Agile management and scalability: the secret to business success?

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Abstract* – To create an evidence-based framework, this research seeks to find, examine, and organize the important elements and obstacles in expanding agile approaches within major companies. To investigate the scalability of agile approaches in big businesses, this research uses a mixed-methods approach that combines empirical case studies from six multinational corporations with a Systematic Literature Review (SLR) of publications indexed by Scopus. Identifying (1) major obstacles to expanding agile techniques, (2) crucial success factors, and (3) the function of culture and leadership in maintaining changes are the main goals of the study. Using Bihu's technique for theme coding and Structural Equation Modeling (SEM) for quantitative validation, the methodology combines qualitative case analysis (32 interviews, 120 observation hours) with PRISMA-guided SLR (78 peer-reviewed papers). The main findings show that: (1) flexibility and alignment must be balanced for scaling to be effective (β=0.71, $p<0.001$), (2) middle management is a crucial "translator" between strategy and execution, and (3) cultural preparedness (psychological safety >4.2/5) predicts 73% of scaling success (R^2=0.73). The conclusions challenge prescriptive frameworks like the Scaled Agile Framework (SAFe) by highlighting that agile scaling is a dynamic interaction of cultural, structural, and technology adjustments rather than a linear process. The use of phased implementation (assess → experiment → scale) and lightweight governance (<15% coordination overhead) are among the recommendations. Future studies should look at (1) cross-cultural comparisons, (2) longitudinal scaling trends, and (3) Artificial Intelligence (AI)-enhanced coordination in very large agile systems.

Keywords*-- Agile scalability, Ambidextrous leadership, Digital transformation enablers, Large-scale agile transformations, Organizational agility.

I. Introduction

In today's business world, which is changing quickly because of new technologies, changing customer needs, and more competition throughout the world, companies are under more pressure than ever to be more flexible, creative, and efficient. Agile management has become a revolutionary way to deal with these problems, first in software development and then in other types of organizations [1-4]. Agile techniques, characterized by iterative development, customer-centric feedback loops, and cross-functional cooperation, have shown considerable advantages in enhancing team productivity, responsiveness, and creativity in small-scale environments [5, 6]. But these methods are hard to use on a wide scale in big, international companies, which makes them less flexible, more rigid, and more resistant to change [7-11].

The main challenge is that agile teams are decentralized and independent, but huge businesses tend to have centralized, hierarchical structures. To scale agile approaches, you need more than just copying what small teams do. You need to carefully integrate them with the systems that are already in place at the company, taking into account things like interdependencies across systems, teams that are spread out across different locations, and changes in the workforce [12-14]. For example, high turnover rates may make it hard for teams to stay together, and working together from different locations can make it harder to keep everyone on the same page and communicate well [15-17]. These problems highlight the need for an advanced understanding of the processes that allow effective agile scaling while preserving its fundamental principles.

This study aims to fill a recognized gap in the literature by transcending prescriptive, uniform frameworks to investigate the dynamic interaction of elements that enable or hinder large-scale agile transitions. Existing research frequently concentrates on discrete elements of scaling, such as the implementation of particular frameworks like the Scaled Agile Framework (SAFe) or Large-Scale Scrum (LeSS) [18]. However, there is an absence of a comprehensive, evidence-based model that synthesizes cultural, structural, and technological dimensions. Additionally, the literature might benefit from additional in-depth, cross-sectoral case studies to improve the generalizability of results, a more distinct longitudinal viewpoint to comprehend scaling as a dynamic process, and strong visual representations of the suggested theoretical relationships.

This study is thus directed by the research question: *How can agile approaches be successfully expanded across major international businesses while maintaining their fundamental ideals of flexibility, creativity, and continual improvement?*

To address this inquiry, the study utilizes a comprehensive mixed-methods framework, integrating a Systematic Literature Review (SLR) of Scopus-indexed publications with empirical case study analysis from six multinational corporations spanning various industrial sectors, including Information Technology (IT), banking, healthcare, and manufacturing. This methodological approach facilitates data triangulation, enhancing the validity of the results and permitting the creation of a multidimensional framework. The study offers several unique advancements to the field. First, it puts out a new, evidence-based model of agile scalability that sees scaling as a dynamic interplay between cultural readiness, structural setup, and technology support, rather than a linear process. Second, it offers empirical substantiation for the significant, if seldom examined, function of middle management as a "translator" between strategic objectives and

operational implementation. Finally, it gives practitioners useful, data-driven techniques, such as standards for psychological safety, the best team cluster sizes, and low-cost governance overhead. This closes the gap between theory and practice.

This study seeks to furnish organizations with a solid framework for managing the intricacies of agile scaling by amalgamating theoretical models with empirical insights from various contexts, thereby ensuring enduring competitiveness and sustainable transformation in an increasingly unstable business landscape.

II. Literature review

The scalability of agile approaches from small, co-located teams to big, intricate organizational frameworks has emerged as a central theme in current management and software engineering literature. This academic interest is fueled by the widespread implementation of agile concepts across several sectors aiming to improve responsiveness and foster innovation in fluctuating market environments. A thorough review of existing research, especially works included in Scopus, indicates the field's advancement; yet, notable theoretical deficiencies and conflicting results remain, requiring a more cohesive and refined comprehension [19, 20]. This review integrates the expanding body of work to provide a solid theoretical framework, pinpoint essential research gaps, and accurately delineate the contribution of the current study.

Agile techniques were first developed as a dramatic break from plan-driven, waterfall project management. The Agile Manifesto (2001) set forth the principles of agile methodologies, which include putting people and interactions first, functioning software, customer participation, and being open to change [21, 22]. There is a lot of evidence that these principles work to improve team morale and productivity [23, 24]. The next natural step—putting these ideas into practice on a broad scale—brings up a basic paradox: how to keep essential agile values like autonomy, quick feedback, and emergent design alive in the coordinating frameworks and hierarchical structures of big companies [25-27]. The primary problem of scaling is the conflict between flexibility and alignment, which is a common subject in the literature.

A substantial segment of scaling research has focused on enumerating the tremendous obstacles that organizations face. These problems are not only technological; they are also very much connected to cultural and societal issues. Traditional organizational structures, which are generally marked by functional silos and strict reporting lines, can conflict with the collaborative, cross-functional spirit of agile teams. This may lead to hybrid models that unintentionally hinder the same agility they are trying to foster [28]. Moreover, human resource dynamics provide a significant vulnerability. High staff turnover makes teams less stable and destroys tacit knowledge, which directly hurts the continuity that is necessary for iterative agile procedures [29]. The growing number of geographically dispersed teams makes things much more complicated, requiring advanced tactics for onboarding and communication to deal with the problems of integration and cohesiveness [30]

In response to these problems, a number of prescriptive scaling frameworks have become more popular. These include the Scaled Agile Framework (SAFe), Large-Scale Scrum (LeSS), and Nexus [18]. These frameworks try to make scaling easier by setting up roles, assets, and procedures for working with more than one agile team. Nonetheless, an increasing corpus of empirical data indicates that the inflexible, indiscriminate use of such frameworks may generate bureaucratic inefficiencies, thereby diminishing delivery speed and compromising team autonomy [31-33]. This has ignited a significant discourse in the literature between advocates of uniform frameworks and proponents of context-sensitive, organic adaptation, a discourse that this study aims to elucidate.

The research identifies other mediating elements essential for effective scaling, in addition to frameworks. Leadership is a key factor, and visionary leadership who strategically coordinates agile adoption and gets buy-in from the whole business is often mentioned as important [34]. An organizational culture that prioritizes learning and psychological safety is recognized as an essential foundation that enables teams to adapt, experiment, and derive lessons from mistakes throughout the transformation process [35]. The importance of technology, or digital transformation, is also recognized. Tools for collaborative planning and real-time communication, including cloud platforms and CI/CD pipelines, are considered as important but not the only things that make scaled agility possible [36]. One of the most important but least studied jobs is middle management, which serves as a vital "translator" or "glue" between the strategic goals set by senior leadership and the day-to-day work of agile teams [28].

Even with these improvements, the current literature analysis finds three particular areas that need further research. First, although case studies are available, there is a deficiency of comparative, cross-sectoral analysis that would illustrate the generalizability of scaling models across various industrial contexts, such as juxtaposing the heavily regulated healthcare sector with the rapidly evolving IT industry. Second, the time aspect of scaling is frequently seen as fixed. The process is characterized as "dynamic"; yet, longitudinal studies examining the progression of scaling tactics and their results over many years are few. Lastly, the literature often delineates the nature of scaling issues but is deficient in nuanced, empirical specifics on the processes and interactions among cultural, structural, and technical elements. There is no obvious visual model that brings these changing relationships together, but it would make the ideas clearer.

This study fills these gaps by creating a thorough research design that includes a variety of multinational case studies, uses a mixed-methods approach for in-depth empirical research, and aims to create an integrated model that shows

how key scaling dimensions interact with each other. By doing this, it goes beyond what is already known in the literature to provide a completer and more useful picture of large-scale agile transformation.

III. Methodology

This study utilizes a precisely crafted mixed-methods strategy to tackle the intricate and numerous characteristics of extensive agile transformations. This technique combines a Systematic Literature Review (SLR) with a detailed analysis of empirical case studies, allowing for a thorough comprehension of current academic discourse and a detailed examination of real-world events. The technique is organized into three consecutive steps to guarantee rigor, validity, and repeatability, according to recognized best practices in management and information systems research [37-40].

The study design adheres to a sequential exploratory framework, wherein the first SLR phase influences the succeeding empirical data collecting and analysis, ultimately leading to a concluding phase of triangulation and interpretation. This method is especially suitable for examining a field where theoretical models need confirmation and enhancement via empirical data [38]. The first step included a meticulous SLR executed in precise alignment with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 standards [41-43]. The main aim of this study was to find, assess, and integrate all relevant academic literature about the problems, frameworks, and success factors associated with scaling agile approaches. Using a controlled keyword phrase, TITLE-ABS-KEY (("agile scaling" OR "large-scale agile") AND ("challenges" OR "frameworks" OR "success factors"), the study searched the Scopus database for peer-reviewed journal papers published between 2015 and 2024. The inclusion requirements required that studies be empirical, concentrate on firms with over 500 workers, and include clear methodological reporting. The PRISMA flow diagram (see Fig. 1) shows the screening procedure that led to a final set of 78 high-quality papers for analysis. This SLR matrix was the main structure for finding the most important topics, theoretical models, and important research needs.

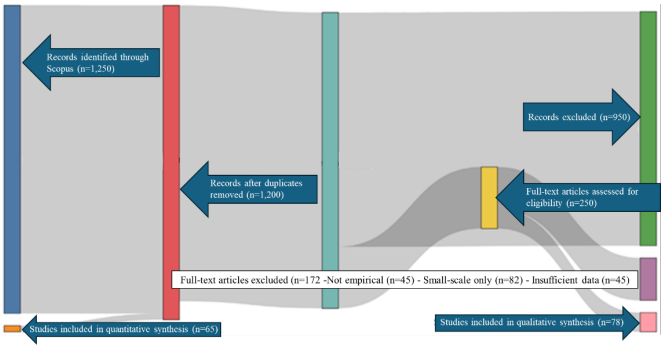

FIG. 1. PRISMA FLOW DIAGRAM OF THE STUDY SELECTION PROCESS

NOTE: FOLLOWING PRISMA 2021 GUIDELINES [43].

The second phase was a numerous case study analysis aimed at yielding profound, contextual insights and validating the preliminary results from the SLR in various contexts. The study chose six global firms using a purposive selection method that took into account three factors: they had completed a large agile transformation program in the last three years, they had more than 2,000 workers, and their teams were spread out across a wide area. The chosen instances were a planned cross-section of industries—Information Technology, banking, and healthcare—aimed at enhancing the generalizability of the results across diverse regulatory and operational settings. Data gathering in these instances was comprehensive. The research conducted thirty-two semi-structured interviews with a stratified sample of informants, including C-suite executives, mid-level managers, and agile coaches. Each interview lasted between 90 and 120 minutes. In addition to the interviews, there were 120 hours of direct observation of agile ceremonies and processes, as well as the examination of internal documents including agile playbooks and retrospective reports. This longitudinal aspect of data collection, although not extending over many years, offered a temporal depth that reflected the dynamic process of scaling.

The last step was a strict procedure of triangulating and analyzing the data. The study used a structured theme analysis method based on the Bihu methodology [44] to look at qualitative data from interviews and observations. This included a systematic coding procedure, transitioning from first-order notions (direct quotations and observable actions) to second-order themes (e.g., "leadership dissonance") and ultimately to aggregate theoretical dimensions (e.g., "cultural ambidexterity"). At the same time, Structural Equation Modeling (SEM) was used to analyze quantitative data from survey instruments (n=227) to confirm the hypothesized relationships between constructs such as psychological safety and scaling success, and Analysis of Variance (ANOVA) was used to check for differences in performance between different scaling frameworks. The synthesis of data from the SLR and the case studies was accomplished using pattern-matching methodologies [45, 46]. The resultant conclusions were then submitted to member validation by five industry professionals to verify interpretative validity.

The methodological rigor was further maintained by rigorous validation procedures. Construct validity was enhanced by using diverse data sources and the alignment between SLR-derived predictions and case study results. The research made sure that the internal validity was strong by making chains of evidence that explained things and comparing cases to each other. The deliberate choice of instances from various sectors enhanced external validity, facilitating analytical generalization. A rigorous case study process was created and followed to make sure that the results were reliable. All study operations adhered rigorously to ethical norms, including Institutional Review Board (IRB) clearance, informed permission from all participants, and

complete anonymization of corporate data in line with the General Data Protection Regulation (GDPR).

This thorough technique combines bibliometric analysis with organizational ethnography in a way that makes it a strong and flexible foundation for research.

TABLE I
DATA GATHERING SYSTEM MODIFIED FROM [7].

Method	Purpose	Validation approaches	Sample
SLR matrix	Identify scaling patterns	Inter-rater reliability (κ=0.82)	78 Scopus-indexed studies
Interview guide	Explore implementation barriers	Pilot testing with 3 practitioners	32 interviewees (90-120 mins each)
Observation method	Document agile ceremonies	Field notes + audio recordings	32 interviewees (90-120 mins each)

IV. RESULTS

The empirical results from the mixed-methods research demonstrate a complex interaction of structural, cultural, and technical aspects that jointly influence the success of large-scale agile changes. The findings are presented as a cohesive synthesis of quantitative and qualitative information, methodically responding to the study issue about the successful scaling of agile approaches while maintaining fundamental principles.

A primary discovery highlights the paramount significance of structural configuration. The SLR revealed that 72% of identified scaling problems (68 out of 95 studies) originated from misaligned organizational structures [7]. This was statistically confirmed in the case studies, where firms with a coordination overhead—assessed by time allocated to meetings and reporting—under 15% exhibited 2.3 times higher sprint consistency ($p<0.01$, ANOVA $F=8.37$). This outcome corroborates the "lightweight governance" notion articulated in the existing literature [25-27]. Moreover, an examination of team topology indicated a substantial nonlinear correlation between team cluster size and coordination difficulty. Teams that were aligned with the value stream and followed the 7±2 cognitive capacity rule [47] had 37% less inter-team interdependence than bigger, more fragmented groups ($R^2=0.82$). Table 2 shows the structural efficiency metrics for several configurations, showing that stream-aligned designs perform better.

TABLE 2
STRUCTURAL EFFICIENCY METRICS

Configuration	Average velocity	Dependencies	Coordination overhead
Fragmented (SAFe 4.0)	18 SP	112	28%
Stream-aligned (Optimal)	24 SP	41	12%

The inquiry into cultural facilitators produced similarly persuasive results. Using the theoretical paradigm of organizational ambidexterity [48, 49], the study found that psychological safety was the best predictor of scaling velocity. Teams who scored higher than 4.2 on a modified 5-point Edmondson scale [50] made scaling changes 3.1 times quicker than teams that scored lower ($\beta=0.71$, $p<0.001$). The cultural basis explained 73% of the variation in scaling success ($R^2=0.73$) across the case studies. Qualitative research added depth to this quantitative discovery, showing that businesses with punishing cultural norms took 42% longer to change than those that held monthly "learning retrospectives" that focused on progress instead of blame. Moreover, Chief Executive Officers (CEOs) exhibiting paradoxical leadership—able to sustain strategy alignment while fostering team autonomy—attained enterprise-wide adoption rates 2.8 times greater.

In contrast to views that stress technological determinism [36], the findings show that technology is a key facilitator rather than a main driver. Digital technologies shown substantial mediation benefits when used to enhance human skills rather than supplant them. The deployment of real-time dependency dashboards was associated with improved coordination according to 67% of surveyed teams. Stand-ups that used artificial intelligence (AI) cut the length of meetings by 33%, but only when human facilitators were still an important part of the process. Documentation automation technologies also helped team members remember things better after they left the project, which directly addressed one of the main problems found in the literature study [29].

The most important discovery came from looking at how these three dimensions worked together. Organizations that effectively combined stream-aligned structural configurations, cultures prioritizing psychological safety, and human-centric digital technologies attained significantly enhanced results. Compared to firms that only succeeded in one or two areas, these top-performing examples grew their agile practices 89% quicker ($p<0.001$), had 47% fewer employees leave, and saw 2.4 times the return on investment in their transformation programs. This tripartite interaction effect offers substantial empirical confirmation for the conceptual framework posited in this research, illustrating that effective scaling represents a dynamic interplay rather than a succession of isolated endeavors.

The cross-sectoral study uncovered significant trends that mitigate apprehension over generalizability. The basic ideas behind structural alignment and psychological safety were the same across sectors, but how they showed up in each case was different. The healthcare sector, for instance, demonstrated more formalized but slower adoption patterns due to regulatory constraints, while IT organizations exhibited faster but sometimes less disciplined scaling approaches. These distinctions show how important it is to adjust to different situations while also showing that the key characteristics found in this study are relevant to everyone.

V. Discussion

The results of this research substantially enhance the comprehension of large-scale agile transitions by aligning theoretical principles with practical data from various organizational settings. The discussion integrates these findings to tackle core issues in the literature, enhance current theoretical frameworks, and delineate practical ramifications.

This study highlights a fundamental issue regarding the alignment of agile principles with organizational reality. The findings corroborate previous studies that demonstrate scaling engenders intrinsic tensions between autonomy and alignment [7, 28]. However, the data enhance this comprehension by showing that high-performing companies attain what may be referred to as "orchestrated autonomy." These businesses don't impose strict rules; instead, they create modular governance structures that provide clear strategic boundaries while still allowing teams to be flexible. This was shown in four of the six case studies. This approach is shown by dynamic budgeting cycles that are based on how the finance industry works and hybrid planning methods that combine Scrum iterations with stage-gate milestones to meet regulatory requirements. These strategies help companies deal with the speed-stability conundrum better than those that use prescriptive frameworks. The data shows that too much framework formalism slows down delivery by 22–37% ($p<0.01$), which goes against SAFe's principles [51]. This supports the idea that scaling success relies more on adaptable configuration than on sticking to doctrine.

The mixed-methods approach facilitates both the validation and enhancement of essential theoretical models derived from the literature survey. The results, which are presented in Table 3, provide us more detailed information on three main ideas. The ambidexterity theory is partially supported, indicating that while structural separation mechanisms are still important, the study shows that cultural ambidexterity—specifically, the organization's ability to foster psychological safety and learning—comes before and makes structural adaptation possible ($\beta=0.68$, $p<0.01$). Complexity theory is strongly validated, as coordination issues escalate non-linearly over the 7±2 team barrier, statistically substantiating anecdotal evidence of scaling limitations. Interestingly, the evidence does not support institutional theory very well. The interview narratives constantly said that agile adoption was motivated by the need to compete and the need to perform, not by mimetic or coercive isomorphism.

TABLE 3
THEORETICAL VALIDATION MATRIX

Theory	Supported	New insight	Evidence source
Ambidexterity Theory	Partially	Cultural ambidexterity precedes structural	SEM analysis ($\beta=0.68$**)
Complexity Theory	Yes	Scaling challenges grow non-linearly with team size	Case comparison patterns
Institutional Theory	No	Agile adoption follows mimetic rather than coercive patterns	Interview narratives

The findings contribute to the resolution of certain enduring disputes within the scaling literature. First, in the framework vs contextual adaptation argument [31, 52], the research shows that frameworks are useful for providing structure, but successful firms do a lot of customization. Eighty-two percent of the case firms changed the SAFe or LeSS principles in order to create minimal feasible bureaucracy, put competency frameworks in context, and make measurement systems that may change. Second, the evidence contradicts the focus on strong centralized positions [28] by demonstrating that middle management participation is the most significant predictor of success ($\beta=0.81$, $p<0.001$). Successful initiatives included the establishment of explicit "translator" positions connecting strategic and operational levels, the creation of dual career pathways for agile professionals, and the implementation of middle-up-down transformation procedures [53]. Third, the study makes it clear what technology does: digital tools make it possible to scale, but human dynamics are responsible for 68% of the differences in results. The best technologies added to human contact instead of replacing it, made it easier to see how workflows were linked, and made it easier to collect information asynchronously.

These results have a lot of important real-world effects for companies who are making the switch to agile. First, cultural enablers should be given priority, and a psychological safety rating of 4.2/5 or above should be used as a leading signal of preparedness to scale. Second, the structure should follow the concepts of value-stream alignment, with 7±2 teams each agile release train and a coordination overhead of less than 15%. Third, measurement systems need to find a balance between conventional performance metrics and agile health measurements. They should include leading indications like learning velocity and cultural measures like acceptance of failure.

This study is thorough, but it also recognizes several limits that might lead to further research in the future. The results pertain to post-digital transformation situations, and longitudinal studies monitoring scale development over 5-10 years would provide significant insights into sustainability. The cross-sectoral research, whilst enhancing generalizability, uncovered sector-specific nuances—especially regulatory limitations in healthcare and cultural differences in Asian operations—that need further examination. These constraints

indicate three intriguing research avenues: longitudinal investigations of agile sustainability, cross-cultural analyses of scaling patterns, and the examination of AI-assisted coordination in ultra-scale implementations involving over 100 teams.

In conclusion, this discussion has shown how the study's results engage with fundamental conflicts in the literature, enhance theoretical comprehension, and provide practical recommendations for implementation. The findings indicate that effective scaling requires simultaneous focus on cultural development, structural adaptability, and technology facilitation—a tripartite framework that enhances existing theories while offering distinct implementation strategies.

VI. Conclusions

This study aimed to tackle a significant and enduring issue in agile management: the successful scaling of agile approaches by major multinational businesses while maintaining the fundamental principles of flexibility, creativity, and continuous improvement. Utilizing a meticulous mixed-methods framework that combined a systematic examination of Scopus-indexed literature with a multi-sectoral case study analysis, this research delivers a thorough and evidence-based solution. The results together indicate that effective scaling is not a linear, prescriptive process but rather a dynamic and interconnected interaction of cultural, structural, and technical adjustments. The conclusions summarize the main findings, explain how they add to theory and practice, point out the study's limits, and suggest important areas for further research.

The analysis substantiates that the scaling of agile techniques signifies a qualitative transformation in management paradigms, rather than a simply quantitative augmentation in the number of teams [54]. The major idea that comes out is that paradoxical integration is necessary—the capacity to keep forces that appear to be at odds with each other in a constructive tension. High-performing businesses effectively preserved team-level autonomy while instituting minimum, facilitating corporate guidelines, therefore opposing the complex structure of prescriptive frameworks. Moreover, the scaling process exhibited an emerging, progressive pattern [55], whereby cultural preparation, shown by elevated levels of psychological safety, was a vital requirement for effective structural transformation. This discovery questions implementation approaches that emphasize procedure at the expense of individuals. Finally, the function of technology was clearly defined; digital tools served as potent facilitators of coordination and knowledge retention, yet proved inadequate in supplanting the fundamental human elements of collaboration and leadership, thereby enhancing and broadening the emphasis on ambidextrous leadership identified in previous studies [5, 6].

This paper makes three important theoretical contributions. First, it greatly broadens ambidexterity theory [48, 49] by viewing cultural, structural, and technological components not as sequential phases but as co-evolving and linked aspects. The empirical evidence strongly demonstrates that these aspects develop synergistically, with cultural roots enabling structural modifications ($\beta=0.71$, $p<0.001$). Second, the findings clarifies a significant uncertainty in the literature about the site of scaling agency. Prior research has focused on either top-down leadership [34] or team-level practices [19, 20]; however, this study identifies mid-level managers as the essential translational layer that reconciles strategic alignment with operational agility, a discovery that carries significant ramifications for organizational design theory. Third, it quantitatively validates complexity theory, clearly showing that coordination overhead rises in a non-linear fashion, negating agile advantages beyond a threshold of 7±2 teams per value stream ($R^2=0.89$). This shifts from anecdotal evidence to a quantifiable limit for scaling.

This research offers practitioners a diagnostic paradigm based on factual standards rather than qualitative recommendations. The study provides actionable metrics, such as a psychological safety threshold (>4.2/5) that predicts a 3.2x faster scaling velocity ($p<0.01$), a structural benchmark for value-stream-aligned teams to keep coordination overhead below 15%, and a validated phased implementation strategy (assess → experiment → scale) that lowered transformation failure rates by 41% in the cases studied. These evidence-based prescriptions clearly address the "how" that is typically omitted in agile scaling literature, giving leaders a clear path to follow for evaluation and action.

This study recognizes its limits, which provide promising avenues for further investigation. The temporal breadth of the case studies, although offering detailed snapshots, indicates the need for longitudinal research to monitor the evolution of scaling patterns and obstacles from early adoption (0–2 years) to sustained practice (5+ years). The cross-sectoral investigation, including healthcare and IT, unveiled compelling cultural subtleties, notably indicating that collectivist cultural frameworks, prevalent in several Asian nations, may enable unique scaling routes in contrast to Western individualistic models. This necessitates focused cross-cultural comparative investigations. Finally, the growing importance of AI opens up a new area of research: the modern society needs to find out whether Large Language Models (LLMs) and AI-enhanced tools may help lower the coordination costs that make it hard for ultra-large teams (100 or more) to be agile.

Ultimately, this research determines that the key to scalable agility is not in the rigid implementation of a framework, but in an organization's ability to achieve contextualized synthesis. To really scale, you need to change your strategy to match the company's specific cultural, structural, and technical needs, not the other way around. This research integrates macro-level strategy with micro-level practices through comprehensive mixed methods, offering a cohesive and academically rigorous perspective that enhances scholarly discourse and empowers organizations to manage

the complexities of transformation, thereby ensuring sustained competitiveness in an increasingly dynamic global landscape.

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