

**Research Article****The Impact of Behavioral and Cognitive Outcomes of Agile Project Management Practices on Project Success**<sup>1</sup>Momna Shahid | <sup>\*1</sup>Naveed Iqbal | <sup>2</sup>Muhammad Waseem

<sup>\*1</sup>Department of Management Sciences  
COMSATS University Islamabad,  
Abbottabad Campus  
<sup>2</sup>Associate Professor,  
Hazara University Mansehra  
Email: Mwaseem@hu.edu.pk

**Correspondence**

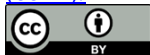
Assistant Professor Naveed Iqbal  
Email: naveed@cuiatd.edu.pk

**Citation**

Shahid, M., Iqbal, N., & Waseem, M. (2025). The impact of behavioral and cognitive outcomes of agile project management practices on project success. *Administrative and Management Sciences Journal*, 3(2). 202-213

This is an open access article distributed under the terms of

[Creative Commons Attribution License \(CC BY\)](https://creativecommons.org/licenses/by/4.0/).

**ABSTRACT**

This study explores how Agile Project Management (APM) practices enhance project success through psychological empowerment and innovative behavior in IT firms. Grounded in the theory of psychological empowerment, the research positions APM as a framework that enables agile teams to deliver innovation-driven solutions. The study investigates the behavioral and cognitive outcomes of APM, analyzing its relationship with psychological empowerment, innovative work behavior, and agile project success. Data collected from agile teams reveal that psychological empowerment and innovative behavior serve as mediating mechanisms linking APM practices to project success. The findings highlight APM as a key driver of psychological empowerment, fostering innovation among team members and ultimately improving project outcomes. This research contributes to the understanding of agile methodologies by emphasizing the human-centric factors that underpin their effectiveness in dynamic IT environments.

**KEYWORDS**

Agile Project Management psychological empowerment, Innovative work behavior, project Success

**1 | INTRODUCTION**

In the past few years, IT project teams have encountered more and more complex challenges as they take on a growing number of tasks. The rapidly changing nature of these challenges requires project managers embracing new management approaches rather than depending on traditional methodologies. As a result, this research intends to clarify the influence of Agile management approaches on project performance, through psychological empowerment, innovative work behavior. Agile methodologies, with their focus on adaptability, cooperation, and iterative processes, present a promising method to address inherent uncertainties and dynamic changes of IT industry. The traditional waterfall model, known for its linear and sequential project management approach, is often inadequate in today's rapidly changing IT landscape. Its inflexibility poses significant challenges in adapting to the uncertainties and changes inherent in IT projects. In contrast, Agile Project Management (APM) has emerged as a more effective approach, enabling proactive responses to evolving project requirements and market demands. APM, with its focus on iterative progress, facilitates continuous improvement and real-time adjustments, making it better suited to the dynamic nature of IT projects. Agile methods, known for their flexibility and teamwork, have revolutionized conventional project management by giving importance to continuous feedback and addressing issues at an early stage. This incremental approach not only reduces project risks but also improves the quality and timeliness of results. The collaborative atmosphere encouraged by Agile practices cultivates open dialogue and shared accountability among team members, resulting in higher morale and unity.

Psychological empowerment is a key motivating factor for Agile team. It indicates an individual's perception of control, competence, and influence within their work setting. Empowered employees demonstrate increased engagement, creativity, and making significant contributions to both personal and organizational success. In Agile

settings, team members are frequently granted more independence and accountability, thereby strengthening their sense of empowerment and ownership of their tasks. Innovative work behavior is a crucial element of organizational adaptability organization change delivery of innovation outcomes. Agile practices help organization by endorsing experimentation and learning from failures, which are viewed as opportunities for growth instead of setbacks. This change in mindset is vital for nurturing an innovative culture within organizations.

The iterative and feedback-centric characteristics of Agile methodologies are well-matched with the principles of psychological empowerment and innovative work behavior. Regular retrospectives and feedback loops create chances for continuous improvement and learning. Agile Team members are urged to contemplate their work, recognize areas for enhancement, and implement changes in subsequent iterations. This process not only improves project outcomes but also fosters the personal and professional growth of team members. Agile practices boost project efficiency and efficacy by fostering adaptability, teamwork, and continuous enhancement. Agile Project management methodologies are more apt to achieve their objectives within stipulated timelines and budgets owing to proactive risk. Such framework excels in handling complex projects characterized by frequently changing requirements and priorities. Through the breakdown of projects into smaller, manageable iterations, Agile practices enable teams to concentrate on delivering incremental value while retaining the flexibility to accommodate changes. This approach diminishes the overall complexity of the project and enhances the probability of success. In summary, the influence of Agile management practices on project performance is significant, both directly and indirectly through their impact on project complexity. By promoting a culture of flexibility, collaboration, and continuous improvement, Agile methodologies not only improve project outcomes but also contribute to the psychological empowerment and innovative work behavior of team members. In the ever-evolving landscape of technology projects, the adoption of Agile practices will increasingly serve as a pivotal factor in driving success and nurturing a responsive and empowered work environment for organizations. This research aims to delve deeper into these dynamics, thereby contributing to the continual advancement of project management practices within the IT sector.

## 2 | LITERATURE REVIEW

### 2.1 | Agile Management Methodology

Agile, a methodology that originated to tackle project uncertainties in software development, was introduced formally in the IT sector in 2001 when the "Agile Manifesto" was published. (Bianchi et al., 2020). Since then, it has gained popularity and spread across multiple industries, boosting markets, improving quality, and increasing team motivation and productivity (Stankovic et al., 2013). In the past, software development was approached in a traditional manner, where every aspect of the system was specified in detail to provide predictable solutions to every problem. However, this approach proved to be inadequate in today's fast-paced business environment, where customer needs and requirements are constantly evolving. As a result, Agile methodology emerged as a response to this dynamic scenario (Fernandez & Fernandez, 2008). Agile methodology is a set of principles and practices that allow developers to be more flexible and responsive to changes in the system, enabling them to adapt to the ever-changing business environment. The Agile approach is particularly useful in the development of complex software, where the need for adaptability and responsiveness is crucial to the success of the project. (Lee & Xia, 2010). Agile is a software development approach that emphasizes simplicity, quality, self-management, and sustainable development. Agile principles are designed to help teams work more efficiently and effectively by promoting collaboration, flexibility, and continuous improvement (Serrador & Pinto, 2015). Agile creates an environment of innovation, where companies are expected to be more creative, experience less routine, and operate under dynamic conditions (Denning, 2013). By adhering to Agile principles, companies can stay competitive and adapt to changing market conditions quickly and efficiently.

### 2.2 | Agile Management Practices

Agile practices have been a revolutionary approach to IT project management, that breaks away from traditional methodologies, to cater to the ever-changing IT development landscape. The crux of agile lies in its collaborative, iterative, and adaptable nature, which places a premium on responsiveness and flexibility throughout the project lifecycle. The approach emphasizes the importance of adaptability and responsiveness to change, enabling project

teams to work in tandem and respond quickly to new developments or challenges. (Henriksen & Pedersen, 2017). Agile methodologies are a popular approach to project management that prioritize collaboration among cross-functional teams. This approach fosters open communication and shared decision-making, which ensures that all team members, including developers, testers, and business stakeholders, work closely together throughout the project. This collaborative ethos promotes a collective sense of ownership and shared responsibility, which is essential to the success of an agile project (Stankovic et al., 2013). One of the hallmarks of agile practices is the iterative development process. Rather than following a linear and sequential path, agile projects progress through short development cycles or sprints. Each iteration results in a potentially shippable product increment, allowing for continuous feedback and refinement. This iterative approach enhances adaptability, as the project can quickly adjust to changing requirements or priorities (Mary', 2021). Agile methodologies embrace change as a fundamental principle. Unlike rigid, upfront planning common in traditional project management, agile approaches accommodate changes in project scope, priorities, and requirements even late in the development process. This flexibility enables teams to respond swiftly to emerging insights, ensuring that the final product meets the evolving needs of the stakeholders. Agile 13 methodologies are also characterized by a focus on delivering value to the customer (Litchmore et al., 2016). This means that the team works closely with the customer to understand their needs and priorities, and then develops a product that meets those needs. To achieve this, agile teams prioritize the most important features first, ensuring that the product delivers value early and often. Overall, agile methodologies offer many benefits, including improved collaboration, increased adaptability, and a focus on delivering value to the customer.

### 2.3 | Agile Manifesto

The Agile Manifesto, established in 2001 by 17 software professionals, outlined principles that emphasize collaboration, flexibility, and adaptability, with the goal of delivering value to the customer as quickly as possible (Beck et al., 2001). The Agile Manifesto's four fundamental values are: giving priority to individuals and interactions over processes and tools, stressing the importance of working software over comprehensive documentation, encouraging customer collaboration over contract negotiation, and being responsive to change instead of strictly following a plan. These values have laid the groundwork for numerous software development teams globally, leading to a transformation of organizational culture and providing substantial business advantages (Serrador & Pinto, 2015). Agile methods are highly effective for projects with unclear scopes and changing requirements. Traditional planning tools often don't work well for such projects, while Agile approaches enhance team productivity and satisfaction by reducing unnecessary activities and facilitating active client involvement throughout the process (Stankovic et al., 2013). Agile methodologies provide a flexible and adaptive framework that emphasizes cooperation, iterative development, and adaptability, contributing to the successful execution of projects in environments that embrace change and prioritize customer satisfaction (Henriksen & Pedersen, 2017). The traditional project management approach has been transformed by Agile project management, giving priority to flexibility, collaboration, and adaptability. This has resulted in a change in project management and organizational development. Agile practices allow teams to swiftly adapt to changes in requirements, priorities, and market conditions, making them crucial in today's fast-paced business environment (Bianchi et al., 2020). By focusing on customer collaboration, change responsiveness, and promoting iterative development, Agile practices create an environment conducive to nurturing innovative employees and ensuring the successful delivery of high-quality products (Koch et al., 2023).

### 2.4 | Agile Management Practices in the Pakistani IT Industry

The adoption of Agile management practices within the Pakistani IT industry has resulted in significant improvements in project performance, contributing to the long-term success of organizations in the sector. Agile methodologies allow for task decomposition into smaller, more manageable units and promote decentralized supervision, as opposed to traditional top-down approaches. This approach not only enhances task management efficiency but also expedites decision-making processes. However, organizations that have not fully embraced Agile practices encounter various complexities, resulting in performance deterioration (Muhammad et al., 2021).

### 2.5 | Global Shift to Agile Methodologies

Agile management practices are not widely adopted in project development processes by many organizations. However, recent research shows that organizations, especially in the IT sector, are increasingly in favor of Agile

methodologies over traditional waterfall management practices due to their long-term benefits. Studies have also emphasized the importance of Agile management practices and their positive impact on organizational performance (Gligor et al., 2015; Kerzner, 2017).

## 2.6 | Historical Context and Evolution of Agile

The idea of Agile management was first introduced in 1991 when the Lacocca Institute defined agility as "the ability to thrive in rapidly changing, fragmented markets." Over time, agility was redefined as "the state or quality of being able to move quickly in an easy fashion" (Denning, 2018). However, the adoption of agility was limited until 2001, when the Agile Manifesto was created by various professionals, practitioners, and theorists. The manifesto questioned traditional management practices and stressed the importance of adopting Agile practices in uncertain environments. Agile, originally created to address uncertainties in software development, was formally introduced to the IT sector with the publication of the Agile Manifesto (Bianchi et al., 2020). Since then, it has become popular across various industries, stimulating markets, enhancing quality, and boosting team motivation and productivity (Stankovic et al., 2013).

## 2.7 | Principles and Benefits of Agile Methodologies

Agile methodology consists of principles and techniques that enable developers to be more adaptable and responsive to changes, allowing them to adjust to the constantly changing business environment. This method is especially valuable in the development of intricate software where adaptability and responsiveness are essential for success (Lee & Xia, 2010). Agile prioritizes simplicity, quality, self-governance, and sustainable development, encouraging collaboration, flexibility, and ongoing improvement (Serrador & Pinto, 2015). A fundamental aspect of Agile is continual interaction between the team and customers, engaging customers in every stage of development to ensure their requirements are fulfilled and their feedback is incorporated, thus eradicating communication gaps and reducing the risk of misunderstandings (Uraon et al., 2023). Additionally, Agile advocates for continuous delivery, where small segments of the product are regularly delivered and enhanced based on customer feedback, empowering teams to quickly respond to evolving customer needs and detect issues early (Henriksen & Pedersen, 2017).

## 2.8 | Psychological Empowerment and Agile Practices

The adoption of Agile project management practices has been found to have a profound effect on the psychological empowerment of individuals within project teams. Psychological empowerment encompasses an individual's intrinsic motivation, sense of self-efficacy, autonomy, as well as the perceived meaning and impact of their work. Agile methodologies, with their emphasis on collaboration, flexibility, and continuous improvement, create an environment that nurtures these crucial aspects of empowerment among team members. Autonomy and self-management are central to Agile methodologies. Unlike traditional top-down approaches, Agile empowers teams to self-manage their work, promoting decentralized decision-making and granting team members the autonomy to organize their tasks and workflows. This autonomy fosters a sense of ownership and control, which is integral to psychological empowerment, as team members feel empowered to make decisions and influence project outcomes, leading to increased intrinsic motivation and engagement. Further contributing to psychological empowerment are Agile's collaborative practices, including daily stand-up meetings, sprint planning sessions, and retrospectives. These practices facilitate open communication and collective problem-solving, fostering a sense of community and support among team members. Feeling valued and integral to the project's success enhances the sense of meaning and impact, reinforcing the psychological empowerment of individuals. The iterative nature of Agile methodologies, characterized by continuous feedback and improvement cycles, plays a vital role in further enhancing psychological empowerment. Regular feedback from peers, stakeholders, and customers provides valuable insights for team members, helping them refine their skills and competencies while reinforcing a growth mindset. Observing tangible improvements and positive outcomes strengthens individuals' self-efficacy and confidence in their abilities. Agile's flexibility and adaptability also contribute significantly to the psychological empowerment of team members. The freedom to experiment with different approaches and learn from experiences fosters a culture of continuous learning and development, vital for psychological empowerment. Supported in their endeavors to try new ideas and approaches without fear of failure, team members' creativity and problem-solving capabilities are enhanced. The psychological empowerment facilitated by Agile practices directly influences innovative work behavior. Empowered employees are more likely to engage in proactive behaviors, such as

suggesting new ideas, improving processes, and experimenting with novel solutions. The sense of autonomy, competence, and meaningful contribution promoted by Agile practices encourages team members to take initiative and explore creative ways to achieve project goals, essential for organizations aiming to stay competitive and agile in today's fast-paced business environment. Agile practices not only enhance individual motivation and engagement but also foster a culture of innovation and continuous improvement within the team. As organizations increasingly adopt Agile methodologies, understanding and leveraging their impact on psychological empowerment will be crucial for maximizing project success and sustaining a motivated and high-performing workforce.

H1: Agile project management practices have an impact on the psychological empowerment of project team members.

## 2.9 | Psychological Empowerment and Innovative Work Behavior

The relationship between psychological empowerment and the innovative work behavior of project team members is a vital aspect of organizational dynamics. Psychological empowerment encompasses feelings of self-efficacy, autonomy, meaning, and impact, all of which are essential for creating an environment conducive to innovative behaviors. Innovative work behavior involves the generation, promotion, and realization of new ideas, products, or processes within a team or organization. The interconnection between psychological empowerment and innovative work behavior can be understood through several key underlying mechanisms. Self-efficacy, which denotes an individual's belief in their capabilities to achieve tasks and goals, is a foundational component of psychological empowerment. Team members with high self-efficacy are more inclined to engage in creative thinking and idea generation. Their confidence in contributing valuable insights and solutions encourages them to take risks and explore innovative approaches without the fear of failure or criticism, leading to a higher frequency and quality of innovative ideas within the team. Autonomy, another crucial element of psychological empowerment, provides team members with the freedom to make decisions and experiment with different approaches to their work. This sense of autonomy is pivotal in fostering innovative work behavior, allowing individuals to explore new methods and solutions without being confined by rigid processes or hierarchical approval. When team members have the freedom to experiment, they are more likely to uncover and implement innovative solutions that enhance project outcomes and organizational processes. The perception of meaningful and purposeful work enhances intrinsic motivation, serving as a powerful driver of innovative behavior. When team members understand how their contributions impact the organization and align with broader goals, they are motivated to surpass routine tasks and think creatively about adding value. This sense of purpose encourages them to invest time and effort into developing and refining innovative ideas that can lead to significant improvements and advancements. Feeling that one has an impact and influence over work outcomes is another critical aspect of psychological empowerment. When team members believe that their actions can make a difference, they are more likely to engage in proactive behaviors, such as seeking out new opportunities, advocating for change, and driving the implementation of innovative ideas. This proactive mindset is essential for overcoming obstacles and driving forward with innovative initiatives, even in the face of challenges.

H2: Psychological empowerment of project team members has significant impact on Innovative work behavior.

## 2.10 | Mediation Role of Psychological Empowerment

The synergy between Agile project management and innovative work behavior is deeply influenced by the concept of psychological empowerment. Psychological empowerment acts as a crucial intermediary, shaping the connection between Agile practices and the inclination of team members to engage in innovative work behavior. Agile methodologies embody principles and practices that innately foster psychological empowerment among team members. Agile practices provide teams with the autonomy to make decisions regarding their work processes and solutions. This autonomy enhances the sense of control and self-efficacy among team members, nurturing feelings of capability and responsibility. Agile emphasizes teamwork and collaboration through practices such as daily stand-ups, sprint planning, and retrospectives. These collaborative efforts ensure that every team member's voice is heard and valued, contributing to a sense of belonging and purpose. Agile practices involve regular feedback loops and iterative improvements. The continual feedback from peers, stakeholders, and customers helps team members understand their impact, recognize their contributions, and continuously refine their skills. Agile methodologies encourage adaptability and responsiveness to changing requirements. This flexibility allows team members to



experiment and learn from their experiences, fostering an environment where innovation is not only possible but also encouraged. Psychological empowerment, defined by self-efficacy, autonomy, meaning, and impact, significantly influences innovative work behavior. Here's how each dimension of psychological empowerment influences innovative work behavior. When team members believe in their capabilities, they are more likely to propose and pursue innovative ideas. Self-efficacy boosts confidence in one's ability to contribute meaningfully, which is crucial for creative problem-solving and innovation. The freedom to make decisions and experiment with new approaches is essential for innovation. Autonomy allows team members to explore unconventional solutions and take calculated risks, leading to the generation of novel ideas. When individuals find their work meaningful and aligned with their values, they are more motivated to engage in innovative activities. The sense of purpose drives them to think creatively and seek ways to improve their work and contribute to organizational goals. The belief that one's work makes a difference fosters a proactive attitude toward innovation. When team members see the tangible outcomes of their contributions, they are more likely to continue engaging in innovative behaviors. Research supports the mediating role of psychological empowerment in the relationship between Agile practices and innovative work behavior. For instance, a study by Zhang and Bartol (2010) demonstrated that psychological empowerment significantly enhances employees' creative performance by fostering intrinsic motivation. Similarly, studies by Spreitzer (1995) and Amabile (1996) highlight those empowered employees are more likely to engage in innovative activities due to increased motivation and a sense of ownership over their work. Psychological empowerment plays a critical role in the relationship between Agile practices and innovative work behavior. By promoting autonomy, collaboration, continuous feedback, and adaptability, Agile practices enhance the psychological empowerment of team members. This empowerment, characterized by increased self-efficacy, autonomy, meaning, and impact, leads to higher levels of innovative work behavior. Understanding this mediating role is essential for organizations seeking to leverage Agile methodologies to foster a culture of innovation and continuous improvement. As organizations continue to adopt and refine Agile practices, the focus on psychological empowerment will be key to unlocking the full potential of their teams and driving sustained innovation.

H3: Psychological Empowerment mediates the relationship between Agile practices and Innovative Work Behavior.

### **2.11 | Serial Mediation of Psychological Empowerment and Innovative Work Behavior**

The influence of agile project management practices on project success is profound, and it is mediated by psychological empowerment and innovative work behavior (IWB). Agile methodologies, characterized by flexibility, collaboration, and iterative development, create an environment that fosters psychological empowerment. This empowerment significantly affects team members' propensity to engage in innovative work behavior, which ultimately drives project success. Agile practices promote autonomy and decentralized decision-making, allowing teams to make decisions about their work processes and solutions. This autonomy enhances the sense of control and self-efficacy among team members, making them feel more capable and responsible for their contributions. Collaboration and teamwork are emphasized through practices such as daily stand-ups, sprint planning, and retrospectives, ensuring that every team member's voice is valued. This collaborative environment fosters a sense of belonging and purpose, further contributing to psychological empowerment. Additionally, Agile methodologies involve regular feedback loops and iterative improvements, fostering an environment where innovation is encouraged. Psychological empowerment, characterized by self-efficacy, autonomy, meaning, and impact, is a significant predictor of innovative work behavior. When team members feel empowered, they are more likely to engage in behaviors that promote and realize new ideas and solutions. Self-efficacy boosts confidence in one's ability to contribute meaningfully, crucial for creative problem-solving and innovation. Autonomy allows team members to explore unconventional solutions and take calculated risks, leading to the generation of novel ideas. When individuals find their work meaningful and aligned with their values, they are more motivated to engage in innovative activities. The sense of purpose drives them to think creatively and seek ways to improve their work and contribute to organizational goals. Innovative work behavior, driven by psychological empowerment, is a vital factor in achieving project success. Empowered employees engaged in innovative work behavior are more likely to generate and implement novel ideas that improve project outcomes. This behavior leads to the development of creative solutions that address project challenges and meet evolving requirements, ultimately contributing to the successful completion of projects. Research supports the serial mediating role of psychological empowerment and innovative work behavior in the relationship between Agile practices and project success. Studies have shown that psychological empowerment enhances employees' creative performance by fostering intrinsic motivation. Empowered employees are more likely to engage in innovative activities due to increased

motivation and a sense of ownership over their work.

H4: Psychological Empowerment and IWB serially mediate the relationship between Agile practices and Project Success.

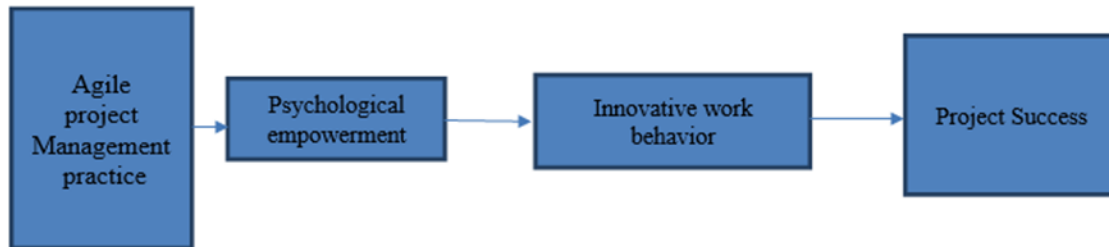


Figure 1: Theoretical Framework

### 3 | METHODS

#### 3.1 | Study Context: IT Companies Registered with PASHA

The study adopts a deductive approach to examine the influence of Agile Project Management practices on project success, with a specific focus on behavioral and cognitive outcomes. It employs a quantitative methodology to collect primary data through a survey distributed via Google Forms to project managers and team members (including developers, designers, testers, team leaders, system analysts, network engineers, etc.) in IT firms affiliated with the Pakistan Software Houses Association for IT and ITeS (PASHA).

#### 3.2 | Sample and Procedure

The study focuses on a population of 1,300 IT companies registered with PASHA. The sampling method employed a multistage approach, initially using purposive sampling to choose companies with a proven history of employing agile practices for nearly three years, resulting in 297 companies. Subsequently, random sampling was used in second step and 132 IT companies were chosen comprising approximately 16,380 employees. The sample size, calculated with a 95% confidence level, was determined to be 376 employees. Out of the 376 distributed questionnaires, 230 responses were received, with 203 valid responses obtained after data screening. The survey was conducted using an online questionnaire distributed through Google Forms, designed for project managers and team members. It included sections for demographic information and 16 questions regarding Agile Project Management practices, with participants rating their agreement on a scale from 1 (strongly disagree) to 5 (strongly agree). The next section comprises of 12 questions which are about psychological empowerment (cognitive Outcomes) which is checked on the bases of four dimensions that are Impact, Competence, Meaning and self-determination. The next section of the questionnaire is Behavioral outcomes which comprises of 5 questions about variable Innovative work behavior. The fifth and the last section comprises of 4 questions about project success.

#### 3.3 | Measures

Agile project management practices were measured using (Malik et al., 2021) 16-item validated scale with scale anchors ranging from “1 strongly disagree to 5 strongly agree.”. The sample item included, “The project team was granted autonomy on how to handle user requirement changes”. Cronbach’s alpha for this scale was 0.690. Psychological empowerment was measured by the 11- item scale developed by Spreitzer (1995) with scale anchors ranging from “1 strongly disagree to 5 strongly agree.” The sample item included, “The work I do is meaningful to me.” Cronbach’s alpha for this scale was 0.743. Innovative work behavior was measured using (Dahiya & Raghuvanshi, 2022) validated scale. The sample item included, “I find new approaches to execute tasks.” and Cronbach’s alpha for this scale was 0.689. The last section comprises of 4 questions about project success and the questionnaire is adopted from (Stankovic et al., 2013). The sample item included, “The project was successful in terms of quality of the project outcome” and Cronbach alpha for this scale was 0.630.

## 4 | RESULTS

### 4.1 | Descriptive Statistics

Table1 shows descriptive statistics and bivariate correlations for the variables. It is evident from table1 that research instruments used in this study are internal consistent and reliable as all the  $\alpha$  values are greater than threshold. All the constructs are highly correlated that fulfills the assumption of causal research.

**Table 1**  
Descriptive Statistics and Correlation

Variables	Mean	SD	Alpha	1	2	3
APM	3.97	.73826	.690			
PE	4.10	.68663	.743	.477**		
PS	4.58	.37690	.689	.339**	.471**	
IWB	4.57	.39486	.630	.306**	.355**	.316**

### 4.2 | Hypotheses Testing

To test H1 and H2 hypotheses, we used The PROCESS macro for SPSS mediation model 4 with 5,000 bootstraps resamples and 95 percent confidence interval for testing. And to test hypotheses H3 and H4, we used The PROCESS macro for SPSS mediation model 6 with 5,000 bootstraps resamples and 95 percent confidence interval for testing the indirect, total, and direct. This method provides nonparametric estimates and is more appropriate than the traditional regression mediation approach, as recommended by the literature. According to the results of the study, the relationship between Psychological Empowerment and APM practices are significant. The results revealed the significant impact of APM practices on Psychological Empowerment ( $b=0.8290$ ,  $t = 19.21$ ,  $p < 0.05$ ) supporting H1. Study assessed the relationship between Psychological Empowerment and IWB. The results revealed the significant impact of Psychological Empowerment on IWB ( $b = .5977$ ,  $t = 6.72$ ,  $p < 0.05$ ). The study assessed serial mediation with psychological empowerment and IWB serially mediating the relationship between APM practices and Project Success. The results revealed a significant indirect effect of APM practices on Project success through psychological empowerment and IWB ( $b = 0.1578$ ,  $t = 2.80$ ), supporting H4. Furthermore, the direct effect of APM practices on Project success in presence of the mediators was also found insignificant ( $b = 0.1291$ ,  $t = 1.62$ ,  $p = .1078$ ). Hence, there is full serial mediation of psychological Empowerment and IWB on the relationship between APM practices and Project Success.

**Table 2**  
Direct Relationship and Hypotheses Testing

H#	Relationship	$\beta$	t	P value	R <sup>2</sup>	Status
H1	APM-PE	.8290	19.21	.000	.6162	Accepted
H2	PE-IWB	.5977	6.72	.000	.4150	Accepted

**Table 3**  
Mediation Analysis

Hypothesis		Effect	SE	T	P	Confidence Interval		Status
						LLCI	ULCI	
H3 (APM- PE- IWB)	Direct	.1348	.0939	1.44	.1526	{-.0503,0.3199}		Full Mediation
	Indirect	.4955	.0905	5.47	.000	{0.3068,0.6608}		
	Total	.6303	.0635	9.92	.000	{0.5051,0.7555}		
H4 (APM- PE- IWB- PS)	Direct	.1291	.0800	1.62	.1078	{-0.0285,0.2867}		Full Mediation
	Indirect	.1578	.0562	2.80	.000	{0.0515,0.2714}		
	Total	.5198	.0555	9.36	.000	{0.4104,0.6292}		



## 5 | CONCLUSIONS AND CONTRIBUTION OF STUDY

This study extends the theoretical framework of project management by integrating Agile Project Management (APM) practices with traditional project management methods, investigating their combined impact on psychological empowerment and innovative work behavior (IWB), and ultimately, project success. The results suggest combining agile practices such as team autonomy and agile communications with traditional project management approaches can enhance psychological empowerment and encourage innovative behaviors. The research highlights the mediating role of psychological empowerment in the relationship between APM practices and project success, thereby extending the self-determination theory (SDT) and demonstrating the contribution of agile practices to an empowering work environment, which, in turn, promotes IWB and enhances project outcomes. The study offers empirical evidence that psychological empowerment is a critical mechanism through which agile methodologies exert their positive effects on project performance. This study emphasizes the importance of fostering innovation within project teams by highlighting the full mediation effect of Innovative Work Behavior (IWB) between psychological empowerment and project success. Empowered employees are more likely to engage in creative and proactive behaviors, essential for achieving project success.

## 6 | LIMITATION AND DIRECTION FOR FUTURE DIRECTION

This study is not without limitations. In this study, the sample was drawn from LinkedIn which has precedence in the literature for similar studies such as (Serrador & Pinto, 2015), and (Malik et al., 2021). The LinkedIn sampling meant that the agile practitioners who were not active on professional networking websites were unable to participate in this research. Future research should include a more diverse sample of agile practitioners. Another limitation of this study is that no boundary conditions were established for the proposed relationships. The future research could explore additional factors that affect the serial mediation of APM, psychological empowerment and IWB and project success. Future studies should establish and test boundary conditions for the relationships between agile practices and project success.

### Declarations

**Ethical Approval and Consent to Participate:** This study strictly adhered to the declaration of Helsinki and relevant national and institutional ethical guidelines. Informed consent was taken verbally. All procedures performed in this study were in accordance with the ethical standards of the Helsinki Declaration.

**Consent for Publication:** Not Applicable

**Availability of Data and Material:** Data can be requested from corresponding author.

**Competing Interest:** The authors declare no competing interest

**Funding:** Not Applicable

**Authors' Contribution:** MS, NI & MW conceptualization; Data collection; Analysis; Writing Original Draft,

**Acknowledgement:** The authors thanks all the reviewers for giving suggestions to improve the study

## REFERENCES

- Afsar, B., & Badir, Y. (2016). The mediating role of psychological empowerment on the relationship between person-organization fit and innovative work behaviour. *Journal of Chinese Human Resource Management*, 7(1), 5–26. <https://doi.org/10.1108/JCHRM-11-2015-0016>
- Al Naboulsi, S., & Kassab, A. (2021). Enhancing In-role & Extra-role Performance through Psychological Empowerment: The mediating role of Employee Engagement [unpublished doctoral dissertation]. Adnan Kassab School of Business
- Alge, B. J., Ballinger, G. A., Tangirala, S., & Oakley, J. L. (2006). Information privacy in organizations: Empowering creative and extrarole performance. *Journal of Applied Psychology*, 91(1), 221–232. <https://doi.org/10.1037/0021-9010.91.1.221>
- Almulhim, A. F. (2020). Linking knowledge sharing to innovative work behaviour: The role of psychological empowerment. *Journal of Asian Finance, Economics and Business*, 7(9), 549–560.

- <https://doi.org/10.13106/JAFEB.2020.VOL7.NO9.549>
- Alshemmari, J. M. H. J. (2023). An Empirical Study on Employee Empowerment Role in Increasing Efficiency of Employee Performance. *Journal of Logistics, Informatics and Service Science*, 10(1), 52–71. <https://doi.org/10.33168/LISS.2023.0104>
- Baird, K., Su, S., & Munir, R. (2018). The relationship between the enabling use of controls, employee empowerment, and performance. *Personnel Review*, 47(1), 257–274. <https://doi.org/10.1108/PR-12-2016-0324>
- Beck, K., Beedle, M., Van Bennekum, A., Cockburn, A., Cunningham, W., Fowler, M., Grenning, J., Highsmith, J., Hunt, A., Jeffries, R., Kern, J., Marick, B., Martin, R. C., Mellor, S., Schwaber, K., Sutherland, J., & Thomas, D. (2001). Manifesto for Agile Software Development Twelve Principles of Agile Software. <http://www.agilemanifesto.org>
- Bianchi, M., Marzi, G., & Guerini, M. (2020). Agile, Stage-Gate and their combination: Exploring how they relate to performance in software development. *Journal of Business Research*, 110, 538–553. <https://doi.org/10.1016/j.jbusres.2018.05.003>
- Cabrera, A., Collins, W. C., & Salgado, J. F. (2006). Determinants of individual engagement in knowledge sharing. *International Journal of Human Resource Management*, 17(2), 245–264. <https://doi.org/10.1080/09585190500404614>
- Commer, P. J., Sci, S., Mahmood, A., & Sahar, A. (2017). Impact of Psychological Empowerment and Perceived Career Support on Employee Work Engagement with the Mediating Role of Affective Commitment in Pakistan. *Journal of Commerce and Social Sciences*, 11(3), 111–125. <https://www.jespk.net/publications/408.pdf>
- Conger, J. A., & Kanungo, R. N. (1988). The Empowerment Process: Integrating Theory and Practice. *Academy of Management Review* 13(3), 471–482. <https://doi.org/10.2307/258093>
- Dahiya, R., & Raghuvanshi, J. (2022). Validation of innovative work behaviour scale: Indian apparel manufacturing sector. *Asia Pacific Management Review*, 27(2), 120–136. <https://doi.org/10.1016/j.apmr.2021.06.002>
- Denning, S. (2013). Why Agile can be a game changer for managing continuous innovation in many industries. *Strategy & Leadership*, 41(2), 5–11. <https://doi.org/10.1108/10878571311318187>
- Fernandez, D. J., & Fernandez, J. D. (2008). Agile project management-agilism versus traditional approaches. *The Journal of Computer Information Systems* 49(2), 55–71. DOI:10.1080/08874417.2009.11646044
- Gultom, L., Suroso, G., & Gasjirin, J. (2022). The Influence of Proactive Behavior And Psychological Empowerment On Innovative Work Behavior: Moderating Role Of Job Characteristic. *Journal of World Science*, 1(9), 674–682. <https://doi.org/10.36418/jws.v1i9.92>
- Haffer, J., & Haffer, R. (2016). Positive employee attitudes as a determinant of project success and business excellence: the case of Poland. *Journal of Positive Management*, 6(4), 15. <https://doi.org/10.12775/jpm.2015.019>
- Helmy, I., Rabiatal Adawiyah, W., & Banani, A. (2019). Linking Psychological Empowerment, Knowledge Sharing, and Employees' Innovative Behavior in Indonesian SMEs, *The Journal of Behavioral Science*, 14(2), 66–79. <https://so06.tci-thaijo.org/index.php/IJBS/article/view/172180>
- Henriksen, A., & Pedersen, S. A. R. (2017). A qualitative case study on agile practices and project success in agile software projects, *Journal of Modern Project Management*, 5(1), 62–73. <https://doi.org/10.19255/JMPM01306>
- Khan, J., Malik, M., & Saleem, S. (2020). The Impact of Psychological Empowerment of Project- Oriented Employees on Project Success: A Moderated Mediation Model. *Economic Research- Ekonomska Istrazivanja*, 33(1), 1311–1329. <https://doi.org/10.1080/1331677X.2020.1756374>
- Koch, J., Drazic, I., & Schermuly, C. C. (2023). The affective, behavioral and cognitive outcomes of agile project management: A preliminary meta-analysis. *Journal of Occupational and Organizational Psychology*, 96(3), 678–706. <https://doi.org/10.1111/joop.12429>
- Koch, J., & Schermuly, C. C. (2021). Managing the Crisis: How COVID-19 Demands Interact with Agile Project Management in Predicting Employee Exhaustion. *British Journal of Management*, 32(4), 1265–1283. <https://doi.org/10.1111/1467-8551.12536>
- Kustanto, H., Eliyana, A., Harum Santri Mumpuni, J., & Rahmawati Gunawan, D. (2020). The Moderation Role of Psychological Empowerment on Innovative Work Behaviour. *Systematic Reviews in Pharmacy*, 11(8), 254–264. DOI:10.31838/SRP.2020.8.38
- Lee, G., & Xia, W. (2010). Toward Agile: An integrated analysis of quantitative and qualitative field data on software. *MIS Quarterly*, 34(1), 87–114.

- Lill, P. A., Wald, A., & Gleich, R. (2020). Agility and the role of project - internal control systems for innovation project performance. *International Journal of Innovation Management*, 24(7), 111-115. <https://doi.org/10.1142/S1363919620500644>
- Litchmore, K. A. H., Sharum, B. J., & Jose, C. (2016). A comparative study of agile methods, people factors, and process factors in relation to project success. *Int. J. Web Appl*, 9(2), 121-128. <https://api.semanticscholar.org/CorpusID:35941629>
- Llorente-Alonso, M., García-Ael, C., & Topa, G. (2023). A meta-analysis of psychological empowerment: Antecedents, organizational outcomes, and moderating variables. *Current Psychology*, 3(2), 55-57. <https://doi.org/10.1007/s12144-023-04369-8>
- Malik, M., Sarwar, S., & Orr, S. (2021a). Agile practices and performance: Examining the role of psychological empowerment. *International Journal of Project Management*, 39(1), 10–20. <https://doi.org/10.1016/j.ijproman.2020.09.002>
- Muhammad, U., Nazir, T., Muhammad, N., Maqsoom, A., Nawab, S., Fatima, S. T., Shafi, K., & Butt, F. S. (2021). Impact of agile management on project performance: Evidence from I.T sector of Pakistan. *Plos One*, 16(4 ). <https://doi.org/10.1371/journal.pone.0249311>
- Nurjaman, K., Marta, M. S., Eliyana, A., Kurniasari, D., & Kurniasari, D. (2019). Proactive work behavior and innovative work behavior: Moderating effect of job characteristics. *Humanities and Social Sciences Reviews*, 7(6), 373–379. <https://doi.org/10.18510/hssr.2019.7663>
- Ochodek, M., & Kopczyńska, S. (2018). Perceived importance of agile requirements engineering practices A survey. *Journal of Systems and Software*, 143, 29–43. <https://doi.org/10.1016/j.jss.2018.05.012>
- Rafida, N., Rahman, A., & Aqilah, N. (2021). The Effect of Psychological Empowerment on Employee Performance, *International Journal of Innovation, Creativity and Change*, 15(6), 143-150. [www.ijcc.net](http://www.ijcc.net)
- Rai, A., Ghosh, P., Chauhan, R., & Singh, R. (2018). Improving in-role and extra-role performances with rewards and recognition: Does engagement mediate the process? *Management Research Review*, 41(8), 902–919. <https://doi.org/10.1108/MRR-12-2016-0280>
- Raub, S., & Robert, C. (2010). Differential effects of empowering leadership on in-role and extra- role employee behaviors: Exploring the role of psychological empowerment and power values. *Human Relations*, 63(11), 1743–1770. <https://doi.org/10.1177/0018726710365092>
- Roberts, P., & Priest, H. (2006). Reliability and validity in research. *Nursing standard (Royal College of Nursing (Great Britain) : 1987)*, 20(44), 41–45. <https://doi.org/10.7748/ns2006.07.20.44.41.c6560>
- Sandstø, R., & Reme-Ness, C. (2021). Agile practices and impacts on project success. *Journal of Engineering, Project, and Production Management*, 11(3), 255–262. <https://doi.org/10.2478/jeppm-2021-0024>
- Serrador, P., & Pinto, J. K. (2015). Does Agile work? - A quantitative analysis of agile project success. *International Journal of Project Management*, 33(5), 1040–1051. <https://doi.org/10.1016/j.ijproman.2015.01.006>
- Sheffield, J., & Lemétayer, J. (2013). Factors associated with the software development agility of successful projects. *International Journal of Project Management*, 31(3), 459–472. <https://doi.org/10.1016/j.ijproman.2012.09.011>
- Spreitzer, G. M. (1995). Psychological Empowerment in the Workplace: Dimensions, Measurement, and Validation. In Source: *The Academy of Management Journal*, 38(5), 1442-1465. <http://dx.doi.org/10.2307/256865>
- Spreitzer, G. M. (1996). Social Structural Characteristics of Psychological Empowerment. *The Academy of Management Journal*, 39(2), 483-504. <https://doi.org/10.2307/256789>
- Srivastava, A., Bartol, K. M., & Locke, E. A. (2009). Empowering leadership in management teams: effects on knowledge sharing, efficacy, and performance, *Academy of Management Journal*, 49(6), 1239–1251. <https://doi.org/10.5465/AMJ.2006.23478718>
- Stankovic, D., Nikolic, V., Djordjevic, M., & Cao, D. B. (2013). A survey study of critical success factors in agile software projects in former Yugoslavia IT companies. *Journal of Systems and Software*, 86(6), 1663–1678. <https://doi.org/10.1016/j.jss.2013.02.027>
- Stray, V., Moe, N. B., & Sjoberg, D. I. K. (2020). Daily Stand-Up Meetings: Start Breaking the Rules. *IEEE Software*, 37(3), 70–77. <https://doi.org/10.1109/MS.2018.2875988>
- Suherman, E., Suroso, Rismayadi, B., & Sihabudin. (2023). Mediating Effect of Psychology Empowerment on the Influence of Knowledge Sharing to Lecturer Performance: An Empirical Study in UBP Karawang, 20(1), 445–452. [https://doi.org/10.2991/978-94-6463-008-4\\_56](https://doi.org/10.2991/978-94-6463-008-4_56)
- Thomas, K. W., & Velthouse, B. A. (1990). Cognitive Elements of Empowerment: An “Interpretive” Model of Intrinsic Task Motivation. *The Academy of Management Review* 15(4), 666-681.

<https://doi.org/10.2307/258687>

- Uraon, R. S., Chauhan, A., Bharati, R., & Sahu, K. (2023). Do agile work practices impact team performance through project commitment? Evidence from the information technology industry. *International Journal of Productivity and Performance Management*, 11(2), 500-521. <https://doi.org/10.1108/IJPPM-03-2023-0114>
- Vargas De Noronha, A. P. (2018). Agile Practices and their impact on organizational culture Perceptions of IT employees operating in Ireland [unpublished doctoral dissertation]. Dublin Business School.
- Zhang, L., Kim, D., & Ding, S. (2023). Cultivating organizational performance through the performance measurement systems: Role of psychological empowerment and creativity. *Frontiers in Psychology*, 14(2),55-62. <https://doi.org/10.3389/fpsyg.2023.1116617>
- Zhang, X., & Bartol, K. M. (2010). Linking empowering leadership and employee creativity: the influence of psychological empowerment, intrinsic motivation, and creative process engagement, *Academy of Management Journal*, 53(1),107-128. <http://dx.doi.org/10.5465/AMJ.2010.48037118>
- Zimmerman, M. A. (1995). Psychological Empowerment: Issues and Illustrations. *American Journal of Community Psychology*, 23(5), 581-599. <https://link.springer.com/article/10.1007/BF02506983>