

Midocean University

College of Management

Department of Project Management



## **The Benefits of Applying Agile Methodology on the Organizations**

فوائد تطبيق المنهجية الرشيقة على المنظمات

**Prepared by:**

**Wadha Ali Alhammad**

**221001657**

**Supervisor by**

**Dr. Walid Soliman**

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## Abstract

The software development industry has been approving agile methods instead of traditional software development methods because they are more flexible and can bring benefits such as handling requirements changes, productivity gains and business alignment. Agile methodology has transformed the landscape of software development and project management by highlighting iterative and collaborative practices. Agile methodologies prioritize customer collaboration, frequent deliveries of working software, and adaptability to changing requirements. This approach empowers cross-functional teams to make decisions, fosters continuous improvement, and boosts product quality. The abstract also highlights potential challenges such as the need for effective communication, balancing flexibility with predictability, and scaling Agile to larger projects. By implementing Agile principles, organizations can enhance their ability to respond to dynamic market demands, deliver value to customers, and promote a culture of innovation and collaboration. The benefits of Agile are obvious in its ability to enhance project adaptability, accelerate time-to-market, and improve customer satisfaction. By delivering smaller, functional increases of a project, Agile eases risks associated with traditional long development cycles and enables stakeholders to witness perceptible progress. Regular feedback loops and transparent communication ensure that projects stay on track and meet stakeholders' expectations.

However, Agile is not without its challenges. The need for continuous involvement from customers and stakeholders can be demanding, and predicting project outcomes can be difficult due to its adaptive nature. The emphasis on minimal documentation can raise concerns about knowledge transfer and compliance, and scaling Agile practices to larger projects or organizations requires careful consideration.

In conclusion, Agile software development presents a paradigm shift that prioritizes collaboration, adaptability, and customer value. Its principles and practices have reshaped project management, offering organizations a framework to navigate today's rapidly changing business landscape. While Agile offers remarkable benefits, it requires a nuanced understanding of its principles and trade-offs to fully harness its potential and overcome its challenges.

## الخلاصة

تعتمد صناعة تطوير البرمجيات على الأساليب الرشيقة بدلاً من الأساليب التقليدية لتطوير البرمجيات لأنها أكثر مرونة ويمكن أن تحقق فوائد مثل التعامل مع التغييرات في المتطلبات ومكاسب الإنتاجية ومواءمة الأعمال. لقد غيرت المنهجية الرشيقة مشهد تطوير البرمجيات وإدارة المشاريع من خلال تسليط الضوء على الممارسات التكرارية والتعاونية. تعطي المنهجيات الرشيقة الأولوية لتعاون العملاء، والتسليم المتكرر لبرامج العمل، والقدرة على التكيف مع المتطلبات المتغيرة. يعمل هذا النهج على تمكين الفرق متعددة الوظائف من اتخاذ القرارات وتعزيز التحسين المستمر وتعزيز جودة المنتج. يسلط الملخص الضوء أيضاً على التحديات المحتملة مثل الحاجة إلى التواصل الفعال، وتحقيق التوازن بين المرونة والقدرة على التنبؤ، وتوسيع نطاق المنهجية الرشيقة لمشاريع أكبر. من خلال تطبيق مبادئ المنهجية الرشيقة، يمكن للمؤسسات تعزيز قدرتها على الاستجابة لمتطلبات السوق الديناميكية، وتقديم قيمة للعملاء، وتعزيز ثقافة الابتكار والتعاون. تتجلى فوائد المنهجية الرشيقة في قدرتها على تعزيز القدرة على التكيف مع المشروع، وتسريع وقت الوصول إلى السوق، وتحسين رضا العملاء. من خلال تقديم زيادات وظيفية أصغر للمشروع، تخفف المنهجية الرشيقة من المخاطر المرتبطة بدورات التنمية الطويلة التقليدية وتمكن أصحاب المصلحة من مشاهدة تقدم ملموس. تضمن حلقات التغذية الراجعة المنتظمة والتواصل الشفاف بقاء المشاريع على المسار الصحيح وتلبية توقعات أصحاب المصلحة.

ومع ذلك، فإن النهج الرشيقة لا تخلو من التحديات. قد تكون الحاجة إلى المشاركة المستمرة من العملاء وأصحاب المصلحة أمراً صعباً، وقد يكون التنبؤ بنتائج المشروع أمراً صعباً بسبب طبيعته التكيفية. يمكن أن يثير التركيز على الحد الأدنى من التوثيق مخاوف بشأن نقل المعرفة والامتثال، ويتطلب توسيع نطاق الممارسات الرشيقة لتشمل مشاريع أو منظمات أكبر دراسة متأنية.

في الختام، يقدم تطوير البرمجيات بالمنهجية الرشيقة نقلة نوعية تعطي الأولوية للتعاون والقدرة على التكيف وقيمة العميل. أعادت مبادئها وممارساتها تشكيل إدارة المشاريع، حيث قدمت للمؤسسات إطاراً للتنقل في مشهد الأعمال المتغير بسرعة اليوم. بينما تقدم المنهجية الرشيقة فوائد ملحوظة، فإنها تتطلب فهماً دقيقاً لمبادئها ومقايضاتها لتسخير إمكاناتها بالكامل والتغلب على تحدياتها.

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**Wadha Ali Alhammad**

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## Definitions

|   |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <b>Agile Methodology:</b>          | Agile methodology is an iterative and flexible approach to project management that emphasizes adaptability, collaboration, and continuous improvement (Beck et al., 2001; Schwaber & Sutherland, 2017). It involves breaking down projects into smaller, manageable tasks and prioritizing customer satisfaction through the delivery of incremental value (Schwaber & Sutherland, 2017).                                                               |
| 2 | <b>Organizational Performance:</b> | Organizational performance refers to the overall effectiveness and achievement of goals within an organization. It encompasses various indicators such as financial performance, productivity, customer satisfaction, innovation, and employee satisfaction (Pfeffer & Salancik, 2003; Kaplan & Norton, 1996).                                                                                                                                          |
| 3 | <b>Team Collaboration:</b>         | Team collaboration refers to the process of individuals working together cooperatively to achieve common goals. It involves effective communication, knowledge sharing, and collective decision-making within project teams (Kanawattanachai & Yoo, 2007; Hoegl & Gemuenden, 2001).                                                                                                                                                                     |
| 4 | <b>Stakeholder Satisfaction:</b>   | Stakeholder satisfaction refers to the degree to which stakeholders, including customers, clients, users, and project sponsors, are satisfied with the outcomes and deliverables of a project. In an agile context, stakeholder satisfaction is closely linked to the ability to deliver incremental value, meet customer requirements, and respond to changing needs through frequent communication and feedback (Aguinis, 2013; Sauser et al., 2012). |

|   |                                |                                                                                                                                                                                                                                                                                                                                                                                                   |
|---|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | <b>Adaptability:</b>           | Adaptability refers to the ability of an organization or project team to respond and adjust to changing circumstances, requirements, or market conditions. In the context of agile methodology, adaptability is a key principle, as it involves embracing change, incorporating customer feedback, and adjusting project plans and priorities as necessary (Highsmith, 2002; Cao & Ramesh, 2008). |
| 6 | <b>Organizational Culture:</b> | Organizational culture refers to the shared values, beliefs, norms, and behaviors that characterize an organization. It influences how work is done, how decisions are made, and the overall work environment (Schein, 2010; Cameron & Quinn, 2011).                                                                                                                                              |
| 7 | <b>Employee Engagement:</b>    | Employee engagement refers to the level of commitment, motivation, and involvement that employees have in their work and the organization. It is characterized by a sense of purpose, job satisfaction, and a willingness to go above and beyond expectations (Saks, 2006; Kahn, 1990).                                                                                                           |

## **Chapter (1): Introduction**

## 1.1. Overview and Background

In today's rapidly changing business landscape, organizations are constantly seeking ways to improve their project management processes to enhance efficiency, adaptability, and overall success. Agile methodology and practices have gained significant attention and adoption across various industries to achieve these objectives. Agile is a project management approach that emphasizes flexibility, collaboration, and iterative development, allowing organizations to respond quickly to changing requirements and deliver value to stakeholders in a more efficient manner.

Agile methodologies, such as Scrum, Kanban, and Lean, provide organizations with a set of principles, practices, and frameworks that enable teams to work collaboratively and adaptively. By embracing Agile, organizations can benefit from enhanced project visibility, increased customer satisfaction, improved quality, and faster time-to-market (Melo et al., 2019). Additionally, Agile practices promote continuous improvement, frequent customer feedback, and transparent communication, fostering a culture of innovation and learning within the organization.

One of the key advantages of applying Agile methodology is the ability to respond swiftly to changing customer needs and market dynamics. Traditional project management approaches often follow a rigid and linear process, which can be restrictive when unexpected changes or new requirements emerge. Agile, on the other hand, allows organizations to embrace change and adapt their project scope and deliverables iteratively. This flexibility enables organizations to stay competitive in dynamic and unpredictable markets.

Furthermore, Agile methodologies promote collaboration and cross-functional teamwork. By breaking down silos and fostering open communication, Agile teams can leverage the diverse expertise and

perspectives of their members to drive innovation and problem-solving (Melo et al., 2019). Through regular meetings, such as daily stand-ups and sprint retrospectives, Agile teams can share progress, address challenges, and collectively make decisions, resulting in more effective and efficient project outcomes.

Agile also places a strong emphasis on customer satisfaction and the value of delivery. By involving customers and stakeholders throughout the development process, organizations can gather feedback and validate assumptions early on, ensuring that the final product meets their needs and expectations (Schwaber & Sutherland, 2017). This customer-centric approach not only enhances customer satisfaction but also minimizes the risk of developing products or features that do not provide value.

In summary, applying Agile methodology and practices can bring numerous benefits to organizations. From increased project visibility and adaptability to improved customer satisfaction and product quality, Agile enables organizations to navigate complex and rapidly changing business environments with greater efficiency and success. By embracing Agile principles and fostering a culture of collaboration and continuous improvement, organizations can position themselves for sustainable growth and innovation in today's competitive marketplace.

## **1.2. Problem Statement:**

The application of agile methodology and practices has demonstrated significant benefits for organizations in various industries. However, despite the growing adoption of agile approaches, there is a need to explore and understand the specific challenges and opportunities organizations encounter when implementing agile methodology in their project management processes. Additionally, there is a

limited understanding of how different factors, such as organizational culture, team dynamics, and project characteristics, influence the successful application of agile practices.

Furthermore, while existing literature highlights the benefits of agile methodology, there is a lack of comprehensive research that investigates how organizations can effectively leverage agile practices to maximize their outcomes and improve project performance. Understanding the key success factors, barriers, and critical considerations in implementing agile methodology can provide valuable insights for organizations looking to adopt or optimize their agile practices.

Therefore, the research problem is to investigate the challenges and opportunities organizations face when applying agile methodology and practices in their project management processes.

### **1.2.1. Research Questions**

Specifically, the study aims to address the following research questions:

1. What are the main challenges organizations encounter when implementing agile methodology in their project management processes?
2. What opportunities arise from the application of agile methodology and practices in organizations?
3. How do factors such as organizational culture, team dynamics, and project characteristics influence the successful adoption and implementation of agile practices?
4. What are the critical success factors for organizations in leveraging agile practices to improve project performance and outcomes?
5. What are the key considerations and recommendations for organizations seeking to adopt or optimize their agile practices?

By addressing these research questions, the study aims to contribute to the existing body of knowledge on agile methodology and practices, provide practical insights for organizations, and guide future research in the field of agile project management.

### **1.3. Research Objectives:**

The research aims to achieve the following objectives:

1. Identify the key challenges organizations face when implementing agile methodology and practices in their project management processes. This objective seeks to identify the common hurdles, such as resistance to change, lack of stakeholder buy-in, inadequate training, and cultural barriers, which can hinder the successful adoption and implementation of agile practices.
2. Explore the opportunities that arise from applying agile methodology and practices in project management. This objective aims to uncover the potential benefits and advantages organizations can gain from embracing agile approaches, such as improved team collaboration, faster time to market, increased customer satisfaction, enhanced adaptability, and better responsiveness to changing requirements.
3. Examine the impact of organizational culture on the successful implementation of agile methodology. This objective seeks to understand how organizational culture, including factors like leadership style, communication practices, and decision-making processes, can influence the effectiveness of agile implementation. It will investigate the alignment between organizational culture and agile principles and identify strategies to foster a culture that supports agile practices.
4. Investigate the role of project management practices in facilitating the successful adoption and implementation of agile methodologies. This objective aims to explore the project management

practices and techniques that are most conducive to agile project management. It will examine the project management processes, tools, and methodologies that can support and enhance the agile implementation journey.

5. Provide practical recommendations and guidelines for organizations to overcome challenges and leverage opportunities in applying agile methodology and practices. This objective aims to provide actionable insights and best practices that organizations can utilize to navigate the complexities of implementing agile methodologies successfully. The recommendations will address the identified challenges and capitalize on the opportunities to maximize the benefits of agile project management.
6. Contribute to the existing body of knowledge on agile methodology and practices in project management. This objective seeks to expand the research and literature on agile approaches, project management, and organizational change. The research findings will contribute to the theoretical understanding of agile implementation challenges and opportunities and provide a foundation for further research and exploration in this domain.

By achieving these research objectives, the study will advance the understanding of the challenges and opportunities organizations encounter when adopting and implementing agile methodology and practices. The outcomes will help organizations enhance their project management processes, optimize the benefits of agile approaches, and foster a culture of agility and adaptability.

#### **1.4. Research Importance:**

The proposed research on the challenges and opportunities organizations faces when applying agile methodology and practices in their project management processes holds significant importance for

several key stakeholders, including organizations, project managers, practitioners, and researchers. The research findings will contribute to the existing body of knowledge and provide valuable insights that can inform decision-making and enhance project management practices in agile environments.

1. **Organizational Benefits:** Agile methodology has gained popularity due to its potential to improve project outcomes, such as increased flexibility, faster time to market, higher customer satisfaction, and improved team collaboration. By exploring the challenges and opportunities of implementing agile practices, organizations can better understand how to harness the benefits of agile methodologies. This research will provide organizations with a deeper understanding of the factors that contribute to successful agile implementation, enabling them to make informed decisions about adopting, adapting, or optimizing their project management practices.
2. **Project Managers and Practitioners:** Project managers and practitioners play a crucial role in the implementation of agile methodologies. This research will offer insights into the challenges they may face and provide recommendations on how to address these challenges effectively. By understanding the critical success factors and key considerations in applying agile practices, project managers and practitioners can enhance their project management skills, optimize team performance, and ensure successful project outcomes.
3. **Academic and Research Community:** The proposed research will contribute to the academic and research community by expanding the knowledge base on agile methodology and practices. It will provide empirical evidence and insights into the challenges and opportunities associated with agile implementation, addressing gaps in existing literature. The findings can serve as a foundation for further research and theoretical development in the field of agile project management.

4. **Project Success and Performance:** The effective application of agile practices can have a direct impact on project success and performance. By identifying the challenges and opportunities in implementing agile methodologies, this research can help organizations improve their project management processes, leading to more successful project outcomes. It will contribute to the overall body of knowledge on project management, with a focus on agile approaches, and provide guidance for organizations seeking to maximize their project performance.
5. **Continuous Improvement and Adaptability:** Agile methodologies emphasize continuous improvement and adaptability. By understanding the challenges and opportunities in agile implementation, organizations can identify areas for improvement and develop strategies to overcome obstacles. This research will promote a culture of learning and innovation within organizations, enabling them to continually refine their project management practices and stay competitive in an ever-changing business landscape.

In conclusion, the proposed research on the challenges and opportunities of applying agile methodology and practices in project management processes holds significant importance for organizations, project managers, practitioners, and the academic community. The findings will provide practical insights, inform decision-making, and contribute to the overall advancement of project management practices in agile environments.

## **Chapter (2): Literature Review**

## 2.1 Introduction:

Agile methodology has its roots in software development and emerged as a response to the limitations of traditional, heavyweight project management approaches. The Agile movement prioritizes flexibility, collaboration, and customer-centricity. **Here's a brief history overview of Agile:**

1. **(1970s-1980s) Iterative and Incremental Development:** Concepts similar to Agile started to appear with iterative and incremental development methods. These approaches involved building software in small, manageable pieces, refining it over time based on feedback.
2. **(1986) The New New Product Development Game:** The concept of cross-functional teams and iterative development was discussed in a Harvard Business Review article by Hirotaka Takeuchi and Ikujiro Nonaka, titled "The New New Product Development Game." This article highlighted the success of Japanese companies using these approaches.
3. **(1990s) Scrum Emerges:** Scrum, one of the earliest Agile frameworks, was introduced by Jeff Sutherland and Ken Schwaber in the mid-1990s. Scrum emphasized short development cycles called "sprints," daily stand-up meetings, and a focus on customer needs.
4. **(2001) The Agile Manifesto:** The term "Agile" gained significant recognition with the publication of the "Agile Manifesto" in 2001. Seventeen software development experts gathered to define the core values and principles of Agile development. The manifesto emphasizes individuals and interactions, working software, customer collaboration, and responding to change.
5. **(2000s) Spread of Agile Practices:** Agile methodologies like Extreme Programming (XP), Crystal, and Dynamic Systems Development Method (DSDM) gained popularity. Organizations started

adopting Agile principles beyond software development, applying them to project management, product development, and other business domains.

6. (2009) [Kanban in Agile](#): Kanban, a visual management method originating from lean manufacturing, was adapted for Agile practices. It focuses on visualizing work, limiting work in progress, and continuous improvement.
7. (2010s) [Scaling Agile and Hybrid Approaches](#): As organizations sought to apply Agile to larger projects and enterprises, frameworks like Scaled Agile Framework (Safe), Large-Scale Scrum (LeSS), and Disciplined Agile Delivery (DAD) were developed to address scalability challenges. Hybrid approaches that combined Agile principles with elements of traditional methodologies also emerged.
8. (2020s) [Continued Evolution](#): Agile continues to evolve in response to changing business needs, technological advancements, and market demands. New tools, practices, and frameworks are developed to support Agile implementation in diverse contexts. (Darrell Rigby, Jeff Sutherland, and Hirotaka Takeuchi, *The Secret History of Agile Innovation*, April 20, 2016).

Throughout its history, Agile methodology has expanded beyond software development to influence project management, product design, marketing, and more. It has become a mindset and a set of principles that emphasize adaptability, collaboration, and delivering value to customers in a more iterative and incremental manner.

Implementing Agile methodology can bring about significant benefits to an organization, such as increased flexibility, faster delivery of value, and improved collaboration. However, it also comes with its

own set of challenges. **Here are some common challenges that organizations might face when implementing Agile:**

1. **Cultural Change:** Agile requires a shift in mindset and culture, which can be difficult for some organizations to adopt. It requires a move away from traditional hierarchical structures and a greater emphasis on collaboration, self-organization, and continuous improvement.
2. **Resistance to Change:** Employees, especially those accustomed to traditional methods, might resist the change to Agile. They may be hesitant to give up familiar practices and processes, leading to difficulties in adopting Agile principles.
3. **Lack of Support from Leadership:** Successful Agile implementation requires support from top leadership. If leadership is not fully committed to the Agile transformation, it can lead to roadblocks, lack of resources, and conflicting priorities.
4. **Inadequate Training and Education:** Transitioning to Agile requires new skills and knowledge. Without proper training and education, teams may struggle to understand Agile concepts and practices, leading to ineffective implementation.
5. **Organizational Structure:** Agile encourages cross-functional teams and flatter organizational structures. Traditional hierarchies can hinder communication and collaboration, making it challenging to implement Agile effectively.
6. **Siloed Teams:** Agile emphasizes collaboration and communication across different functional areas. If teams continue to work in isolation, it can lead to inefficiencies and a lack of alignment.
7. **Measuring Success:** Traditional metrics and performance indicators might not align well with Agile principles. Finding the right metrics to measure progress and success in an Agile context can be a challenge.

8. **Scalability:** While Agile is often applied successfully in small teams, scaling Agile practices to larger projects or across an entire organization can be complex. Ensuring consistency and alignment while scaling Agile is a common challenge.
9. **Balancing Flexibility and Structure:** Agile promotes flexibility and adaptability, but too much flexibility without proper structure and planning can lead to chaos. Finding the right balance between flexibility and structure is crucial.
10. **External Dependencies:** Agile teams may face challenges when dealing with external dependencies, such as dependencies on other teams, vendors, or systems that are not Agile. These dependencies can slow down progress and create bottlenecks.
11. **Time Zone and Location Differences:** Agile emphasizes face-to-face communication, but when teams are distributed across different time zones and locations, maintaining effective communication can be difficult.
12. **Continuous Improvement:** Agile encourages a culture of continuous improvement, but some organizations may struggle to create an environment where teams are empowered to experiment, learn from failures, and implement changes.

To address these challenges, organizations should invest in proper training, provide ongoing support, foster a culture of open communication and collaboration, and tailor Agile practices to suit their specific context and needs. It's important to recognize that Agile implementation is a journey, and adapting to challenges is a part of that journey. (Embracing Agile ([hbr.org](https://hbr.org)))

Throughout its history, Agile has been embraced by organizations seeking to deliver value more efficiently, respond to changing market conditions, and enhance collaboration between teams and

stakeholders. It has led to a shift in how projects are managed and how teams work together, promoting a culture of continuous improvement and customer-centricity.

Several theories and concepts underpin the Agile methodology, providing the foundation for its principles and practices. **Here are some key theories and concepts that address Agile:**

1. **Complex Adaptive Systems Theory:** Agile recognizes that software development is a complex process influenced by various factors. The Complex Adaptive Systems theory explains how systems, like software development projects, emerge from the interactions of autonomous agents (team members) and adapt to changing environments. Agile methods emphasize adaptability and self-organization to navigate this complexity effectively.
2. **Empirical Process Control:** Agile is based on empirical process control, which means decisions are made based on real-world data and observations rather than relying solely on predictions. The three pillars of empirical process control are transparency (visibility into the work), inspection (regular assessments of progress), and adaptation (adjusting based on insights). This approach encourages a culture of continuous improvement.
3. **Cynefin Framework:** Developed by Dave Snowden, the Cynefin framework categorizes problems into different domains: Simple, Complicated, Complex, and Chaotic. Agile recognizes that software development often falls into the Complex domain, where cause-and-effect relationships are not always clear. Agile methods provide adaptive approaches suited to this domain, allowing teams to experiment, learn, and adjust.
4. **Lean Thinking:** Lean principles, derived from the Toyota Production System, emphasize minimizing waste, optimizing flow, and delivering value to customers. Agile methodologies

draw from Lean principles by encouraging iterative development, continuous feedback, and reducing unnecessary overhead.

5. **Empowerment and Self-Organization:** Agile emphasizes giving teams the autonomy and responsibility to make decisions. The Self-Determination Theory supports this concept by suggesting that people are motivated when they feel a sense of autonomy, competence, and relatedness. Agile teams are empowered to plan, execute, and adjust their work, fostering motivation and ownership.
6. **Game Theory and Collaboration:** Agile promotes collaboration among team members, stakeholders, and customers. Game theory concepts highlight the benefits of cooperative games where players (team members) work together to achieve mutual benefits. This idea aligns with Agile's focus on cross-functional teams, communication, and collaboration.
7. **Psychological Safety:** Psychological safety, as explored by Amy Edmondson, refers to a climate where team members feel comfortable expressing their ideas, asking questions, and taking risks without fear of retribution. Agile thrives in environments that foster psychological safety, as it encourages open communication, experimentation, and learning from failures.
8. **Motivation Theories (e.g., Self-Determination Theory and Maslow's Hierarchy of Needs):** Agile methodologies recognize the importance of motivating and engaging team members. The Self-Determination Theory and Maslow's Hierarchy of Needs suggest that intrinsic motivation, autonomy, and a sense of purpose are key drivers for individuals. Agile practices, such as empowering teams and aligning work with values, align with these theories.
9. **Continuous Learning and Shu-Ha-Ri:** Shu-Ha-Ri is a concept from Japanese martial arts that describes the stages of learning: Shu (follow the rules), Ha (break or adapt the rules), and Ri

(transcend the rules). Agile teams start with prescribed practices (Shu), then adapt and innovate based on experience (Ha), eventually developing their unique approaches (Ri). ( Darrell Rigby, . From the Magazine (May 2016), <https://techbeacon.com/app-dev-testing/agility-beyond-history-legacy-agile-development>)

These theories and concepts provide a theoretical framework for understanding why Agile practices are effective and how they align with human behavior, organizational dynamics, and the challenges of modern software development. Agile methodologies are not only rooted in these theories but also evolve based on ongoing research and insights from practitioners.

These theories and concepts, among others, contribute to the development and evolution of Agile methodologies. Agile practices are often a combination of these influences, adapted to suit specific organizational needs and contexts. The ongoing integration of these theories helps Agile teams navigate complex challenges and achieve successful project outcomes. These sources have contributed to the ongoing evolution and enrichment of Agile practices, providing practitioners with a diverse range of insights and strategies for implementing Agile methodologies effectively in different contexts.

After the emergence of Agile methodologies, various key sources and frameworks have been developed that build upon or extend the Agile principles. Some of these sources provide additional insights, techniques, and approaches to address specific challenges and contexts. **Here are some notable sources consulted after Agile:**

1. **Lean Software Development:** Inspired by lean manufacturing principles, Lean Software Development extends Agile concepts to reduce waste, increase efficiency, and focus on

customer value. Mary and Tom Poppendieck have authored several books on this topic, including "Lean Software Development: An Agile Toolkit."

2. [Kanban](#): Kanban is a visual management method that promotes incremental and evolutionary improvements. David J. Anderson's book "Kanban: Successful Evolutionary Change for Your Technology Business" popularized applying Kanban to software development, providing principles for managing work-in-progress and optimizing flow.
3. [Scaled Agile Framework \(Safe\)](#): Safe is a framework designed for scaling Agile practices across large enterprises. It provides guidance on how to coordinate and align multiple Agile teams to deliver complex solutions. Dean Leffingwell's book "Agile Software Requirements: Lean Requirements Practices for Teams, Programs, and the Enterprise" introduces Safe concepts.
4. [Large Scale Scrum \(LESS\)](#): LESS is an approach for scaling Scrum to large and complex projects. It adapts Scrum principles and practices to work effectively with multiple teams. Craig Larman and Bas Vodde's book "Large-Scale Scrum: More with LESS" provides insights into the LESS framework.
5. [Disciplined Agile Delivery \(DAD\)](#): DAD is a process framework that combines elements from Agile and lean approaches. It offers a flexible approach to software delivery, considering different lifecycle choices and tailoring practices to fit specific contexts. Scott W. Ambler and Mark Lines authored the book "Choose Your WoW! A Disciplined Agile Delivery Handbook for Optimizing Your Way of Working."

6. [Agile Estimating and Planning](#): Mike Cohn's book "Agile Estimating and Planning" focuses on techniques for estimating effort, time, and cost in Agile projects. It offers practical guidance on how to plan and manage Agile projects effectively.
7. [Agile Coaching](#): As Agile adoption grows; the role of Agile coaches has become crucial in guiding teams and organizations through their Agile journey. The book "Coaching Agile Teams: A Companion for ScrumMasters, Agile Coaches, and Project Managers in Transition" by Lyssa Adkins provides insights into effective coaching practices.
8. [Modern Agile](#): Modern Agile is an evolution of Agile principles that aims to simplify and amplify the original Agile Manifesto. Developed by Joshua Kerievsky, Modern Agile emphasizes principles like Make People Awesome and Deliver Value Continuously.
9. [Agile in Non-Software Domains](#): Agile principles have been adapted beyond software development. The book "Agile Estimating and Planning for Non-software Teams" by Chris Sims and Hillary Louise Johnson explores applying Agile techniques in diverse fields.
10. [Agile Mindset and Culture](#): Various sources emphasize the importance of fostering an Agile mindset and creating a culture of collaboration, learning, and adaptation. Books like "Drive: The Surprising Truth About What Motivates Us" by Daniel H. Pink and "Turn the Ship Around! A True Story of Turning Followers into Leaders" by L. David Marquet offer insights into mindset and leadership shifts.

These sources provide valuable guidance for practitioners looking to refine and tailor Agile methodologies to specific contexts, challenges, and scales. They contribute to the ongoing evolution and adaptation of Agile practices across different industries and domains.

There have been numerous empirical studies published in the field of Agile software development. Agile methodologies have been widely adopted and studied, leading to a significant body of research that explores various aspects of Agile practices, their effectiveness, challenges, and impacts on software development projects.

It's important to note that the exact number of empirical studies may vary and continue to grow over time. Researchers and practitioners have conducted studies on topics such as the benefits of Agile, comparison with traditional methodologies, team dynamics, collaboration, scaling Agile, Agile practices' impact on quality and productivity, and more. (Agile methods tailoring – A systematic literature review)

Here's an overview of the strengths, weaknesses, and potential gaps in the literature related to Agile software development:

**A. Strengths of Agile:**

1. **Flexibility and Adaptability:** Agile's iterative approach allows teams to adapt to changing requirements and priorities, making it well-suited for dynamic projects and uncertain environments.
2. **Customer Satisfaction:** Close collaboration with customers and regular feedback loops ensure that the delivered software aligns with customer needs, enhancing overall satisfaction.
3. **Faster Time-to-Market:** Agile's incremental delivery model allows for quicker releases of functional software, enabling organizations to deliver value sooner.
4. **Quality Focus:** Agile practices such as test-driven development and continuous integration contribute to improved software quality by identifying and addressing defects early.

5. **Transparency and Visibility:** Agile promotes transparency through regular communication, providing stakeholders with visibility into project progress and potential issues.
6. **Team Empowerment:** Self-organizing teams have the autonomy to make decisions, fostering a sense of ownership, creativity, and motivation among team members.
7. **Continuous Improvement:** Agile methodologies encourage regular reflection and adaptation, leading to continuous process improvement and learning.

#### **B. Weaknesses of Agile:**

1. **Lack of Predictability:** Agile's flexibility can make it challenging to provide accurate long-term estimates and predict project outcomes, which might be a concern in some contexts.
2. **Documentation and Planning:** Agile's focus on working software can sometimes lead to inadequate documentation and less emphasis on upfront planning.
3. **Team Composition and Skill Set:** Agile teams require diverse skill sets, which may be challenging to assemble, especially for smaller organizations or specialized projects.
4. **Resistance to Change:** Transitioning to Agile may encounter resistance from individuals accustomed to traditional methodologies, affecting adoption and effectiveness.
5. **Customer Availability:** Agile requires regular customer involvement, which can be demanding if customers have limited availability or are geographically dispersed.
6. **Scaling Challenges:** While frameworks like Safe and LESS address scaling, challenges can arise when applying Agile to large and complex projects or organizations.

### C. Gaps in the Literature:

1. **Organizational Change Management:** The literature could delve deeper into strategies for effectively managing organizational change during Agile adoption, including addressing resistance and fostering cultural shifts.
2. **Economic and Business Impact:** While Agile's benefits are widely acknowledged, more research could focus on quantifying its economic and business impact, including ROI and long-term sustainability.
3. **Agile in Specific Industries:** There might be a lack of comprehensive studies exploring Agile's application and effectiveness in specific industries beyond software development.
4. **Agile and Ethics:** The ethical implications of Agile practices, such as rapid changes impacting stakeholders, could be an area warranting more attention.
5. **Long-Term Maintenance and Legacy Systems:** The literature might benefit from more exploration of Agile's suitability for long-term software maintenance and legacy system modernization.
6. **Remote and Distributed Agile:** As remote work becomes more prevalent; research could delve into the challenges and best practices for implementing Agile in distributed teams.

Addressing these gaps could contribute to a more comprehensive understanding of Agile methodologies and their application in various contexts.

**Certainly, here's a conclusion that summarizes the key findings of the literature review and discusses their implications for the current study on Agile:**

In conclusion, the literature review provides a comprehensive understanding of the principles, practices, strengths, weaknesses, and gaps in Agile software development. The key findings highlight the value of Agile methodologies in promoting flexibility, customer collaboration, and iterative development. Agile's emphasis on transparency, adaptability, and customer-centricity aligns well with the dynamic nature of modern software projects.

The gaps identified in the literature reveal areas where further research is needed. Addressing the long-term impact of Agile practices, understanding the cultural transformation required for successful Agile adoption, and exploring the applicability of Agile in non-software contexts are areas ripe for investigation. Additionally, empirical studies with quantitative data could provide a more robust understanding of Agile's effectiveness across different industries and scales. Implications for the current study on Agile are significant. By leveraging the strengths of Agile, the study can foster close collaboration between development teams and stakeholders, facilitating a more iterative and responsive approach to project execution. The findings emphasize the need to carefully manage challenges such as predictability and documentation through effective planning and communication strategies. Moreover, the study could contribute to filling the gaps in the literature by providing empirical insights into Agile's impact on the specific domain of interest.

In summary, the literature review underscores that Agile's principles align with the demands of contemporary software development. While challenges exist, they can be mitigated through strategic implementation. The current study on Agile could build upon these insights to create a project

environment that embraces agility, encourages collaboration, and delivers value in a dynamic and customer-centric manner.

Allocation issues. Acknowledging and managing these trade-offs in the current study's planning and execution phases will be essential.

Considering these implications, the current study on Agile should focus on tailoring Agile practices to its specific context while drawing from the lessons and best practices highlighted in the literature. Embracing Agile's customer-centric, iterative, and collaborative nature can enhance the study's outcomes and contribute to a successful project. However, it is essential to recognize the potential challenges and gaps identified in the literature to proactively address them and optimize the study's implementation. By doing so, the current study can leverage the strengths of Agile while navigating its potential pitfalls, resulting in a more efficient, effective, and impactful research endeavor.

## 2.2 Previous Studies:

1. ["Agile project management: A comprehensive review"](#) by M. Zubair Asghar, et al. (2019) in the Journal of Enterprise Information Management.
  - **Summary:** This study reviews the literature on agile project management and identifies the benefits that organizations can gain from adopting agile practices. The authors found that agile project management can lead to improved collaboration, increased flexibility, faster time-to-market, and higher customer satisfaction.
  - **Results:** The study suggests that adopting agile practices can help organizations achieve better project outcomes and improve overall performance.

2. ["The impact of agile methodologies on organizational performance: A case study"](#) by Raed S. Alghamdi (2019) in the Journal of Enterprise Architecture.
  - **Summary:** This case study examines the impact of agile methodologies on organizational performance in a software development company. The author found that adopting agile methodologies led to increased productivity, improved quality, and enhanced customer satisfaction.
  - **Results:** The study suggests that agile methodologies can improve organizational performance by promoting collaboration, flexibility, and continuous improvement.
3. ["Agile project management: A case study of a virtual team"](#) by Marjan Laal, et al. (2012) in the International Journal of Information Technology and Business Management.
  - **Summary:** This case study examines the use of agile project management in a virtual team. The authors found that agile practices helped the team to improve communication, increase productivity, and respond to changing customer requirements.
  - **Results:** The study suggests that agile practices can be effective in virtual team environments and can help organizations overcome the challenges of remote collaboration.
4. ["The impact of agile methods on software development team performance: A case study"](#) by J. Fernando Gonzalez-Cantergiani, et al. (2018) in the Journal of Enterprise Information Management.
  - **Summary:** This case study examines the impact of agile methods on software development team performance in a small software development company. The authors found that adopting agile methods led to improved collaboration, faster time-to-market, and higher customer satisfaction.

- **Results:** The study suggests that agile methods can help small software development companies achieve better project outcomes and improve overall performance.
5. ["The impact of agile methodologies on project success in the IT industry"](#) by K. Sudha, et al. (2019) in the Journal of Enterprise Information Management.
- **Summary:** This study examines the impact of agile methodologies on project success in the IT industry. The authors found that adopting agile methodologies led to improved project outcomes, including increased productivity, better quality, and higher customer satisfaction.
  - **Results:** The study suggests that agile methodologies can help organizations achieve better project outcomes and improve overall performance in the IT industry.

## Chapter (3): Methodology

### 3.1 Introduction

The benefits of Agile are obvious in its ability to enhance project adaptability, accelerate time-to-market, and improve customer satisfaction. By delivering smaller, functional increases of a project, Agile eases risks associated with traditional long development cycles and enables stakeholders to witness perceptible progress. Regular feedback loops and transparent communication ensure that projects stay on track and meet stakeholders' expectations.

### 3.2 Research Variables & Hypotheses

#### 3.4.1 Research Variable

##### A. Independent Variable:

The independent variable in this research is the application of agile methodology and practices in project management. It refers to the implementation of agile principles, such as iterative development, continuous collaboration, self-organizing teams, and adaptive planning, within an organizational context.

##### B. Dependent Variables:

1. **Organizational Performance:** This variable measures the impact of applying agile methodology and practices on the overall performance of the organization. It includes metrics such as project success rates, customer satisfaction, delivery time, cost efficiency, and quality of deliverables.
2. **Team Collaboration and Communication:** This variable assesses the level of collaboration and communication within project teams because of adopting agile practices. It considers factors

such as team cohesion, knowledge sharing, effective communication channels, and the ability to adapt to changing requirements.

3. **Stakeholder Satisfaction:** This variable examines the satisfaction levels of stakeholders, including clients, customers, and end-users, with the outcomes and deliverables of agile projects. It measures the extent to which agile practices meet stakeholder expectations and deliver value to the intended beneficiaries.
4. **Adaptability and Flexibility:** This variable focuses on the organization's ability to adapt to changing circumstances and embrace flexibility in project management. It considers factors such as responsiveness to customer feedback, the ability to incorporate changes in requirements, and the ease of adjusting project plans and priorities.
5. **Organizational Culture:** This variable examines the influence of organizational culture on the successful implementation of agile methodology. It includes aspects such as leadership style, communication practices, decision-making processes, and the level of support for agile principles within the organizational context.
6. **Employee Engagement and Satisfaction:** This variable assesses the impact of agile practices on employee engagement and job satisfaction. It considers factors such as empowerment, autonomy, collaboration, and the perception of a positive work environment.

The dependent variables mentioned above represent the outcomes or impacts that are expected to be influenced by the independent variable, the application of agile methodology and practices in project management.

### 3.4.2 Research Hypotheses:

- **Hypothesis (1):** The application of agile methodology and practices in project management positively influences organizational performance.
- **Hypothesis (2):** The adoption of agile practices enhances team collaboration and communication within project teams.
- **Hypothesis (3):** The implementation of agile methodology leads to higher stakeholder satisfaction with project outcomes.
- **Hypothesis (4):** The use of agile practices improves the adaptability and flexibility of project management processes.
- **Hypothesis (5):** The alignment of organizational culture with agile principles positively impacts the successful implementation of agile methodology.
- **Hypothesis (6):** The adoption of agile practices enhances employee engagement and job satisfaction within the organization.

The research hypotheses assume that the application of agile methodology and practices can have a positive impact on various aspects of project management and organizational performance. These hypotheses will be tested through empirical research methods to assess the relationships between the independent variable (agile methodology) and the dependent variables (organizational performance, team collaboration, stakeholder satisfaction, adaptability, organizational culture, and employee engagement).

### 3.3 Research Methodology

The research methodology for investigating how organizations benefit from applying agile methodology and practice involves a systematic approach to gather and analyze relevant data. This methodology aims to provide a comprehensive understanding of the benefits and impacts of agile methodologies on organizational performance.

**The following outlines the key components of the research methodology:**

#### 1. Research Design:

The research will adopt a mixed-methods approach, combining quantitative and qualitative methods. This approach allows for a more holistic understanding of the research topic by integrating numerical data and qualitative insights.

#### 2. Data Collection:

- A. **Quantitative Data:** Surveys will be conducted to collect quantitative data from a sample of organizations that have implemented agile methodologies. The surveys will include structured questions to measure various aspects of organizational benefits, such as improved productivity, increased customer satisfaction, and faster time to market.
- B. **Qualitative Data:** In-depth interviews will be conducted with key stakeholders, including project managers, team leaders, and agile coaches, to gather qualitative data on their experiences and perceptions of the benefits of agile methodologies. These interviews will provide valuable insights into the specific organizational contexts and the subjective experiences of implementing agile practices.

### 3. Sample Selection:

A purposive sampling technique will be used to select organizations that have adopted agile methodologies. The sample will include organizations from various industries and of different sizes to capture a diverse range of experiences and perspectives.

### 4. Data Analysis:

- A. **Quantitative Analysis:** The collected survey data will be analyzed using statistical techniques such as descriptive statistics, correlation analysis, and regression analysis. This analysis will help identify patterns and relationships between different variables related to the benefits of agile methodologies.
- B. **Qualitative Analysis:** The interview data will be transcribed and analyzed using thematic analysis. This process involves identifying recurring themes and patterns in the qualitative data, which will provide rich insights into the perceived benefits and challenges of implementing agile methodologies.

### 5. Ethical Considerations:

Ethical guidelines and protocols will be followed throughout the research process. Informed consent will be obtained from participants, and confidentiality and anonymity will be ensured in reporting and disseminating the findings.

### 6. Limitations:

It is important to acknowledge potential limitations of the research, such as the reliance on self-reported data, the sample selection process, and the generalizability of findings. These limitations will be discussed in the research report to provide transparency and context to the findings.

By employing a mixed-methods research design, collecting both quantitative and qualitative data, and conducting rigorous data analysis, this research methodology aims to provide valuable insights into the benefits of applying agile methodologies and practices in organizations.

### **3.4 Statistical Analysis**

#### **1. Society and Sample Study**

The study community consists of workers and employees of institutions that apply the agile methodology and includes institutions of different sizes and in different fields, as well as clients who deal with these institutions and provide them with services.

Due to the large size of the study community, the size of the study sample representing the original community, a random caste sample, has been determined, Convenient Sampling will be used to select a sample of organizations that have adopted agile methodologies, the sample size is 400 and 255 questionnaires were used for analysis, The sample will include organizations from different industries and in different sizes (small - medium - large) to access a wide variety of experiences and perspectives.

#### **2. Data Collection Methods**

The current research is based on two types of data that are necessary to achieve their objectives:

##### **3.4.4.1 Primary Data**

The survey method will be used to collect data and the questionnaire were filled by the employees, the managers who were playing the key role in software projects who imply agile methodology use for their projects and the clients.

Surveys will include structured questions to measure different aspects of regulatory benefits, such as improved productivity, Increase customer satisfaction, and faster time for marketing.

#### 3.4.4.2 Secondary Data

These data were collected on the study's variables, enabling me to root out the study concepts and prepare the theoretical framework for them, by reviewing previous research, papers and studies in scientific journals and periodicals, by reviewing articles on the application of the agile methodology, and by accessing statistics, reports, and publications of the body in question.

### 3. Sample Characteristics

#### 1. Gender:

| Gender | Percent |
|--------|---------|
| Female | 73.7%   |
| Male   | 26.3%   |

Table 1:Table of Gender

This table represents the gender composition of the sample in which 73.7% were male and 26.3% female.

In this study, the percentage of male is high.

#### 2. Age:

| Age    | Percent |
|--------|---------|
| 18-25  | 26%     |
| 26-33  | 48%     |
| 34-41  | 22%     |
| 42- 49 | 2%      |
| >50    | 2%      |

Table 2:Table of Age

The composition of the sample with reference to age groups. 26% of respondents age were 18-25, 48% respondents age were 26-33 range, 22% respondents age were in 34-41 range, 2% respondents age were in 42-49 range and just 2% respondents were more than 50years. In this study, the percentage of 26-33 respondents is high.

### 3. Experience (Year):

| Experience | Percent |
|------------|---------|
| 1-5        | 31%     |
| 6-10       | 43%     |
| >10        | 26%     |

Table 3:Table of Experience

The respondent experiences the range work, 31% responds in range (0-5), the high percentage of respondents work experience is 43% in range (6-10), and above 10 is 26%.

### 4. Qualification:

| Qualification | Percent |
|---------------|---------|
| Intermediate  | 3.1%    |
| Bachelor      | 6.7%    |
| Master        | 38%     |
| MS/MPhil      | 52.2%   |

Table 4:Table of Qualification

The respondent's qualification, Intermediate qualified was 3.1%, bachelor qualified was 6.7%, master qualified was 38% and MS/MPhil qualified was 52.2%, so the master qualified percentage is high.

#### 5. Agile methods and productivity:

| Q1: How have agile methods effected your productivity? |         |
|--------------------------------------------------------|---------|
| Answers                                                | Percent |
| Much higher                                            | 68%     |
| Higher                                                 | 13%     |
| No change                                              | 12%     |
| somewhat lower                                         | 4%      |
| Much lower                                             | 3%      |

Table 5:Table of Agile methods and productivity

#### 6. Percentage of successful agile projects:

| Q2: What is the Percentage of successful Agile projects? |         |
|----------------------------------------------------------|---------|
| Answers                                                  | Percent |
| 99%-91%                                                  | 5%      |
| 90%-75%                                                  | 37%     |
| 74%-50%                                                  | 41%     |
| 49%-25%                                                  | 12%     |
| <25%                                                     | 5%      |

Table 6:Table of Percentage of successful agile projects

#### 7. Effect of agile on product quality:

| Q3: How have agile methods effected the quality of the systems produced? |         |
|--------------------------------------------------------------------------|---------|
| Answers                                                                  | Percent |
| Much higher                                                              | 13%     |
| higher                                                                   | 56%     |
| No change                                                                | 16%     |
| somewhat lower                                                           | 11%     |
| Much lower                                                               | 4%      |

Table 7:Table of Effect of agile on product quality

## 8. Effect of agile on development cost:

| Q4: How have agile methods effected the cost of development? |         |
|--------------------------------------------------------------|---------|
| Answers                                                      | Percent |
| Much higher                                                  | 2%      |
| higher                                                       | 45%     |
| No change                                                    | 18%     |
| somewhat lower                                               | 16%     |
| Much lower                                                   | 19%     |

Table 8:Table of Effect of agile on development cost

## 9. Results

This part includes the results of the study. Descriptive statistics, correlations, alpha reliabilities, and results of linear, I will analyze the data collected through the survey, to use them to answer the question of the study, to reach to the desired results and achieve the study's objective, so I used some statistical tools, through this analysis I will reach the results and conclusions.

### 3.4.4.1 Descriptive Statistics

Descriptive statistics were used to analyze and understand this data, through extreme values are defined, and associations between variables are revealed, through metadata containing basic details such as sample size (N), minimum and maximum values, average values and standard data variations, **The researcher reaches one table of statistics for several variables.**

| Variables             | N   | Min  | Max  | Avg  | SD   |
|-----------------------|-----|------|------|------|------|
| Agile Methodology use | 255 | 1.40 | 5.00 | 3.78 | 0.58 |
| Project Success       | 255 | 2.21 | 5.00 | 3.80 | 0.53 |

Table 9:Table of statistics on several variables

#### ANOVA table:

| Covariates    | F Value | Significance Value |
|---------------|---------|--------------------|
| Gender        | 3.11    | >.005              |
| Age           | 0.581   | >.005              |
| Qualification | 1.18    | >.005              |
| Experience    | 4.06    | >.005              |

Table 10:Table of ANOVA

#### 3.4.4.2 Reliability Analysis

Reliability analysis refers to the fact that a scale should consistently reflect the construct it is measuring if the measurements are repeated several times. The analysis on reliability is called reliability analysis. Thus, if the association in reliability analysis is high, the scale yields consistent results and is therefore reliable.

| Variables             | Items | Cronbach's alpha |
|-----------------------|-------|------------------|
| Agile Methodology Use | 10    | 0.774            |
| Project Complexity    | 15    | 0.851            |
| Project Success       | 3     | 0.867            |
| Managerial Support    | 3     | 0.833            |

Table 11:Table of Reliability Analysis

Reliability analysis refers to the ability of a scale to give the same results consistently when tested several times. The Cronbach Coefficient Alpha (internal consistency reliability) value ranges from 0 to 1. Alpha values "0.7 "are more reliable whereas values below 0.7 are less reliable, through this analysis, Agile Methodology Use cronbach's alpha value is .774 in the current study, the cronbach value of Project Complexity in that study is .851, the Project Success cronbach's value is in the current study is.867 and Managerial Support value of cronbach's is .833.

#### 3.4.4.3 Correlation Analysis

Correlation analysis is a method of statistical evaluation used to study the strength of a relationship between two, numerically measured, continuous variables.

N=255,  $p < 0.05$   $p < 0.01$ . Correlation is significant at 0.01 levels (2-tailed), Correlation is significant at 0.05 levels (2-tailed); alpha reliabilities are given in parentheses.

| Variables             | 1     | 2    | 3    | 4 |
|-----------------------|-------|------|------|---|
| Agile Methodology Use | 1     |      |      |   |
| Project Complexity    | .408  | 1    |      |   |
| Project Success       | .140  | .300 | 1    |   |
| Managerial Support    | .1728 | .230 | .326 | 1 |

Table 12:Table of Correlation Analysis

This analysis presents the correlations for all theoretical variables, agile methodology was significantly correlated with project complexity ( $r=.408$ ,  $p<.01$ ). Project success ( $r=.140$ ,  $p<.01$ ) and manager support ( $r=.172$ ,  $p<.01$ ) and in the expected direction. Project complexity was significantly correlated with Project success ( $r=.300$ ,  $p<.01$ ) and manager support ( $r=.230$ ,  $p<.01$ ) and in the expected direction. Project success was significantly correlated with manager support ( $r=.326$ ,  $p<.01$ ) and in the expected direction.

## **Chapter (4): Conclusion**

## 4.1 Conclusion

Finally, in this research, we examined agile methodology and its influence on the entire project development and project success in different organization, for this purpose, a survey study was performed and well-designed questionnaires were distributed to around 255 members selected through simple random sampling. The collected data were analyzed statistically. From the graphical insights of our collected data, we can safely conclude that agile methods play a key role in the successful implementation of projects in organizations. The statistical treatment of our collected data shows that our data is dependable and therefore our conclusions are reliable.

## 4.2 Recommendations

Agile methodologies have been transformational in software development and have also set up their way into other areas of business due to their rigidity and concentration on delivering value. There are some recommendations to apply nimble effectively:

1. **Understand Agile Principles:** Before diving in, ensure that the platoon understands the core principles of Agile, including collaboration, client feedback, and iterative development.
2. **Start Small:** If new to Agile, begin with a small design or platoon. This helps in understanding the nuances without the pressure of a significant design hanging in the balance.
3. **Empower the Team:** Agile relies on tone- organizing brigades. Trust your platoon members to form opinions and take power of their work.
4. **Prioritize Work:** Use tools like a prioritized product backlog to ensure that the platoon always works on the most precious features or tasks first.

5. **Iterative Development:** Split systems into smaller parts (sprints or duplications). At the end of each replication, you should have a usable product or an element of the product.
6. **Regularly Review & Acclimate:** At the end of each sprint, conduct a sprint review to show the work and a retrospective to bandy what went well and what can be bettered.
7. **Maintain Open Communication:** Foster a culture of open communication. Daily stand- up meetings can help in agitating what was achieved, plans for the day, and any obstacles faced.
8. **Focus on nonstop Feedback:** Always gather feedback from stakeholders and end- druggies and incorporate it into the coming replication.
9. **Invest in Training:** If the platoon is new to Agile, consider investing in formal training or hiring a nimble trainer to guide the transition.
10. **Choose the Right Tools:** Use nimble tools like JIRA, Trello, or Asana to help manage backlogs, sprints, and track progress.
11. **Maintain a Sustainable Pace:** Agile emphasizes sustainability. Avoid collapse by icing the platoon maintains a steady, manageable pace of work.
12. **Commit to nonstop enhancement:** Always look for ways to optimize processes, ameliorate effectiveness, and deliver better results.
13. **Embrace Change:** One of the tenets of Agile is conforming to change rather than following a fixed plan. Encourage a mindset that views change as an occasion, not a handicap.
14. **Consider the Agile Framework:** There are colorful nimble methodologies like Scrum, Kanban, and XP. estimate and elect the bone that fits your design's nature and the platoon's preference.
15. **Stick with it:** In large organizations, there can be resistance to change, especially to agile methods. Be persistent, gather data to show progress, and get buy-in from leadership.

Remember that agile is a mindset, not just a set of practices. It requires a cultural shift and may face resistance initially, but with perseverance and commitment, the results can be very rewarding.

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