, while increasing transparency, facilitate participatory decision-making and prevent information gaps. In other words, transparency is not limited to information sharing; it also functions as an enabling cultural factor that supports team coordination and reduces resistance to change.

Another key strategy is the emphasis on continuous learning. Organizations maximize learning opportunities through Retrospectives, Design Critique sessions, and documentation of past experiences. These actions indicate that continuous learning, beyond individual skill development, has become an organizational process that increases teams’ capability to deal with environmental complexity and change. From a more scientific perspective, continuous learning operates as a cultural feedback mechanism that institutionalizes learning from error and process adjustment at all organizational levels. The interview analysis shows that granting teams authority for technical and operational decision-making and creating self-organizing teams increases the level of trust between team members and managers. Trust, as a core category, creates the necessary conditions for Agile implementation and improves teams’ capacity for self-organization. These strategies clearly demonstrate that team self-organization is not possible without mutual trust and that reducing hierarchical control while maintaining accountability helps increase the speed and quality of decisions.

One common challenge in scaling startups is hierarchical interventions and centralized decisions by senior managers. The data show that teams, by creating faster approval processes and reducing dependence on top-down decisions, have been able to increase their responsiveness and flexibility. This strategy is particularly critical for technical and product design decisions that require high agility. In other words, reducing hierarchical constraints functions as an intermediary factor for realizing Agile values in the organization’s real environment. Resistance to change, especially from senior members and traditional managers, is one of the main obstacles to Agile implementation. The data show that using workshops, continuous training, and Agile coaching increases change acceptance and strengthens an agile mindset. These actions clearly play the role of a cultural intervening mechanism and demonstrate that behavior change and adoption of an agile culture are difficult without targeted educational and coaching programs.

In startup environments, pressure for rapid product delivery and short-term goals is a constant threat to implementing Agile principles and continuous learning. Interviewees reported that by balancing priorities between fast delivery and learning, and by designing flexible processes, teams have been able to reduce the impact of short-term pressure and help preserve innovation and product quality. This indicates that operational strategies must be aligned with cultural goals in order for real agility to be institutionalized in the organization. The strategy analysis shows that scalable startups, in order to realize Agile values, require a set of simultaneous actions in the areas of transparency, learning, trust, reduction of hierarchical constraints, management of resistance, and management of short-term pressure. These strategies simultaneously strengthen enabling cultural values, reduce cultural and operational constraints, and enable team self-organization and successful Agile implementation at scale. In other words, strategies form the bridge between organizational culture and Agile success and show that agile processes cannot be implemented sustainably without strategic planning and management of intervening factors.

Table 8

Strategies

Subcategory	Sample Concepts Extracted from Interviews
Enhancing transparency	<ul style="list-style-type: none"> – Holding daily meetings and stand-ups for information sharing and team coordination. – Using dashboards and project management tools to create transparency in QA and development progress.
Strengthening continuous learning	<ul style="list-style-type: none"> – Continuous communication between development, product, and UX/UI teams for better decision-making. – Conducting Retrospective and Design Critique sessions to review experiences and correct errors. – Documenting past experiences and sharing them across teams. – Ongoing training and Agile workshops for team members and managers.
Increasing trust and self-organization	<ul style="list-style-type: none"> – Delegating authority to teams for technical and operational decision-making. – Strengthening a culture of collaboration between teams and creating a climate of trust among members. – Creating self-organizing and autonomous teams to improve performance and decision-making speed.
Reducing hierarchical constraints	<ul style="list-style-type: none"> – Reducing the need for senior management approval for team decisions. – Creating faster processes for approving system design and architecture.
Addressing resistance to change	<ul style="list-style-type: none"> – Holding Agile workshops and training sessions for senior members and traditional managers. – Agile coaching and support from Scrum Masters to facilitate adoption of agile methods.
Managing short-term pressure	<ul style="list-style-type: none"> – Balancing priorities between rapid delivery and learning opportunities. – Designing flexible processes to preserve innovation and product quality.

The analysis of the data shows that organizational culture and Agile implementation in scaling startups interact in a complex manner and generate multidimensional outcomes for performance, learning, innovation, and organizational convergence. The data indicate that teams with an enabling culture—especially those that uphold values such as transparency, trust, and continuous learning—achieve higher performance levels. Team self-organization and autonomy lead to faster decision-making and shorter, more effective development cycles. Although short-term pressure can be limiting at times, teams that have managed to balance rapid delivery with opportunities for learning through appropriate strategies have achieved sustainable performance.

Organizational strategies such as training, Agile coaching, Retrospective sessions, and transparency tools have helped institutionalize Agile values among team members. The analysis shows that adoption of Agile is not achieved merely through process implementation; rather, developing an agile mindset and changing traditional behaviors play a decisive role. Organizations that have successfully reduced resistance among managers and older team members have been able to stabilize an Agile culture. Reducing hierarchical constraints, creating self-organizing teams, and facilitating participation in decision-making have increased team and organizational flexibility. This enables the organization to respond quickly to

market changes and customer needs. The data show that teams with an open and innovative culture, in addition to resolving operational problems, also create innovative opportunities for new products and services.

In startup scalability, minor cultural differences between teams may create gaps and conflicts. The findings show that transparency strategies, joint meetings, and experience documentation contribute to cultural convergence and reduce internal tensions. This convergence increases efficiency and coordination among multiple teams within the organization. Close collaboration among development, QA, and UX teams, along with continuous customer feedback, has resulted in improved product quality. Continuous learning from errors and documentation of prior experiences has made it possible to deliver higher-quality products aligned with customer needs.

The qualitative data analysis shows that organizational culture in startups and Agile implementation at scale form an interactive and multidimensional process that generates numerous positive outcomes in team performance, innovation, cultural convergence, and product quality. At the same time, constraints and obstacles such as traditional resistance, short-term pressure, and hierarchical control can weaken these positive effects. This analysis shows that targeted managerial strategies and operational tactics play a vital role in aligning organizational culture with Agile methods, and success in startup scalability depends on achieving a balance between enabling and constraining cultural dimensions.

Table 9

Outcomes

Subcategory	Sample Concepts Extracted from Interviews
Improvement of quality and innovation	<ul style="list-style-type: none"> – Teams improve processes and products through continuous review of experiences and feedback. – A learning and trust-based environment increases team innovation and flexibility.
Increased coordination and team collaboration	<ul style="list-style-type: none"> – Transparency in meetings and project management tools reduces misunderstandings across teams. – Close collaboration among development, QA, and UX teams leads to cultural convergence and improved performance.
Growth of skills and capabilities	<ul style="list-style-type: none"> – Retrospective and Design Critique sessions help teams learn from errors and strengthen technical and managerial skills.
Reduction of cultural and organizational conflict	<ul style="list-style-type: none"> – Reduced hierarchical structures and delegation of authority decrease conflict between traditional managers and self-organizing teams.
Preservation of startup culture	<ul style="list-style-type: none"> – Transparency, trust, and continuous learning help preserve core startup values during growth and scaling.
Challenges and constraints	<ul style="list-style-type: none"> – Resistance from older members or traditional managers can still slow decision-making and reduce innovation. – Short-term product delivery pressure sometimes reduces opportunities for learning and innovation.

After open and axial coding, the research proceeded to selective coding, which aimed to identify the core category and the relationships among the categories. This stage enables the phenomenon under study to be presented in the form of a logical and paradigmatic model. In the contextual model developed (Figure 1), the core category is identified as the central component guiding processes and decisions of Agile teams in software organizations, with all other categories positioned in relation to it.

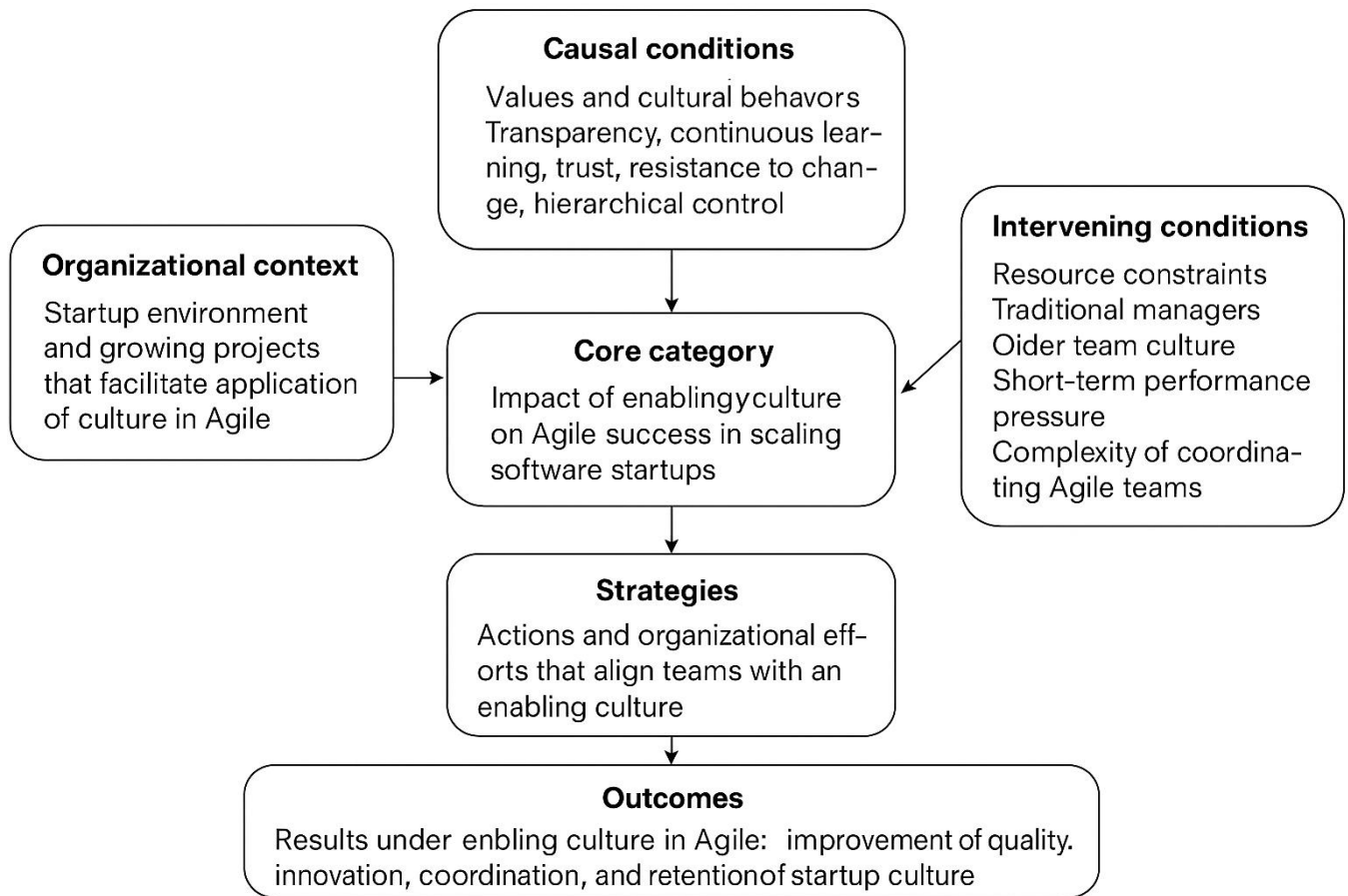
The model shows that causal categories such as transparency, continuous learning, trust, hierarchical control, resistance to change, and short-term pressure act as prerequisites and influential factors that shape team behaviors and experiences. These causal factors, in interaction with contextual conditions—such as development teams, QA teams, UX/UI teams, growing teams, the startup environment, and complex projects—form the operational framework of teams and influence how Agile is implemented.

Intervening categories such as resistance from traditional managers, resource constraints, legacy team culture, short-term performance pressure, and the complexity of cross-team coordination play moderating roles and may amplify or reduce the influence of causal and contextual factors. These categories show that Agile implementation at larger scales and during rapid growth requires active management of cultural and structural barriers.

The resulting outcomes of the interaction between these categories include improved quality and innovation, increased coordination and collaboration, skill and capability development, reduced cultural and organizational conflict, preservation of startup culture, and identification of challenges and constraints. These outcomes confirm that an enabling culture—along with continuous learning and transparency—can lead to successful Agile implementation, while cultural and structural constraints can slow and complicate the process.

Figure 1

Contextual (Paradigmatic) Model Derived from the Coding Process



Discussion and Conclusion

The purpose of this study was to explore, through a grounded theory approach, how organizational culture influences the success or failure of Agile implementation in scaling software startups. The findings indicate that Agile success is not merely the outcome of adopting iterative processes or frameworks but is deeply rooted in cultural values that shape team behaviors, decision-making, learning, and coordination. Consistent with prior scholarship, the results emphasize that cultural enablers—particularly transparency, continuous learning, trust, and flexibility—serve as core mechanisms that strengthen Agile implementation. Conversely, cultural constraints—such as hierarchical control, resistance to change, short-term performance pressure, and cultural fragmentation—emerge as critical inhibitors to Agile scalability. These findings contribute to a richer understanding of Agile transformation by illustrating the dynamic interplay between cultural forces and organizational growth contexts.

A central theme emerging from the results is the role of transparency in supporting effective Agile practices. Participants described transparency as a catalyst for better coordination, quicker decision-making, and reduced ambiguity during rapid scaling. This aligns with the premise in the Agile literature that transparency is foundational to Agile roles, events, and artifacts [2]. It also strongly confirms the view that transparency fosters shared mental models and supports collaborative problem-solving in turbulent environments [1]. The findings further resonate with work on multicultural Agile teams, where transparency is shown to mitigate misalignment and communication barriers across diverse team members, thereby reducing conflict and enhancing coordination [4]. Thus, the present study reinforces the idea that transparency acts not only as a procedural requirement of Agile but also as a cultural norm that supports collective awareness and accelerates adaptation during scaling.

Another significant insight concerns the importance of continuous learning as an enabling factor. Participants emphasized how retrospectives, design critiques, and documentation of experiences provided mechanisms for iterative improvement and error-based learning. These observations are consistent with organizational models that highlight learning as a prerequisite for Agile maturity and innovation [7]. Prior research also notes that digital transformation initiatives depend heavily on a learning-oriented culture that encourages experimentation, reflection, and knowledge sharing [15]. Moreover, continuous learning strengthens team resilience, a factor closely associated with agility and well-being in organizational contexts [14]. The present findings therefore underscore that continuous learning is not an optional Agile practice but an embedded cultural value that allows teams to adapt quickly, improve their processes, and maintain performance despite contextual complexity.

The results also demonstrate the importance of trust and self-organization for Agile scaling. Trust emerged as a binding force that enables employees to embrace autonomy, collaborate more openly, and take initiative in decision-making. This is consistent with prior work that identifies trust as a central cultural factor influencing Agile success and mitigating interpersonal friction [5, 6]. Studies on job redesign and workforce agility also indicate that trust supports empowerment and skill flexibility, both of which enhance organizational adaptability [8]. In addition, trust facilitates psychological safety, which is critical for Agile teams to iteratively test, innovate, and adjust strategies under uncertain conditions. Thus, this study reinforces the consensus that trust is a cultural prerequisite for sustaining Agile behaviors, especially in scaling environments where decentralization and cross-team coordination are essential.

On the other hand, the findings reveal several cultural constraints that impede Agile scaling. Hierarchical control was identified as one of the most significant inhibitors. Participants described how approval bottlenecks, top-down decision structures, and legacy managerial habits limited the autonomy of Agile teams and slowed iterative cycles. This reflects concerns raised in scaled-Agile research, which notes that command-and-control structures can undermine innovation and delay critical decision flows [9]. Moreover, hierarchical control conflicts with Agile's emphasis on empowerment, shared leadership, and decentralized decision-making. Cultural misalignment of this nature is a recurring challenge in traditional or bureaucratic organizations undergoing Agile transformation [3]. The present study adds empirical weight to these arguments by demonstrating how hierarchical patterns manifest in startup scaling contexts, where rapid growth often introduces new layers of management that inadvertently reintroduce hierarchical constraints.

Resistance to change emerged as another major constraining factor, particularly among long-tenured employees and managers accustomed to traditional workflows. Participants reported that resistance hindered the adoption of Agile rituals, lowered engagement in learning activities, and impaired cross-team collaboration. These challenges mirror previous findings

in Agile research showing that resistance from middle managers often disrupts Agile cultural alignment [16]. This resistance is further complicated in multicultural or cross-functional teams where differing beliefs about authority, communication, and decision-making can create additional friction [4]. The findings therefore confirm that Agile adoption is fundamentally a cultural transformation process requiring active change management, continuous coaching, and intentional leadership engagement.

The study also highlights short-term performance pressure as a cultural barrier. In scaling startups—where speed, customer acquisition, and investor expectations are prominent—teams frequently prioritize immediate outputs over learning, experimentation, and quality. This tension reflects a well-documented challenge in agile transformation: the conflict between rapid delivery and long-term capability building [1]. Research on digital transformation similarly notes that organizations often struggle to balance efficiency with innovation, especially when constrained by limited resources or external pressures [10]. The present findings demonstrate that unless leaders explicitly protect learning time and encourage sustainable practices, Agile adoption becomes superficial and mechanistic, weakening its strategic value.

Cultural fragmentation also emerged as a constraint, especially in organizations experiencing rapid scaling. As teams grow, diversify, and specialize, subtle discrepancies in interpretation of Agile values emerge. Participants noted that misalignment across teams created coordination complexity and diluted the consistency of Agile implementation. Prior research on organizational agility in public service infrastructures shows that alignment of cultural values across units is essential for achieving systemic agility [13]. Similarly, work on managerial capabilities emphasizes that cultural coherence is necessary for enabling strategic agility and digital readiness across multiple units [11]. The present study thus reaffirms the significance of cultural cohesion in enabling agile scalability, particularly in fast-growing software environments.

Taken together, the findings contribute to theoretical and practical discussions by showing that Agile implementation in scaling startups is a dynamic negotiation between cultural enablers and constraints. Agile success is most achievable when teams cultivate transparency, trust, learning orientation, and innovation mindsets, and when organizational structures support decentralization and cross-functional collaboration. Conversely, hierarchical control, resistance to change, short-term pressure, and cultural fragmentation undermine these strengths. These insights integrate and extend previous studies across agile methodology, digital transformation, workforce agility, and managerial capability domains [1, 2, 4, 7-9, 14, 15]. Importantly, the study demonstrates that Agile maturity is not merely structural or procedural but cultural, and organizations that neglect cultural alignment risk limited or temporary Agile benefits.

While the grounded theory design provided deep insight into cultural dynamics within scaling software startups, several limitations should be acknowledged. First, the study relied on qualitative interviews from a specific set of software startups, which may limit the generalizability of findings across different industries or organizational sizes. Second, although efforts were made to ensure diversity among participants, self-reporting may have introduced subjective bias regarding team culture and Agile experience. Third, the study captured perceptions at a particular moment in time; longitudinal data would provide richer understanding of how cultural values evolve throughout the scaling process. Finally, although triangulation was employed, access to internal documents varied across organizations, limiting the depth of process-level validation in some cases.

Future research could benefit from comparative studies that examine cultural impacts on Agile implementation across different industries, cultural contexts, or regulatory environments. Longitudinal research would be valuable for tracking how

organizational culture evolves during scaling and how Agile adoption matures over time. There is also a need for quantitative models that measure the relative influence of cultural enablers and constraints on Agile performance. Further exploration of multicultural Agile teams, hybrid work environments, and distributed Agile structures would provide new insights into cultural coordination challenges. Finally, future studies may explore the role of leadership identity, emotional intelligence, and organizational learning structures in shaping Agile cultural alignment.

Organizations seeking to scale Agile should invest deliberately in cultivating transparency, continuous learning, trust, and decentralized decision-making. Leaders should reduce unnecessary hierarchical controls, protect time for retrospectives and learning, and encourage experimentation even under time pressure. Practices such as Agile coaching, cross-functional workshops, and cultural alignment initiatives can help reduce resistance and improve cohesion across teams. Ensuring consistency of Agile values across growing units, while maintaining the adaptive spirit of startups, can support long-term scalability and sustainable Agile maturity.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Written consent was obtained from all participants in the study.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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