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INVESTIGATING THE MEDIATING EFFECT OF PROJECT MANAGEMENT TOOLS AND TECHNIQUES BETWEEN THE RELATIONSHIP OF LEADERSHIP BEHAVIORAL PRACTICES AND PROJECT SUCCESS: AN EMPIRICAL STUDY IN IT SECTOR OF PAKISTAN

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Abstract

This study investigates the mediating effect of Project Management Tools and Techniques (PMTT) on the relationship between Leadership Behavioral Practices (LBP) and Project Success (PS) in the IT sector of Pakistan. The research aims to bridge the gap in understanding how leadership behaviors influence project outcomes and how project management tools can enhance this relationship. A quantitative research approach is employed, collecting data from 210 IT professionals in Pakistan using self-administered questionnaires. The study explores key leadership behaviors such as communication, relationship management, and conflict management, and evaluates their impact on project success, mediated by PMTT.

The study finds that effective leadership behaviors positively influence project success. The integration of PMTT further enhances this relationship, providing a structured framework for project execution. The use of PMTT mediates the leadership behaviors, converting them into tangible outcomes such as improved coordination, time management, and stakeholder satisfaction. This research contributes new insights to the literature by exploring the unique role of leadership behaviors and project management tools in driving project success, particularly in the context of Pakistan's IT sector. The study highlights the importance of leadership development and PMTT implementation for improving project success in developing economies. The findings suggest that IT companies in Pakistan can enhance their project outcomes by fostering strong leadership practices and adopting standardized project management tools.

INTRODUCTION

1.1 Background

In Pakistan's IT sector, Project success is often presumed to depend on advance technology and technical expertise, despite rapid technological advancement a greater number of IT projects continue to fall short of their envisioned objectives not because of their technical limitations but due to weaknesses in leadership and the ineffective use of project management tools and techniques. It is commonly acknowledged that project are the main means by which companies carry out plans, handle change and provide value. Projects based work has spread beyond conventional industries in modern economies and is increasingly essential to

knowledge driven and service-oriented businesses. Projects for software development system integration and digital transformation initiatives are particularly important to the Information technology (IT) industry. In this industry project execution efficiency has a direct impact on long term sustainability and organizational competitiveness (Nguyen et al., 2024).

Rapid technical change, a high degree of uncertainty, and fierce international rivalry define the environment in which the IT industry operates. IT initiatives heavily rely on human skills, collaboration, and iterative thinking. Research shows that while IT-related projects are in settings, lack of coordination from teams and leaders, as well as poor managerial skills, are the substantial reasons for the lack of success in the initiative (Gunawan et al. 2025). Furthermore, IT-related projects failures in the lacking in command and control from leadership is a continuing bottleneck from the IT-related projects in the lower income countries (Ahmed et al. 2024). From the prior literature it is also clear that project success relates closely to stakeholder happiness, goal attainment, and quality of the outcomes, and for most of the modern literature is continues the trend of stakeholder satisfaction as the focus. Success from the more traditional project success criteria of time, money, and scope are also present in the most modern literature in the form of strategic objectives. IT projects success belongs to people and organizations for the value creation at the projects outputs in circumstances where change is the only constant (Rehan et al., 2024). Even with standard project management frameworks, failure rates remain considerable,

particularly in developing countries. Examples of persistent issues include unclear project goals, lack of communication, and scope changes. Empirical studies indicate that inadequate managerial controls and weak communication frameworks are among the principal reasons for project delays and cost overruns (Datta et al., 2025). Additionally, the IT project deliverables' intangible nature increases the risk of stakeholder dissatisfaction and complicates performance assessment (Gul et al., 2025).

The Project Leadership Behaviors during the leading process influence Project Teams and Project Activities through observable behaviors. Project Leadership is more than telling people what to do and exercising your position power. It is about everyday behaviors, such as how you interact, the way you communicate, and how you make decisions. These behaviors can be particularly important in IT projects, as cooperation and flexibility are key behavioral traits that are important to manage uncertainty (Gunawan et al., 2025). These leadership behaviors can be critical in the successful communication, relationship management, and mediation of Project Team Member, Executives, and Stakeholder. While relationship management aids in trust and cooperation in the Project Team, communication manages the association and aims of the Executives and Stakeholders. Leadership behaviors such as mediation in the management of conflicts helps to eliminate the negative impacts that may affect the level of performance. Research shows that more open and supportive behaviors of leaders promote higher team commitment and engagement (Rehan et al., 2024). Behaviors such as communication are important in facilitating Project Outcomes (Bhatti & Otamurodov, 2025). Leadership and Project Success are deeply embedded in Project Management Literature; leaders influence Project Outcomes through motivation of the team, coordination, and problem-solving directions.

According to Afaishat et al. (2025), effective leadership encourages the optimal allocation of strategic objectives into operational activities. Effectiveness relational leadership is positively correlated with project success. Unambiguous communication is effective in diminish unambiguous inner organizational relational conflicts. Having in place effective relational leadership, project advancement unambiguously is not hindered relationally. Literature posits that within complex project settings, leadership behaviors positively influence project success metrics (Ma et al., 2024). Nevertheless, the efficacy of a leader, from his/her disposition (Rahman & Rahman, 2025). With the aid of

PMTT (Project Management tools and techniques) relational
project interdependencies can be technologically managed (Chernova et al., 2023). Communication, risk management, scheduling, and performance measuring are some of the techniques that are incorporated in PMTT.
Decision-making quality results, accountability, and transparency are positively impacted by utilizing specific PMTT. With a project schedule and work breakdown structure, project managers are able to turn plans into executable tasks. Das et al. (2025) state, "Empirical studies show that projects which use standardized tools and processes perform more consistently." That said, leadership are tools that best rely on proper execution (Nguyen et al., 2024). Through the mediation process of PMTT, the impact of leadership behavioral patterns on project success is a bit clearer. While the behavioral patterns of a leader impact the selection, use, and adoption of a tool or a process, it also defines the project outcome. As a result, project management tools and techniques (PMTT) provide leaders, who are more team oriented, with a vehicle to encourage more structured planning and closer (Prieto, 2025). A study shows that formal control systems and structured communication gaps improves coordination, in which the beneficial impacts of leadership on project outcomes. PMTT provide operational channels that convert the leadership vision into tangible performance outcomes (Newton, 2018). The IT sector in Pakistan has positioned itself as a major contributor to the country's economic growth, employment generation, and revenue from exports. The growth of the sector has been supported by increasing digital consumption and opportunities for cross-border outsourcing. However, even after considerable growth, Pakistani IT firms continue to experience difficulties in achieving effective execution and management of projects (Sajid et al., 2025). The distinctive ways of managing projects in Pakistan are the result of the combination of the organizational and cultural characteristics, such as informal communication and strict centralization of decision-making. Poor systems of management coupled with inadequate leadership are the factors causing underperformance of projects in the emerging context (Arwadi et al., 2025). There has been a dearth of focus on the interrelationship between the behavioral practices of leadership and the combination of tools and techniques of project management (PMTT) in Pakistan's IT sector. Addressing this issue is crucial for improving project success and strengthening the contribution of the sector to the country's development.

1.2 Research Gap

1. Contextual Gap: The relationship between Leadership Behavioral Practices (LBP) and Project Success (PS) in Pakistan's IT sector, which is underrepresented in the literature on global leadership and project management, has not been empirically studied (Rehan et al., 2025).
2. Conceptual Gap: Inadequate analysis of how Project Management Tools and techniques (PMTT) integrate the technical and human aspects of project management to either mitigate or enhance the association between leadership behaviors and project success.

By filling in these gaps within Pakistan's distinct IT context, this study advances knowledge of how structured tools and effective leadership work together to generate project success in emerging economies and contributes to the body of research on global project management.

1.3 Problem Statement

The relationship between Leadership Behavioral Practices (LBP) and Project Success (PS) has been the subject of much research, however the majority of these studies concentrate on developed economies, leaving developing countries like Pakistan with little empirical support. Pakistan's IT industry, which is essential to the country's economic development, is nonetheless plagued by project delays, inefficiencies, and uneven results. Furthermore, there remains a significant gap in research examining the mediating role of project management tools and techniques (PMTT) in explaining how leadership behavioral practices (LBP) influence project success (PS).

1.4 Research Questions

Primary Research Question:

1. Does Leadership Behavioral Practices have an effect on Project Success? Research sub question:

(a) Does Communication have an effect on Project Success?

(b) Does Relationship Management have an effect on Project Success?

(c) Does Conflict Management have an effect on Project Success?

2. Does Project Management Tools & Techniques have an impact on Project Success?

3. Does Project Management Tools & Techniques mediate the relationship between the Leadership Behavioral Practices and the Project Success?

1.5 Significance of the Study

To magnify both theoretical and practical understanding of project management in developing economies, this study aims to explores the relationship between leadership behavioral practices and project success while using project management tools and techniques to mediate the relationship between them. It offers profound insight that brings clarity for policymakers, businesses, and IT managers in Pakistan to underpin leadership behaviors explicitly in communication, relationship management and conflict management while fostering the effective use of project management tools and technique improve project success, accountability and coordination within the IT sector.

1.6 Theoretical Framework

This paper is defined in Sociotechnical Systems Theory and Transformational Leadership Theory that form a unification of explanations to the behavioral and technical aspects of project management performance. The Sociotechnical System Theory (Appelbaum, 1997) emphasizes that organizational effectiveness depends on the alignment between the social system (people and interactions) and the technical system (tools and techniques). Within the framework of this study, Project management tools and techniques represents the technical component that structures, supports and enhance leadership practices during project life cycle. These tools and techniques help in monitoring, coordination and decision making and in so doing strengthening the practical application of leadership behaviors such as communication, relationship management and conflict management in the project environment. The Transformational Leadership Theory (Bass, 1999) explains the behavioral dimensions of leadership behaviors by focusing on how leaders inspire, motivate and influence their teams or individuals to achieve higher performance. This theory supports the selected leadership behaviors (communication, relationship management and conflict management) by conceptually aligning them with transformational behaviors. Effective communication reflects inspirational motivation and clarity of vision, relationship management represents the individualized consideration and trust building and conflict management aligns with intellectual stimulation and constructive problem solving. Together, these leadership behavioral practices form the human centered component that drives collaboration, team unity, and eventually project success.

By integrating both theories the framework highlights that the project success in not driven solely by leadership behaviors or technical tools in isolation but by their interaction. Therefore, project management tools & techniques is a mediator that outlines the role of leadership behavioral practices on the success of a project. Good leadership behavioral practices promote or spur the use and application of project management tools and techniques (PMTT), which subsequently enhance project structure, coordination and performance outcome. In summary, the theoretical framework assumes that good leadership behavioral practices are positively correlated with project success and the mediating variable is the Project management tools and techniques, which is the process whereby the leadership behavioral practices are converted to successful project outcome in the Pakistan IT industry.

1.7 Research Objectives

The main objective of this research is to examine the relationship between Project Success (PS) and Leadership Behavioral Practices (LBP) in Pakistan's IT industry, with Project Management Tools and Techniques (PMTT) serving as a mediator variable.

To this purpose, the study aims to:

Primary research objective:

1. To find out the effect of Leadership Behavioral Practices on Project Success. Research sub objective:

(a) To find out the impact of Communication on Project Success.

(b) To find out the impact of Relationship Management on Project Success.

(c) To find out the impact of Conflict Manag ement on Project Success

2. To find out the impact of Project Management Tools & Techniques on Project Success.

3. To determine the mediating role of Project Management Tools & Techniques between the Leadership Behavioral Practices and the Project Success.

1.8 Definition of Study Variables

1.8.1Leadership Behavioral Practices

According to Rehan et al. (2024), Leadership behavioral practices refer to an effective leader's leadership behavior that is consistent and observant to motivate and guide an individual towards achieving project goals.

Realistically, what leaders do on daily basis is not just their attributes or formal authority. How leaders communicate, manage conflict, build relationship make decision, respond to challenges and support team members are included in these practices. Leadership behavioral practices play an important role in shaping the work situation, affects how team performs and find out outcomes including collaboration, trust and overall success.

In the most changing environments like project, leadership behavioral practices are often understood as people focused behavior which id translated to leadership aim into action, specifically through communication, conflict management and relationship management

1.8.2Communication

According to Mamakou and Meridou (2025), communication is a leadership practice that promotes openness, trust, and productive teamwork all of which are essential for the success of a project. Better communication help team coordinate better while yielding better project outcomes. In an organization, communication serves as an essential tool that build a bridge between employees, leaders who communicate better can achieve better quality of work form the workers (Bhatti & Otamurodov, 2025). In project environment informing stakeholder is must, project managers use effective communication to give updates of the project and integrate stakeholders requirements in the projects, if necessary. In an IT sector, projects are agile and bounded by time so it is important for the leader or Project Manager to use communication to understand, identify and solve any gaps in information.

1.8.3Relationship Management

Relationship management build, maintain and strengthen relationship with the shareholders requirements through trust, constant communication and commitment to achieve intended objectives of the project. In context of projects, relationship management is used by leader to understand stakeholders needs, conform to expectation and improve expectation and enhance collaboration which leads to loyalty, high satisfaction and long-term commitments. Relationship management is a leadership practice that fosters psychological safety, trust, and open communication, which improves teamwork and project outcomes (Mansour et al., 2025).

1.8.4Conflict Management

Conflict management is a practice that deals with conflicts or disagreements and aims to reach a positive solution rather than letting them get worse to reach the intended progress.

According to Guo (2025), as a leadership Behavioral practice conflict management involves how leader are able to understand, identify and

solve conflicts and apply relevant plan of action like teamwork, compromise and building relationship while communicate differences among team members to prevent escalation to make sure project is effectively coordinated and yield successful outcomes.

A volatile environment like the project, meaning they are demanding and time sensitive in nature. Some common conflicts that arise in the projects are due to limited resources, ineffective or poor communication, personalities differences, budget, timeline and different stakeholders needs etc. are caused due to stress or weak leadership practice. To find a solution a leader needs to effectively solve these conflicts by identifying, understanding and applying appropriate to the issues.

1.8.5Project Management Tools & Techniques

Project management tools and techniques (PMTT) is defined by Patanakul et al. (2010) as organized mechanisms that improve control, coordination, and decision-making throughout project life cycles. Examples of these mechanisms include scheduling tools, risk management models, and performance dashboards. Throughout the project life cycle, a formal mechanism provided by the project management tools and techniques helps make decision, control cost, schedule and performance (Newton, 2018). The world is rapidly changing as the tools and technologies used, to deal with the project's complexities, a Project manager must fully understand the tools and technologies offer by Project management. In IT projects PMTT provides digital solution to manage project time, scope, and cost. It also helps with team coordination, resource allocation, and project delivery. Project Management Tools and Technologies also a solution when there is a communication or information gap in the project. From planning to delivery Project Management Tool and Technology can be integrated in each phase of the project.

Pakistan's IT is evolving, to keep up with the global market or projects it is essential that IT sectors must us Project Management Tools and Technologies to deliver high quality projects. Projects in IT sector are agile and time sensitive, so a Project Managers or a Leaders must integrate PMTT in the projects to track the performance of the project and make sure that it produces intended outcomes.

1.8.6Project Success

Project success often revolved around the idea of meeting the goals that are set at the beginning of the project while staying in within the boundaries of time, scope and cost with quality being the main focus. Mamakou and Meridou (2025) points out that in IT projects project success is defined as meeting the stakeholders' needs and satisfying them while staying in the predefined boundaries of quality, time, scope and cost. Success is not just about ticking boxes but how project is effectively executed and if its outcomes truly satisfies both external and internal stake holders (Shaukat et al., 2022).

Kerzner and Saladis (2017) further explains that quality is the necessary requirement of the project and it should ensure the project outcomes are aligned with the stakeholder's requirements. Project timeline is important, all activities or tasks of the project must be completed within the time set in the beginning of the project (Yap et al., 2022). Blak Bernet et al., (2023) states that when it comes to project success stakeholders tends to value the long term impacts of the project rather than project success as a traditional "iron triangle" of scope, cost and time.

LITERATURE REVIEW

2.1 Communication and Project Success

One of the most important leadership behaviors that determines how well a project is coordinated, the motivation of the team, and project success is communication. It is a process where information is shared among the leadership, goals are explained, and team members are aligned with the goals. Effective communication is essential in project environments, especially in the IT sector, where geographic dispersion of the teams is a common occurrence that enhances transparency, reduces conflict, and fosters collaboration (Cervone, 2 014). It is not only through the delivery of instructions that leadership communication takes

place, but listening, feedback, and the emotional tone of communication are also part of leadership communication. As pointed out by Aal (2025), effective leaders are known to communicate effectively and often inspire trust and participation in IT professionals. Likewise, Ly et al. (2025) observed that charismatic leaders who are empathetic and clear in communication will have a higher chance of improving the adaptability of a team in a dynamic project environment. Since in an IT setting, a project team has to rely on a continuous coordination process, leadership communication emerges as a critical behavioral norm to maintain the alignment and the accomplishment of project objectives.

Effective communication practices are essential in influencing the social and psychological dynamics of IT project teams. Research indicates that leaders who advocate for two-way communication and transparency improve psychological safety, information dissemination, and innovative problem-solving among employees (Francois & Amolo, 2025). He et al., (2025) specifically emphasized that transparent communication enhances staff involvement and dedication to project results. Dikmen et al. (2024) also said that when leaders communicate well, it cuts down on misunderstandings in complicated projects, which cuts down on rework and boosts team morale. Nanova (2025) also said that leaders who focus on communication improve performance by making sure that everyone in the team has the same goals and building trust between team members. These findings indicate that communication transcends a mere technical transfer of information; it constitutes a behavioral competency that enhances collaboration and facilitates the overall effectiveness of IT initiatives. In today's IT companies, leaders communicate

in more ways than just face-to-face meetings. They also use digital collaboration tools and virtual communication. Gul et al. (2025) said that leaders who change how they talk to people when they use digital tools like online meetings, project management systems, and real-time chat make it easier for remote teams to work together. Hai et al. (2025) also stressed that leaders need to find a balance between being efficient with technology and being sensitive to other people's feelings, since too much reliance on digital communication might make people feel distant. A significant correlation between communication competency in IT leadership and creativity, as leaders who clearly express visions and solicit input motivate people to generate ideas. Also, Renard, C. (2022) showed that open communication cuts down on disagreements between departments and helps people make good decisions on projects. Volokh (2024) also said that talking to people with empathy can help with work stress, especially on IT projects that move quickly. All of these studies show that good communication, whether it's online or in person, is still very important for managing team dynamics and keeping up performance in IT companies.

One of the most important leadership behaviors that defines the extent to which project teams will function efficiently and be successful is communication (Ameer et al., 2025). Mamakou and Meridou (2025) described that effective communication guarantees alignment of goals, coordination, and trust among the project stakeholders. Mahaney and Lederer (2011) noted that open communication and open reporting enhance teamwork, especially in cross-functional teams. Rahman and Rahman (2025) established that leadership feedback is continuous to reduce the occurrence of misunderstandings and boost morale within a team. Čulo and Skendrović (2010) state that communication may be harder to master, but as a key part of project management, putting effort into it is essential for success. Communication is therefore not only a task of a manager but a behavioral skill that keeps project teams engaged, motivated and understanding one another.

Communication plays a key role in the management of uncertainty and collaboration among geographically dispersed teams in IT projects. Kelemen et al. (2025) noted that effective communication enables teams to change rapidly in response to shifting client needs and technical issues. As pointed out by Fifani et al. (2025), project communication ensures that the

project phases are synchronized to minimize the chances of delays that can be costly. According to Abiodun et al. (2025), agile software projects are more likely to become efficient in communication when using digital collaboration tools. Khatwani (2025) suggested that communication effectiveness is
directly related to the project performance indicators like time, cost, and quality compliance. Therefore, a transparent and open communication channel developed by the leaders would promote accountability and reliability among IT teams.

Communication, in turn, plays an even more important role in developing countries, where the problem of cross-functional coordination or technological limitations occurs (Guo, 2025). According to Williges et al. (1966), culturally adaptive communication improves team cohesion, as well as stakeholder alignment in resource-scarce environments. Rajakaruna et al. (2025) discovered that leadership communication helps to counter the remote collaboration difficulties of developing economies. Kiani Mavi et al. (2024) have also highlighted that communication practices are effective in overcoming the barrier created by limited digital infrastructure. This reduction in uncertainty in the project objectives and expectations was previously demonstrated by Lehtiranta et al. (2012) who indicated that clear communication is a way of lowering uncertainty in the project goals and expectations. Communication therefore plays a strategic role in linking leadership intent on one side and effective project implementation on the other, particularly in the developing environment.

Communication has become a key leadership skill in the IT sector of Pakistan that determines the success of a project (Sajid et al., 2025). Waseem et al. (2025) proved that frequent contact between the project leaders and stakeholders creates trust and supports team performance. The article by Alam et al. (2025) reported that transparency in communication improves coordination and decision-making in agile environments. The authors of the article by Khattak et al. (2025) described that a well-organized system of feedback can lead to teamwork between cross-cultural, as well as remote teams. As has been observed by Shahid et al. (2025), the effectiveness of communication lowers the risk associated with the project and enhances client satisfaction in technology-based firms. The IT industry in Pakistan is undergoing digital transformation, and since it is a behavior-enabled leader, leadership communication is a strategic process of project and project alignment, innovation, and long-term success.

In Pakistan's IT sector, communication as a leadership habit is even more important because of the country's diverse cultures, strict hierarchies, and quickly changing technology needs. Pakistani IT executives typically oversee teams that are made up of people from different cultures or backgrounds. This makes it important for them to be clear, understanding, and good
listeners (Browne et al., 2016). Leaders that are open and honest with their employees and let them help make decisions build trust and ownership, which makes the team work better together and get more done. Studies demonstrate that the success of IT projects in Pakistan depends a lot on how successfully project managers help stakeholders, clients, and developers talk to each other (Aal, 2025). Also, sympathetic and participative communication can assist get around problems that come up in hierarchical work cultures, making it easier to coordinate in fast-paced project situations. As Pakistan's IT industry continues to grow around the world, leaders need to communicate in ways that encourage openness, criticism, and teamwork to keep projects going and stay ahead of the competition.

H1: There is a significant positive relationship between Communication and Project Success

2.2 Relationship Management and Project Success

Relationship Management (RM) is a widely acknowledged essential behavioral leadership skill that empowers project managers to cultivate, maintain, and utilize robust interpersonal and inter-organizational relationships. In IT project

settings, good relationship management makes sure that everyone's expectations are in line, makes it easier for people to work together, and builds trust, which are all important for dealing with the ever-changing nature of technology-driven environments. Research indicates that CRM-based relationship practices, including organized customer onboarding, feedback mechanisms, and service level agreements, can improve project clarity and reduce the need for rework (Chaikovska, 2025). In the same way, adding human capital to sales and delivery systems that focus on relationships improves communication and product alignment across IT businesses. Zou et al. (2014) emphasizes that in a complex project, to increase the likelihood of the project success by aligning the stakeholder interest and minimizing conflicts, Relationship management acts as a strategic capability. Establishing relational governance in projects that use emerging technologies like AI and IoT diminishes ambiguity among technical and non-technical stakeholders (Rosca & Stancu, 2025). Furthermore, in cybersecurity initiatives, established relational frameworks and trust among teams and vendors expedite information dissemination and enhance performance.

Healthy relationship management will also build trust and transparency in addition to improving cross-functional coordination in IT organizations. A culture of relationship accountability between sales, engineering, and delivery teams enhances the quality of decisions

made on projects in line with the value and quality requirements of the clients. The long-term customer relations do so by developing feedback mechanisms that enable the continued improvement process and flexible adaptation to the needs of the clients (Villanueva et al., 2007). Relational trust and previous partnership history can reduce coordination risks and transaction costs significantly as the examples of IT offshoring illustrate (Guindi & Roushdy, 2025). Agile leadership practices also rely on relationship management contributing to greater flexibilities and reallocation of resources in the evolving project conditions (Arshad and Durai Pandi, 2025). Moreover, relational behaviours that involve mutual support and conflict management are team oriented and therefore enable IT project teams to be stable in high pressure and during complicated development cycles (Fathima & Suresh Kumar, 2025). Combined, these studies can show that both technical and social integration which are important aspects of IT project success is a result of relationship management.

In an IT organization, relationship management is a form of social enabler that allows linking leadership behavior to the quantifiable project outcomes. Creating interpersonal trust on purpose enables leaders to enhance intergroup collaboration and knowledge exchange within teams, boosting their efficiency and innovation (Chaudhry et al., 2025). Relationship-based communication assists in matching technical choices with overall business choices, especially in the implementation of BPM or CRM tools (Lau et al., 2016). Workshops, training, and constant support of clients enhance the acceptance of new systems and successful implementation of complex software solutions. Tretiak and Rak, 2025 found out that in projects use of LBP like Relationship management helps project manager maintain relation with stakeholder and ensures that projects goals are sync with the stakeholders requirements. As a relational leadership skill, emotional intelligence enables the IT project managers to foresee stakeholder issues and keep their morale high during the project lifecycle (Fagarazzi, 2025; Zamir et al., 2025). Relationship-oriented leadership, therefore, does not only enhance coordination but also the aspect of responding to uncertainty, which goes hand in hand with the agile and innovative aspects of IT projects (Alsalman & Chyad, 2025). Relationship management is a very important leadership behavior that determines how project managers establish trust, cooperation, and shared understanding among the stakeholders (Ameer et al., 2025). Zhou and Deng (2025) highlighted that having good relationship helps keep

the team together and ensures a smooth flow in carrying out the project. Amies et al. (2025) concluded that leaders that focus on engaging the stakeholders make collaboration and improve

stable performances. Cortellazzo et al. (2025) described that interpersonal sensitivity enables leaders to strike a balance between conflicting interests and remain motivated to continue working on complex projects. Pretorius et al. (2023) came out with the conclusion that when a relationship is managed well it will enhance commitment and make the change process less resistant, which is likely to make the project more successful.

Relationship management in project driven environment facilitates open communication and collaboration in different functional fields (Gunawan et al., 2025). Rajakaruna et al. (202 5) have emphasized that relational leadership helps to create psychological safety to enable the team members to share their ideas without any fear of disagreement. Kagawa Singer and Kassim Lakha. (2003) also noted that positive relationship practices can help in minimizing miscommunication, as well as enhancing accountability. Kiani Mavi et al. (2024) established that transparent relations are essential to enhance knowledge sharing within distributed teams of projects. According to Zhang et al., (2024), leaders who foster professional relationships improve the level of trust between the management and technical personnel in delivering projects.

It is indicated that leadership practices that pay attention to relationship building have been associated with higher levels of adaptability, innovation, and performance in technology-driven industries (Khattak et al., 2025). According to Zamir et al. (2025), relationship-oriented leaders support cooperation and involvement in high pressure IT projects. According to Alam et al. (2025), the relationships between leaders and subordinates that are strong facilitate commitment that leads to efficiency in agile environments. A positive relationship with the stakeholder reduce the risk of the project and conflicts escalation. Shahid et al. (2025) highlighted that leadership relationships based on trust enhance client satisfaction and long-term partnership. De Preston et al. (2020) also contributed that effective IT initiatives are based on the capacity of the leaders to address relational complexity among the multicultural and distributed teams.

The concept of relationship management has gained traction in the IT sector because in Pakistan companies are growing operations and international relationships (Zamir et al., 2025). Serrador and Turner (2015) show that project success goes beyond efficiency and depends on stakeholder satisfaction, underscoring the role of effective relationship management. According to Khattak et al. (2025), establishing good working relationships can foster cross-cultural and communication barriers in offshore partnerships. As mentioned by Sajid et al. (2025), the management of relationships with stakeholders enhances the efficiency of projects and retention of clients. Shahid et al. (2025) noted that relationship centered leaders encouraged transparency and long-term trust between project teams. Mughal et al. (2019), sentenced that one of the factors that need to be enhanced to guarantee long-term project success in the changing IT environment of Pakistan is the development of relational leadership qualities.

Relationship management is becoming a key leadership behavior in determining the success of projects, as well as organizational growth in the context of the IT industry in Pakistan. Considering the nature of the sector, focusing on outsourcing, client-based customization, and cross-functional development teams, good relations are essential in getting transparency and consistency among the stakeholders (Lima & Quevedo., 2020). The studies of the IT projects of Khyber Pakhtunkhwa show that project managers with effective relations with the top management and sponsors can mobilize resources and communication barriers more effectively (Zamir et al., 2025). Such relationship-oriented behaviors have also been known to lead to a greater degree of psychological safety and knowledge-sharing of technical employees, which positively affects productivity and innovation (Fathima & Suresh Kumar, 2025). Furthermore, as the IT businesses in Pakistan grow to cover the international markets, relationship management can be used to overcome the cultural and operational differences with offshore companies

to coll aborate through mutual trust (Guindi and Roushdy, 2025). Altogether, these thoughts imply that the application of relationship management to the leadership practices can contribute to the improvement of the project outcomes and the maintenance of the competitive advantage of Pakistan in the IT-related environment significantly.

H2: There is a significant positive relationship between Relationship Management and Project Success.

2.3 Conflict Management and Project Success

Conflict management is an important leadership practice that guides a smooth interaction and productivity among the teams in IT projects. Contemporary studies perceive conflict not merely as one of the possible distortions, but as a stimulus to creativity and innovativeness in case it is handled in an appropriate manner. Emotional intelligence (EI) has become an important
facilitator of effective conflict management that enables project leaders to control emotions, remain calm, and facilitate open communication among staff members (Sinan, 2025; Rahman & Rahman, 2025). In agile and technology-oriented settings, emotionally intelligent leaders create the trust and ensure that minor conflicts do not turn into significant interpersonal conflicts (Sinan, 2025). Empathy, inclusion, and participative decision-making are adaptive leadership behaviors that help project managers to address various team dynamics effectively and stay focused on common goals (Guo, 2025). Also, according to the study of Savage, 2025 found that the leadership behaviors helps leaders to make project related sound choices to avoid scope creep and deliver a high quality project outcomes that are aligned with the organizational goals. Consequently, the capacity of maneuvering conflict positively with the help of EI and empathy is a soft skill as well as a strategic leadership skill in the IT project environments.

Conflict management is important in maintaining performance in IT organizations where performance is greatly dependent on cross-functional cooperation and time-sensitive deliverables. Research indicates that emotionally intelligent leadership enhances the level of communication, fosters unity, and reduces tension during tasks, which translates into an increased rate of project success (Chaudhry et al., 2025). Project managers who use cooperative or compromise-based conflict resolution styles promote the cohesion of the members and their satisfaction with the client in software development projects (Fifani et al., 2025). Additionally, the application of neuro leadership strategies, including the emotional control and empathy, enhances decision-making in stressful situations and minimizes the reactive behavior that tends to disrupt the IT projects timetables (Khatwani, 2025). Conflict management is therefore a behavioral process, which connects leadership behavior and practices with enhanced coordination, process innovation and improved organizational performance (Hartati et al., 2025).

Some of the studies underscore the fact that leadership habits have a direct impact on the interpretation and reaction of conflict within the team. The empowering leadership styles that are based on trust and autonomy assist in turning task-related conflict into a problem-solving and innovative prospect (Rahman and Rahman, 2025). Conflict management is a common approach that helps a project manager to identify and understand the internal problems which may arise in the project team and solve those issues using suitable strategy to achieve harmony with in the team. Conflict management leaders that engage in antagonistic behavior by fostering psychological
safety and collective ownership amongst the employees averts confrontational mindsets and maintains motivation, even during intense project development stages (Guo, 2025). The combination of digital tools and knowledge-management systems contribute even more to the capacity of leaders to notice the initial signs of conflicts and avoid the development of further ones (Karthikeyan, 2025). Conflict-management competence is not constant, however; it develops as the leaders are emotionally aware, more flexible with technology, and the culture of transparency and learning within the

organization (Lima & Quevedo., 2020).

Verma (1998) highlights that conflict is inevitable in projects, but when managed properly, it can strengthen team dynamics and support better decision-making, ultimately contributing to project success. Tretiak and Rak (2025) described that role ambiguity and conflicting goals are the most common causes of conflicts in collaborative working conditions, and therefore, conflict resolution in such a situation is crucial to the stability of a project. Pigola et al. (2025) discovered that negotiation and mediation are two positive strategies that leaders can use to improve the decision-making process and collaboration in teams. As pointed out by Fagarazzi (2025), conflict management also promotes better communication, which limits chances to become misaligned during project implementation. According to Mamakou and Meridou (2025), leaders who address conflicts in advance encourage the development of trust and psychological safety, which is a key to the long-term success of a project.

Conflict management is an essential skill of leadership in the IT industry, where the lack of interdependence and innovation is a strong force (Gunawan et al., 2025). According to Amies et al. (2025), leaders who intercept conflicts at the initial stages avoid a situation where conflicts increase in magnitude and the team environment remains positive to promote innovation. The study conducted by Chaikovska (2025) revealed that the use of emotionally intelligent conflict resolution can improve the engagement and commitment of employees in an agile team. Open communication and feedback procedures reduces stress and turnover of IT project teams. Fifani et al. (2025) emphasized that a good conflict management approach ensures that problems are resolved on time, which enhances a better performance of the project. Combined, these results support the fact that conflict resolution is not a process related to avoiding conflict but turning it into a learning and collaboration experience.

Organizational and cultural diversity presents a very critical conflict management situation, especially in the developing economies (Guo, 2025). The research by Rajakaruna et al. (2025) concluded that integrative conflict resolution strategies allow project leaders to gain better coordination within the multicultural team. According to Ali and Siddiqui (2025), empathy and mutual respect are considered to be the main aspects of successful conflict management in resource constrained environments. Senthil et al. (2025) found out that the leadership practices that foster impartiality and discussion minimize the cross functional IT project misunderstandings. Kiani Mavi et al. (2024) pointed out that formalized structures of communication block the escalation of a project in which formal governance is low. Vu and Carmichael (2009) previously demonstrated that constructive resolution of conflicts fosters long term stakeholder trust that is able to improve the resilience and sustainability of the project.

Conflict management has become a conclusive leadership skill within the IT industry of Pakistan in fulfilling the success of the project. Shahid et al. (2025) discovered that conflict mediated leaders have a better team morale and client satisfaction. Khattak et al. (2025) clarified that open communication encourages teams to manage pressure and deadlines without any interpersonal disintegrations. Zamir et al. (2025) also found that, in IT organization, team retention and productivity are improved when teams engage in collaborative conflict management. The combination of emotional intelligence and systematic conflict management reinforce innovation and flexibility. Mirza et al. (2025) concluded that the long-term competitiveness of the digital project ecosystem in Pakistan can be greatly facilitated through an investment in leadership training in the sphere of conflict management.

In the Pakistani IT industry, conflict management has become a topic of growing interest as the software development and outsourcing sectors of the country are expanding and individuals have to work across the cultural boundaries and meet the strict timeframes, which tend to cause interpersonal conflicts. Empirical literature indicates that project managers who possess high EI can successfully mitigate both

relational and task-based conflicts in their efforts to enhance team collaboration and outcomes of the project (Chaudhry et al., 2025). Pakistani IT companies are starting to embrace the necessity of EI-oriented leadership training to manage conflicts positively and maintain the work productivities even in remote and hybrid working conditions. This kind of behavioral intervention will not only make projects delivery better but also improve employee
retention and client satisfaction which is a key success factor in the competitive global IT market. Therefore, emotional intelligence-based conflict management and adaptive leadership are still fundamental in the project leadership of the changing IT industry in Pakistan.

H3: There is a significant positive relationship between Conflict Management and Project Success

2.4 Leadership Behavioral Practices and Project Success

Leadership Behavioral Practices (LBP) are the ways that leaders talk to their teams, act, and interact with others to help them reach project goals. In the Information Technology (IT) sector, where new ideas come forth all the time and people from differen t departments work together, good leadership is very important for success. Fairness, open communication, and collaborative decision-making are all examples of inclusive leadership behaviors that have been shown to improve employee engagement and trust in IT companies (Nahar et al., 2025). Likewise, servant leadership that emphasizes mentorship, active listening, and the empowerment of subordinates enhances knowledge exchange and organizational learning within IT companies (Rehman et al., 2025). Transformational leaders are also very important since they encourage innovation and lower stress levels in tech-heavy workplaces (Džambić et al., 2025). Empowering leadership behaviors further empower team members to take ownership of decisions, fostering creativity and flexibility in dynamic IT projects (Varshney & Varshney, 2025). Finally, a balanced mix of transformational and transactional leadership has been found to make teams work better together and do better on complicated tech projects (Ling & Teh, 2025). In IT companies, the way executives act can have a big impact on how creative, productive, and cooperative staff are. Leaders who show empathy, emotional intelligence, and honesty establish trust and psychological safety, which are important for creativity (Palmer et al., 2001). Emotional leadership skills, like active listening and acknowledgment, improve interpersonal interactions and the exchange of knowledge among IT workers (Schutte rt al., 2021). Leadership that focuses on communication also helps project teams and outside clients understand each other better, which makes it easier to deliver projects (Dugbartey & Kehinde, 2025). Studies also show how important it is for leaders to demonstrate conduct that shows up on time, is fair, and is responsible (Larsman et al., 2024). When these behaviors are continuously done, they not only
boost employee morale, but they also make the organization more inventive in a world where technology changes quickly (Milli & Negi, 2025). To ensure long-term project success, modern IT companies need executives who can blend task orientation with people orientation. Transformational leaders inspire workers by sharing a clear vision and promoting new ideas. Servant leaders, on the other hand, promote teamwork and long-term loyalty (Rehman et al., 2025). Inclusive leadership behaviors foster a psychologically comfortable environment that encourages people to share ideas and embrace risks, which is crucial in technology-driven initiatives (Nahar et al., 2025). Giving people power, such giving them authority and acknowledging their skills, makes them feel more responsible and involved (Varshney & Varshney, 2025). Moreover, sympathetic and relational leadership aids in allevi ating stress and preventing burnout among IT professionals facing stringent deadlines (Ma et al., 2024). These behaviors together make sure that IT projects not only fulfill their performance goals but also keep a positive work environment that encourages creativity and keeps people on the job (Džambić

et al., 2025). The Leadership Behavioral Practices (LBP) are the visible behaviors or decision-making styles that executives apply to influence, motivate, and direct the teams in order to accomplish the project goals. Leadership behaviors in project contexts define the ability of teams to coordinate, deal with uncertainty, and be productive (Budacia & Budacia, 2025). The three main dimensions of the behavioral practices of leadership: communication, relationship management, and conflict management have a combined definition of the way a leader is interacting with his or her team and other stakeholders. Communication helps to keep the information flowing as scheduled, reduce the occurrence of miscommunication, and time wastage in implementing a project.

Relationship management assist in developing trust, loyalty and purpose in the team, which leads to an environment where cooperation succeeds. In the meantime, managing conflict in a constructive way helps project leaders to leverage conflicts into learning and ensure that the team stays in harmony (Saeed et al., 2014). A combination of these behavioral aspects constitutes a leadership framework that fosters innovation and enhances the success of the project within a dynamic environment (Tretiak & Rak, 2025). The Leadership Behavioral Practices emerge as even more important in the context of IT project due to the high complexity, fast technological processes, and team composition. The ability of the leaders to communicate effectively promotes

transparency and lessens risks to do with vagueness in project goals and expectations (Gunawan et al., 2025). Relationship management further increases the collaboration process in cross functional teams where there is high interdependence and members of the team can work together despite the diverse expertise (Mamakou & Meridou, 2025).

An active approach to conflict management can stop the problems of a scope creep or a human-to-human conflict situation, which can quickly turn into the bigger issues of the project (Javid et al., 2025). Research shows that IT project leaders who strike a balance between these dimensions of behavior have better decision making and team performance (Thite, 2000). This means that the adoption of holistic frameworks of leadership behavior is useful in ensuring that IT organizations remain productive, agile, and satisfy clients throughout the project lifecycle (Rajakaruna et al., 2025). Leadership Behavioral Practices can play a vital role in dealing with such challenges as a lack of resources, ambiguity in hierarchies, and cultural diversity in IT teams in developing countries. Leaders with effective communication behaviors ensure psychological safety and raise confidence levels within the teams to handle uncertainty (Matsunaga, 2025). The development of stakeholder engagement in this situation through relationship management is important in gaining support and the continuity of project activities (Guo, 2025). The hierarchical cultures tend to ignore conflict management, which is required to allow open debates and avoid passive opposition eroding performance (Shiferaw, 2024). The focused idea is that leadership practices that encourage inclusiveness, empathy, and flexibility increase the probability o f project success in new markets to a considerable extent. Therefore, in the IT organizations of the developing countries, successful LBP is a strategic instrument that mediates the technical performance and human interaction (Vu & Carmichael 2009).

Leadership Behavioral Practices within the Pakistan IT industry is an important fact in the relationship between the effectiveness of the managers and the project performance. This increased rate of the software and online services market has created the necessity to have leaders that are able to manage a virtual team of workers that may reside in other geographic regions, cultures, and time zones (Li & Yazid, 2025). It has been established that communication practices that are transient and feedback enhance coordination and project delivery in Pakistani IT firms (Rodrigues & Alves, 2025). Relationship management also contributes to its strengthening of the organizational culture and trust that strengthens long-term partnerships in the clientele and the retention of the employees (Sharma, 2025). Conflict management as

practiced in the form of open discussion and consensus building minimized project delays and improved the innovativeness (Saeed et al., 2014). Altogether, successful LBP creates highly performing teams that can overcome the challenges of the rapidly changing IT environment in Pakistan, which will ultimately lead to the successful sustainability of projects and competitiveness in the international environment (Waseem et al., 2025). Leadership Behavioral Practices (LBP) is a proven critical factor of project success (PS), especially in the dynamic and knowledge intensive industry as is the case in the IT industry. LBP covers communication, relationship management, and conflict management behavior that, when combined, determine the level of the performance and the achievement of project teams (Zamir et al, 2025). Leadership behavior is useful in explaining objectives, inspiring groups, and aligning individuals with corporate objectives, which finally leads to better project delivery.

According to the scholars, effective leadership behavior fosters trust and commitment in the team members and allows them to make better decisions and handle risks (Gunawan et al., 2025). The relationship between leadership action and project performance highlights the importance of the managerial behavior as a way of converting the potential of the team into a real achievement. This relationship is further vital in IT projects, where innovation and coordination of the team are a steady stream to meet time, cost, and quality targets (Liu et al., 2025). Communication is one of the pillars of the LBP dimensions as it ensures project success through transparency, information sharing and alignment of stakeholders. Effective leaders also reduce the incident of misunderstanding, expectations, and a culture of collaboration that improves efficiency in the project (Fifani et al., 2025). Effective communication among the developers, managers, and clients enhances responsiveness to change and ability to resolve problems in complex IT environments (Tretiak and Rak, 2025). Research indicates that a two-way communication promotes psychological safety and innovation which result in more resilient and adaptive teams (Hai et al., 2025). In addition, effective communication by leaders facilitates accountability, which makes teams achieve milestones and quality standards more predictably (Budacia & Budacia, 2025). Since distributed or virtual teams are becoming more and more central to projects, the leadership communication is becoming a significant foreteller of cohesion and project success .

Another major aspect of leadership is relationship management, which is also vital in the project success. Leaders with effective relationship management foster cooperation and respect among the stakeholders, which is useful in overcoming uncertainty and facilitating the attainment of common goals (Mamakou & Meridou, 2025). Relational leadership in IT projects where multidisciplinary teams are required to collaborate fosters the exchange of information and synergy of problem solving (Rajakaruna et al., 2025). Through healthy relationships, leaders will increase the rate of commitment and lower the rates of turnover intentions, which directly affect the performance of the project (Ahmed et al., 2024). This quality of balancing power and empathy will form long-term trust and lead to the team resilience in pressure situations (Amies et al., 2025). Also, the relationships between the leader and its members can be positive, and it facilitates the integration of project tools and techniques, which enhances the connection between human and technical factors of success.

The third important dimension of LBP is the conflict management that also plays an important role in the project success. IT projects are prone to conflicts with each other because of interdependence of the tasks, the availability of resources, or the priorities of the various stakeholders (Guo, 2025). Leaders who embrace constructive conflict management techniques like collaboration and compromise will be able to turn conflict situations into learning and innovation opportunities (Khattak et al., 2025). Research points out that conflict management improves the quality of decisions made and the morale of team members and eliminates delays in the project processes (Vu & Carmichael, 2009).

Conflict management is considered critical in the development economies, where industry limitations are more underpinning productivity and morale levels (Javid et al., 2025). In addition, the leadership styles that focus on transparent communication and equity foster a sense of belonging and decreases project delays, which raises the chances of project success (Fifani et al., 2025).

The correlation between LBP and project success has been developed with growing regard in the IT industry of Pakistan as a result of its rapid growth and the project models that depend on the collaborative approach. Studies indicate that leaders with strong communication, relationship management, and conflict management skills can easily manage the dynamics of Pakistan-based IT firms that rely on projects (Sajid et al., 2025). The competitive nature of the sector demands that project managers strike a balance between technical skill and people-focused leadership approaches so that quality deliveries and on time delivery can be achieved (Alsalman & Chyad, 2025). Furthermore, the collectivist nature of Pakistan places interpersonal harmony as the significant value, so there is a high necessity of relationship management and conflict resolution in the project leadership (Waseem et al., 2025). With the growth of IT organizations functioning in the global markets, the capability of leaders to combine behavioral practices with sophisticated tools and techniques is becoming a source of project success (Khattak et al., 2025). Therefore, intensifying leadership behavioral practices will continue to be key to the continuation of performance and competitiveness in the changing IT environment in Pakistan.

In Pakistan's IT business, leadership conduct has become more critical for staying competitive and getting projects done on time. The rapid growth of the sector, along with a lack of training programs for leaders, makes it necessary for leaders to be flexible and focus on people (Rehman et al., 2025). Pakistani IT professionals prefer leaders that show empathy, openness, and guidance above those who use hierarchical control (Ma et al., 2024). Transformational and servant leadership approaches have notably improved employee commitment and creativity inside local IT companies (Milli & Negi, 2025). Inclusive leadership characteristics that promote involvement and mitigate bias are associated with enhanced teamwork and diminished turnover intentions (Nahar et al., 2025). Finally, leaders who give others the power to make decisions and build trust between them have been demonstrated to make projects more successful and clients happier in Pakistan's tech industry (Varshney & Varshney, 2025). These findings indicate t hat embracing inclusive, compassionate, and empowering leadership practices is essential for developing resilient and innovative IT firms in Pakistan.

H4: There is a significant relationship between Leadership Behavioral Practices and Project Success

2.5 Mediating Role of Project Management Tools between Leadership Behavioral Practices, and Techniques and Project Success.

The Behavioral Practices of Leadership Behavioral Practices (LBP) have always been considered to be a key performance-motivation, team cohesion, and goal achievement driver of the project. Nonetheless, their success usually lies within the proficiency with which organizations resource their actions with systematic project management instruments and methods Prieto (2025) proposed that the effectiveness of leadership is enhanced by systematic planning and monitoring

tools that translate a vision into some steps to be taken. Tshabalala and Marnewick (2025) also underlined that 4IR based project management tools and techniques integrated can enable leaders to translate the strategic intent into quantifiable outcomes to advance communication and coordination. Chen et al. (2025) discovered that digital tools correspondence to leadership styles improves cooperation and minimizes uncertainty when carrying out a project. In a similar manner, Nenni et al. (2025) stated that AI facilitated the capability of PM systems to enhance the predictive powers of leaders and distribute funds effectively. The study

of Herzing (2024) found that leaders who employ structured PM frameworks have a higher ability to turn behavioral intentions into actual project outcomes and supports the suggestion that project management tools and techniques mediate the relationship between project leadership behaviors and project success. In an IT sector organizations size varies and the projects they conduct. According to the study of Johnston and Wierschem (2007) in an IT sector Project Managers or Leaders who employee tools and techniques provided by Project Management practices in their project phases, they can manage any size of project to avoid scope creep and ensure that the project delivers quality outputs.

The mediating quality of project management tools and techniques would become evident when the actions of the leadership are examined regarding decision making, team and communication management. According to Caleb and Bello (2025), PM tools result in transparency and accountability that may be used by leaders to ensure recurrent communication patterns. As Clemente and Domingues (2023) observed, project management tools and techniques enable the exchange of knowledge and cross functional integration to convert the leadership behaviors, including trust and relationship management to the improved coordination. As Bhat and Nasreen (2025) noted, leaders integrating AI aided PM tools are in a better position to realize the conflicts at the initial stage, thus matching the performance of the team to the objectives of the projects. Sommer (2024) demonstrated that strategic alignment and stakeholder contentment are enhanced by the proper choice of tools based on the leadership style. Lastly, Khang (2025) discovered that online PM systems reinforce the skills of the leaders to provide parameters of the project with flexibility which is an important balance towards the success of project in the ever-changing IT settings.

Studies are also supportive that project management tools and techniques provide the bridge between the behavioural and operational side of the leadership and shift soft skills into the systematic project implementation. According to Habibu and Kabiru (2024), leadership communication becomes measurable as a result of PM tools integration, which increases reliability and efficiency in tracking. Shakilla and Saputro, (2025) observed that PM technologies enhance efficient feedback, which enables the leader to make changes at any given moment. According to Patanakul (2024), the influence of the leadership on the success is increased when it is backed by a well-developed environment of project management tools and techniques because it provides a stable reporting and risk management. As Newton (2018) noted, scheduling and tracking methods contribute to increased confidence and morale in the team, which result in better outcomes in leaders who employ the approaches. Zimmerer and Yasin (1998) also stipulated that the project management tools and methods provide a formalized setting where the leadership vision is directly converted into deliverables, boosting the performance in the short-term, and the ability to perform in long-term perspective. Project Management Tools and Techniques supports projects in their strategic planning and execution. PMTT are responsible for the changes in the projects methodologies i.e. traditional waterfall in to hybrid project model, by providing a digital solution (Chen et al, 2025).

Project management tools and techniques are an essential mediating variable in the IT sector of Pakistan because they enhance the connection between the behavior of leadership and the project success in the conditions of digital transformation and resource shortages. According to Ly et al. (2024), IT companies that switch to a hybrid that incorporates the use of project management tools and techniques models allow leaders to conduct more efficient work with the distributed teams that will be more visible and controllable. According to Sidney (2019), communication and coordination leadership practices that focus on the use of modern PM platforms yield better outcomes. Dildar et al., (2014) found out that the low use of the tool has traditionally served as a weakness to the influence of the leadership in project settings, and the existing trends towards the use of digital tools are filling the gap. Patanakul et al. (2010) indicated

that leadership behaviors could be facilitated by the use of a structured tool at all the stages of a project life cycle, enhancing cost and time effectiveness. In the developing IT markets such as Pakistan, where behavioral leadership and project management tools and techniques are inherently synergistic, the effect of the aforementioned approach may be the improvement of project delivery, as well as the long-term institutional maturity that will position the firms to continue being competitive.

As an essential mediating variable Project management tools and techniques are in the IT sector of Pakistan because they build a connection between the behavior of leadership and the project success in the conditions of digital evolution and capacity gaps. According to Daud et al. (2024), IT companies that switch to a hybrid that incorporates the use of project management tools and techniques models allow leaders to conduct more efficient work with the distributed teams that will be more visible and controllable. In the study of Daud et al., (2024), stipulated that developing countries like Pakistan are economically not stable which may create problems for the project conduct in this country, If Pakistan's IT sector or industry choses to apply Project Management Tools and Techniques to manage their projects they can drastically change how they can plan, perform and deliver quality projects. Use of PMTT can channelize fast changing technical requirements and helps PM or a leader to implement a suitable strategy to deal with the unique challenges a project exhibits.

Patanakul et al. (2010) also concluded that the use of Project Management Tools and Techniques can significantly help project in its each phase . On the other hand, Prieto (2025) stated that the use of Project Management tools and technologies can improve the efficiency of the tasks performed, they help with keeping stakeholders informed and use resources efficiently to achieve project success. The argument in favor of the Leadership Behavioral Practices (LBP) and Project Management Tools and Techniques (PMTT) as co-determinants of Project Success (PS) is supported by the reviewed literature, as the project management tools and techniques are the working tools between the leadership intent and operational performance results. Leadership behaviors like communication, relationship management, and conflict resolution mechanisms establish the milieu within which project management tools and techniques can be effectively utilized to track the progress, control risks and satisfaction of the stakeholders. The more leaders resort to structured and technology-based management tools, the more measurable and results oriented their behavioral influence becomes and the more predictable and qualitative the outcomes of projects will be, This implies that LBP offers a complementary aspect and provides the strategic and human base of project management whereas project management tools and techniques offer the procedural and technological construct that converts the leadership behaviors in to a successful project implementation. In the IT industry of Pakistan, where projects are volatile, knowledge intense and technology reliant, this type of integrated model of leadership and management tools

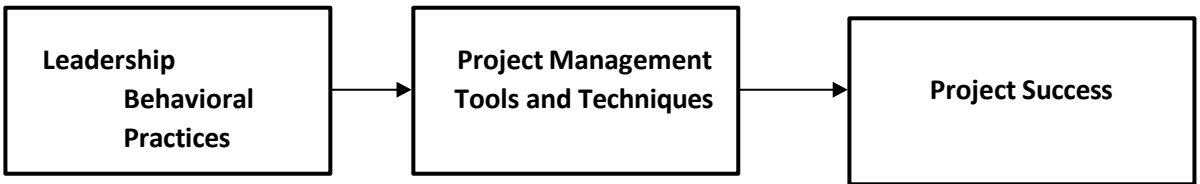
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H5: Project Management Tools and Techniques mediate the relationship between Leadership Behavioral Practices and Project Success.

2.6 Research Framework



2.7 Research Hypotheses

H1: There is a significant positive relationship between Communication and Project Success

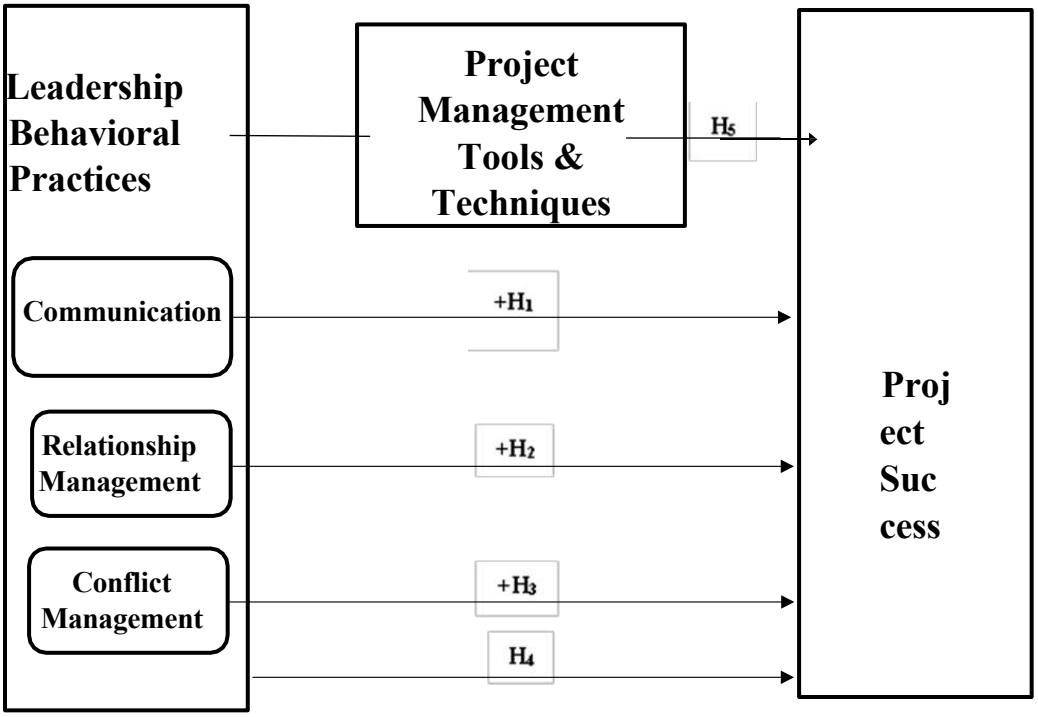
H2: There is a significant positive relationship between Relationship Management and Project Success.

H3: There is a significant positive relationship between Conflict Management and Project Success

H4: There is a significant relationship between Leadership Behavioral Practices and Project Success

H5: Project Management Tools and Techniques mediate the relationship between Leadership Behavioral Practices and Project Success.

2.8 Theoretical Model



RESEARCH METHODOLOGY

3.1 Research Design

3.1.1Type of Study

This study investigates the relationship between Leadership Behavioral Practices and Project Success with Project Management Tools and Techniques acting as a mediator. Using quantitative data from structured self-reported questionnaires.

3.1.2Study Setting

Pakistan's IT sector was the focus of this study. The current study took place in the IT project environment of Islamabad and Rawalpindi. IT sector is fast growing and dynamic work environment that heavily emphasis on project based operations. Compared to the traditional industries, IT sector requires constant customer connection, cross functional teamwork, and fast paced innovation, making project management practices and leadership behaviors critical for project success. In addition, Pakistan's IT sector is growing internationally, although compared to developed country this sector is still under researched. Studying this sector provides relevant insight into how Leadership behavioral Practices and Project Management Tools and Techniques operate in a developing country context, while also contributing locally grounded evidence to project management literature.

Since data collection was done in a short period of time, a field research methodology was applied. A field survey is a quick method used to gather data quickly from different respondents and their different viewpoints. The implemented technique is proven to be quite useful and effective in data collection in the mentioned sector. The nature of the IT sector is quite demanding and time sensitive, where employees have limited availability. The research survey focuses on the experiences and practical insights of Project managers and team leaders in Pakistan's IT companies to gather genuine data.

3.1.3Time Horizon

This empirical study uses cross sectional data collection, which means that data will be collected all at once throughout the study period. This approach is suitable since the main goal of this research study is not to monitor changes over time but to investigate the connection between the Leadership Behavioral Practices, Project success, and Project Management Tools and Techniques. By gathering data at the same time, the study can capture a realistic snapshot of current project management practices.

In the context of Pakistan's IT sector, where projects are fast and are bound by time, cross sectional design is both practical and efficient. This design is suitable for establishing a connection between the project outcome, tool usage, and leadership behavior. It also supports the statistical techniques such as regression, mediation and correlation analysis to establish a meaningful statistical significant relationship among the variables.

3.1.4Research Interference

The research study is bound to a field survey there is little researcher intervention. The sample was collected from the targeted population, which include Project managers and team leaders employed in the IT sector. Using both Google Forms and paper based questionnaires to ensure border accessibility of participation.

3.1.5Unit of Analysis

The individual IT professional, especially project managers and team leaders employed in Pakistan's IT industry who are directly involved in executing and managing the projects, is the unit of analysis for this study. The analysis will be based on how each person views their leadership style, i.e., how they communicate, how they manage interpersonal relationships, how they deal with conflicts, how they use project management tools and techniques, and how they evaluate the performance of their projects and how they use leadership style with project management tools to achieve project success.

3.2 Population & Sampling

3.2.1Population

Project based workers in Pakistan's Information Technology sector, specifically project managers and team leaders working for software development businesses, IT service providers, and digital technology organizations, make up the

study's population. These experts are perfect participants for evaluating the research variables because they are in charge of project design, execution, and monitoring.

3.2.2Sampling Techniques

To target respondents with relevant IT project management skills and experience, a non-probability purposive sampling technique will be used. This methodology guarantees the incorporation of individuals who can offer knowledgeable answers concerning leadership behaviors and the application of project management tools and approaches

3.2.3Sampling Size

The study intends to gather responses from roughly 200–300 IT experts in important technological hubs in the Twin cities: Islamabad and Rawalpindi of Pakistan. It is based on comparable empirical studies in project management. The sample size guarantees sufficient statistical representation of Pakistan's IT workforce and is appropriate for performing correlation and mediation studies.

3.3 Scales and Measures

In this empirical study we structured questionnaire with close ended questions. 5 point Likert scale was used to ask how much the participants agree with the statement. "Strongly Disagree" is represented by the score 1, "Disagree" is represented by the score 2, "Neutral or Not Sure" was represented by the score 3, "Agree" is represented by the score of 4 and lastly "Strongly Agree" is represented by the score of 5.

3.3.1Leadership Behavioral Practices

Leadership Behavioral Practices variable was measured by combining its dimension: Communication, Relationship Management and Conflict management. By combining these variables, we got 21 items which we used. (Clark, 2010; Muszynska, 2018; Goleman, 1998; Clark, 2010; Maqbool et al. 2017).

3.3.2Communication

Four dimensions were examined, covering formal communication, informal communication, communication willingness, and communication effectiveness (Clark, 2010; Muszynska, 2018). This variable was measured using 8 items. For example, "I maintain clear and unambiguous communication with my project team."

3.3.3Relationship Management

Seven dimensions were included: leadership inspiration, developing others, influence, change catalyst, conflict management, building bonds, teamwork, and collaboration (Goleman, 1998). A seven-item scale was used to measure Relationship Management. For example, "I inspire individuals and groups to achieve shared goals."

3.3.4Conflict Management

According to Clark (2010) and Maqbool et al. (2017) there were seven dimensions: comprised viewing other perspectives, early conflict identification, amicably resolving, working effectively with organization policies, consensus building, managing ambiguous issues, and self-control maintenance. A six-item scale was used to measure Conflict Management.

3.3.5Project Management Tools & Techniques

The scale of Project Management tools and techniques (PMTT) was modified based on Ika, Diallo and Thuillier (2010) that comprised eight items that indicated the actual application of major project management techniques like Word Breakdown Structure, Critical Path Method, Logical Framework and Earned Value Analysis. These are the items that determine the frequency with which the Project Managers use this project management tools and techniques (PMTT) to the general project performance within the Pakistani IT industry.

3.3.6Project Success

In this research, seven dimensions were used to include time, cost, quality, satisfaction of the end users of the product, satisfaction of the team members working on the project, achieving the business objectives and satisfaction of all other stakeholders of the project (Müller and Turner, 2010). This variable was measured using a scale

of 10 items. Such examples as, the project was completed on time as planned, and, the project has achieved its success criteria, such as environmental and social sustainability standards.

3.4 Data Analysis

Data will be analyzed using SPSS and following procedures/tests will be carried out:
Frequency distribution, Descriptive statistics, Reliability analysis, One Way ANOVA, Correlation Analysis, Regression Analysis.

RESULTS

This chapter provides findings of the empirical study carried out to analyze relationships between the leadership behavioral practices and project management tools and techniques and project success in the Pakistani IT industry. The research was conducted in twin cities of Islamabad and Rawalpindi where IT professionals serving in the project-based settings were used to gather information. The process of data collection was conducted between a two-month timeframe between October 2025 and November 2025, through the use of both Google Forms and paper-based questionnaires as the means to access a wider population and participation. All respondents were informed orally before being administered the survey and the participation was not forced or anonymous. Two hundred and ten valid responses were obtained. The data were analyzed using IBM SPSS Statistics (version 26) using descriptive statistics, reliability analysis, correlation analysis, one way ANOVA, multiple regression and mediation analysis.

4.1 Demographics

Table 1 statistically describes the demographics of the respondents (N = 210). Male participants (91.4) were mostly in the sample, with females (8.6) making up the other percentage. The majority of the respondents consisted of the age groups of 2630 (38.6 percent) and 2025 (37.6 percent) ages, with 23.8 percent aged between 3135. In terms of education, most of them had a Bachelor (71.9) then MS/Phil (18.6) and PhD (9.5). The participants were nearly balanced in terms of experience as there were almost equal number of those less than 5 years of experience (48.6) and those with 5-10 years of experience (51.4).

Table 1: Demographic Characteristics of the Sample (N = 210)

Demographic Variable	Category	n	%
Gender	Male	192	91.4
	Female	18	8.6
Age	20–25	79	37.6
	26–30	81	38.6
	31–35	50	23.8
Education	Bachelor	151	71.9
	MS/Phil	39	18.6
	PhD	20	9.5

Experience	Less than 5 years	102	48.6
	5–10 years	108	51.4

4.2 One-way ANOVA

Table 2 presents one way ANOVA results examining differences in mean project success across demographic categories (N = 210). The analyses indicated statistically significant differences in project success by gender, F (1, 208) = 9.80, p = .002, η^2 = .045. Significant differences were also observed across age groups, F (2, 207) = 39.42, p < .001, η^2 = .276, and education levels, F (2, 207) = 20.01, p < .001, η^2 = .162. In addition, project success differed significantly by experience category, F (1, 208) = 80.05, p < .001, η^2 = .278. Overall, these findings indicate that project success varies across the examined demographic groups in this sample.

Table 2: One-way ANOVAs for Demographic Differences in Project Success (N = 210)

Demographic Variable	F (df between, df within)	p	η^2
Gender	9.80 (1, 208)	.002	.045
Age	39.42 (2, 207)	< .001	.276
Education	20.01 (2, 207)	< .001	.162
Experience	80.05 (1, 208)	< .001	.278

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4.3 Descriptive Examination

Table 3 presents descriptive statistics for the study variables (N = 210). The mean scores ranged from 3.51 to 3.63, indicating moderate to high levels across constructs. Standard deviations (0.72–0.83) show acceptable variability. Skewness and kurtosis values fall within acceptable limits, supporting the assumption of approximately normal distributions for subsequent analyses.

Table 3. Descriptive statistics for study variables (N = 210)

Variable	N	Min	Max	Mean	SD	Skewness	Kurtosis
Leadership Behavior (LB)	210	1.00	5.00	3.510	0.723	−0.190	−0.272
Project management Tools and Techniques (PMTT)	210	1.00	5.00	3.628	0.764	−0.905	0.559
Project Success (PS)	210	1.00	5.00	3.626	0.834	−0.542	−0.067

Note. Min = minimum; Max = maximum; SD = standard deviation. All variables were measured on a 5-point Likert scale (1 = lowest, 5 = highest). Skewness and kurtosis values suggest no serious departure from

normality.

4.4 Reliability Analysis

Table 4 shows the Internal Consistency reliability was assessed using Cronbach's alpha for all multi-item scales. The leadership behavior scale (LB; 21 items) showed excellent reliability, α = .92. The project management Tools and Techniques scale (PMTT; 8 items) also demonstrated high internal consistency, α = .87. Similarly, the project success scale (PS; 10 items) exhibited excellent reliability, α = .92. Overall, these coefficients indicate that all three scales are highly reliable for the present sample.

Table 4: Reliability of Study Scales (N = 210)

Scale	Cronbach's α	Number of items
Leadership Behavior (LB)	.928	21
Project Management Tools and Techniques (PMTT)	.873	8
Project Success (PS)	.922	10

4.5 Correlation Analysis

Table 5 presents Pearson correlations among leadership behavior, project management Tools and Techniques, and project success (N = 210). Leadership behavior was positively associated with project management Tools and Techniques (r = .511, p < .01) and project success (r = .600, p < .01). Project management Tools and Techniques were strongly and positively associated with project success (r = .794, p < .01). Overall, the results indicate that higher leadership behavior is linked with stronger project management Tools and Techniques and higher perceived project success. These associations are correlational and do not imply causation. Multicollinearity was assessed in the regression models, and VIF/tolerance diagnostics suggested no severe multicollinearity.

Table 5: Correlations Among Study Variables (N = 210)

Variable	1	2	3
1. Leadership Behavior (LB)	_		
2. Project Management Tools and Techniques (PMTT)	.511**	_	
3. Project Success (PS)	.600**	.794**	_

Note. Values are Pearson correlation coefficients. p < .01 (two tailed) for all correlations.

4.6 Regression Analysis

Table 6a reports a multiple regression model predicting project success (PS) from the leadership dimensions communication (COM), relationship management (RM), and conflict management (CM) while controlling for gender (1 = male, 2 = female), age, education, and experience (N = 210). The overall model was significant (R = .806, R^2 = .649, adjusted R^2 = .637, p < .001). In the final model, CM showed a significant positive unique association with PS (β = .647, p < .001), whereas COM (β = .032, p = .568) and RM (β = .053, p = .419) were not significant. Among the control variables, gender

remained significant (β = −.242, p < .001), while age, education, and experience were non-significant (ps > .05); however, because the female subgroup was small, gender related differences should be interpreted cautiously. Multicollinearity diagnostics indicated no severe multicollinearity (VIF range = 1.374–6.647; Gender = 1.559; Age = 6.647; Education = 3.125; Experience = 3.104; COM = 1.786; RM = 2.457; CM = 1.374). Leadership behavior (LB) was tested in a separate regression to avoid redundancy with its component dimensions.

Table 6a: Regression Analyses - Dimensions Model (N = 210)

Paths	R	R^2	β	p (Sig.)
Overall model fit	**.806[1]**	**.649[1]**	—	**< .001**
Control Variables (Final Model)				
Gender → PS			−.242	< .001
Age → PS			−.124	.248
Education → PS			−.025	.733
Experiences → PS			−.074	.312
Leadership Dimensions (Final Model)				
Communication (COM) → PS			.032	.568
Relationship Management (RM) → PS			.053	.419
Conflict Management (CM) → PS			.647	< .001

Note. DV = PS. β values are standardized coefficients from the final model.

[1]Overall model fit: R = .806, R^2 = .649 (Adjusted R^2 = .637), p < .001.

Table 6b presents a separate regression testing the overall effect of leadership behavior (LB) on PS. The model was significant (R = .600, R^2 = .359, adjusted R^2 = .356, F (1, 208) = 116.731, p < .001), and LB positively predicted PS (β = .600, p < .001). Because LB conceptually overlaps with its sub dimensions, it was modeled separately to avoid redundancy and inflated collinearity that can occur when an overall construct and its component dimensions are entered simultaneously. In this single predictor model, multicollinearity is not a concern (VIF = 1.00; tolerance = 1.00).

Table 6b: Regression Analysis – Leadership Behavior Model (N = 210)

Paths	R	R^2	β	p (Sig.)
Leadership Behavior → Project Success	.600[1]	.359[1]	.600	< .001

Note. Dependent variable = PS. β values are standardized coefficients.

[1]Overall model fit: R = .600, R^2 = .359 (Adjusted R^2 = .356), F (1, 208) = 116.731, p < .001.

4.7 Mediation Regression Analysis

Table 7 presents, The mediation was tested using Process Model 4 by Andrew Hayes in SPSS with 5000 bootstrap samples, and a sample size of 210 was tested to determine whether project management Tools and Techniques (PMTT) mediate the relationship between leadership behavior (LB) and project success (PS). The results of the analysis show that Leadership Behaviors significantly predicted the use of Project Management Tools and Techniques (a = 0.540, SE = 0.063, t = 8.58, p < .001), suggesting that effective leadership is strongly associated with the greater acceptance and use of the Project Management Tools and Techniques. Project management Tools and Techniques also significantly predicted project success while controlling for leadership behavior (b = 0.720, SE = 0.050, t = 14.43, p < .001), emphasizing their significant role in attaining favorable project results. Consequently, the direct effect of leadership behavior on project success remained significant (c′ = 0.303, SE = 0.053, t = 5.74, p < .001). This tells that the Leadership Behaviors continue to play an independent role in influencing Project Success beyond the mediation. The indirect effect was also significant (0.389, BootSE = 0.060) with a bootstrap confidence interval that did not include zero [0,273, 0.507]. This confirms the presence of a meaningful mediation effect.

Since both direct and indirect effects were significant, providing evidence that leadership behaviors influence project success both indirectly and directly through the application of Project management Tools and Techniques. Meaning that leadership behaviors independently have a significant impact on the Project outcomes. Their relationship is further strengthened when Project Management Tools and Techniques are introduced. Thus, Project Management Tool s and Techniques partially mediate the relationship between the Leadership Behavioral Practices and the Project Success.

Table 7: Mediation Paths and Indirect Effect

Path	Effect (b)	SE	t	p
a: LB → PMTT	0.5400	0.0630	8.5772	< .001
b: PMTT → PS	0.7196	0.0499	14.4337	< .001
c′ (direct): LB → PS	0.3026	0.0527	5.7441	< .001
Indirect effect (a×b) via PM	0.3886	BootSE = 0.0601	—	95% CI [0.2731, 0.5067]

Note: Bootstrap samples = 5000; 95% confidence interval. Indirect effect is significant because CI does not include zero → partial mediation.

Table 8: Hypotheses Summary - Decisions on Hypotheses

H	Statement	Decision	Key results
H1	There is a significant positive relationship between Communication and Project Success.	Not Supported	In the final dimensions model, COM was not a unique predictor of PS (β = .032, p = .568).
	There is a significant positive relationship	Not	

H2	There is a significant positive relationship between Relationship Management and Project Success.	Supported
H3	There is a significant positive relationship between Conflict Management and Project Success.	Supported
H4	There is a significant relationship between Leadership Behavioral Practices and Project Success.	Supported
H5	Project Management Tools and Techniques mediate the relationship between Leadership Behavioral Practices and Project Success.	Supported (Partial Mediation)

In the final dimensions model, RM was not a unique predictor of PS ($\beta = .053$, $p = .419$).
CM significantly and positively predicted PS ($\beta = .647$, $p < .001$), indicating CM is the strongest leadership dimension linked to PS.
LB-only model showed a significant positive effect on PS ($\beta = .600$, $p < .001$; $R^2 = .359$).
Indirect effect was significant (95% CI excluded zero) and the direct effect remained significant, consistent with partial mediation.

DISCUSSION AND CONCLUSION

The research study was conducted to determine how the behavioral practices of leadership behavior can lead to the success of projects in project-based organizations within the information technology (IT) industry in Pakistan. The paper has explored the effect of three dimensions of key dimensions of leadership behavioral practices namely communication, relationship management and conflict management and examined their role on project success. Moreover, in order to clearly comprehend how leadership behaviors lead to successful project outcome, project management tools and techniques also were incorporated as mediation variable. Despite the fact that most of the literature on leadership currently being published focuses on the direct effect of leadership styles on performance, the few available empirical studies that have examined the mechanism through which leadership behaviors operate in project-oriented environments and developing country setting exist. This is in an attempt to bridge a major gap in the literature on project success and provides a more oriented account of leadership effectiveness in IT projects through integrating project management tools and techniques with leadership behavioral practices.

This chapter is based on regression, correlation and mediation analysis discussion of the findings of the hypotheses that were tested and presented in the Chapter 4. The result shows that there is a strong positive relationship between leadership behavioral practices and project success. Though, relationship management and communication (H1, H2) did not present a clear significant contribution, conflict management was the only element that presented a significant positive impact on project success (H3) upon dimensional study. These findings show that communi cation and relationship management are curtail leadership attributes but their contribution to the success of the project might be indirect or based on other variables in the company. The mediation analysis revealed that the project management tools and techniques indirectly mediate the project success, which is part mediated by the leadership behavioral practices, which mediate the relationship between the leadership behavioral practices and the project success, and it was found that the effective leadership promotes the project outcomes both directly and

indirectly in terms of promotion of the use of structured project management techniques. It is one of the main
contributions to the study and this kind of mediation effect helps to understand the way the leadership behavior is transformed into a real project success. Overall, these results suggest both the significance of the effective leadership and the systematic use of the project management tools and techniques to present a project successfully in information technology (IT) domain.

5.1 Communication and Project Success

H1: There is a significant positive relationship between Communication and Project Success.

The first hypothesis hypothesized that there is a significant positive relationship between communication and project success. On the other hand, research finding of multiple regression revealed that this hypothesis is not supported. Communication showed very small standardized coefficient (β = 0.032) and was statistically non-significant (p = 0.568) in the final dimensions model. This indicated that communication is not individually forecast project success when other dimensions of leadership were included in the model. In spite of the fact that communication is acknowledged as an important leadership practice in project management. The findings revealed that communication in the presence of other leadership behavioral practices have a limited impact on the project success. One potential explanation is that in IT projects communication is an expected and a basic component of leadership. Meanwhile majority of the participators reported that there is a moderate to high leadership behavior level (Mean = 3.41), in project processes effective communication my already be rooted in the routine. An alternative reason might be that there is an overlap between leaderships dimensions. Three dimensions of leadership behavioral practices: communication, conflict management and relationship management are closely related. So, when these three are put together into a regression model, communications unique contribution becomes statistically non-significant. H1 was not supported. While communication is an essential for project functioning the results of the research in the sample of IT professionals shows that it is not uniquely drives project success.

5.2 Relationship Management and Project Success

H2: There is a significant positive relationship between Relationship Management and Project Success.

Second hypothesis also shows that there is a significant relationship between relationship management and project success. But in the final model regression analysis findings reports that there is not a significant statistical effect on project success by relationship management (β = 0.053, p = 0.419). As a result, H2 hypothesis was also not supported. In general relationship management is linked with stakeholder engagement, team organization a trust building. Be that as it the research findings showed insignificant outcome meaning in IT sector relat ionship management alone is not enough to drive project outcome directly. In project ecosystem especially in technology driven organizations performance indicators as budget, technical deliverables and timelines may have more importance than quality social relationship. On top of that project success may have indirect effect rather than direct effect exerted on it by relationship management. The influence of relationship management in technological ecosystem may be guided through reduced misunderstanding, proper coordination or better understanding and use of project management tools and techniques. As shown in the study the importance of relationship management may be weakened when conflict management is strong in statistical model that assess unique effect . Considering the whole the findings showed that although relationship management is an essential leadership skill with in the studied context it does not predict project success, so this hypothesis H2 is also rejected.

5.3 Conflict Management and Project Success

H3: There is a significant positive relationship between Conflict Management and Project Success.

The third hypothesis H3 examines the significant positive relationship between conflict management and project success. This hypothesis was firmly supported by the research findings. In the regression model the influence of conflict management appeared the most significant among the dimensions of the leadership behavioral practices. It contained the highest standard coefficient (β =0.647) and strong statistical significance (p <0.001). In IT projects findings emphasizes in depth role conflict management, where tight deadlines, technical complexity and task independence often creates conditions for disagreements. When conflict appears, leaders who can effectively address, understand and resolve it can significantly contribute to high levels of project success. To maintain team, focus on project goals, improve decision making and limit disruptions effective conflict management can solve these issues . In the combined model the strength of conflict management relationship can also explain why communication and relationship management lost their significance. A higher order skill that incorporates relationship and communication abilities into practical problem-solving behavior could be conflict management. When leaders effectively manage conflicts, they indirectly ensure heathy relationship and smother communication with in the project teams. Conflict management can be considered as an important leadership competency for achieving project success in the IT sector of Pakistan as demonstrated by the findings. So, H3 hypothesis was supported.

5.4 Leadership Behavioral Practices and Project Success

H4: There is a significant relationship between Leadership Behavioral Practices and Project Success.

According to the fourth hypothesis H4 it studies the general relationship between leadership behavioral practices and project success. The isolated regression analysis reported that there is a strong significant statistical relationship between leadership behavioral practices and project success (β = 0.600, p < 0.001) with the model explaining 35.9 % of the variance in project success (R^2 = 0.359). When considered as combined construct leadership behavioral practices play a significant role in determining project outcomes as the study results indicate. Leaders who collectively demonstrates relationship handling, conflict resolution and effective communication cam better contribute to the project's performance. Even without taking mediating variable into consideration the significant R^2 value indicates that leadership behavior is a major predictor of project success. In IT organizations strong leadership behavioral practices are essential for project success. The evidence clearly indicates that H4 was supported, confirming that the leadership behavioral practices have a positive and meaningful impact on the project success.

5.5 Project Management Tools and Techniques as Mediator

H5: Project Management Tools and Techniques mediate the Relationship Between Leadership Behavioral Practices and Project Success.

The fifth and last hypothesis H5 studies how or if project management tools and techniques mediation the relationship between project success and leadership behavioral practices. This hypothesis was firmly supported the evidence provided by the mediation analysis. Leadership behavior significantly foresees project management tools and techniques (a = 0.540, p < 0.001) and project management tools and techniques significantly predicted project success (b =0.720, p <0.001). With a 95% bootstrap confidence interval [0.273, 0.507] that excluded zero, the indirect impact of leadership behavior on project success through project management tools and practices was statistically significant (indirect effect = 0.389). This attests to the existence of mediation. The direct impact of leadership

conduct on project performance, however, continued to be substantial ($c' = 0.303$, $p < .001$), suggesting partial mediation. These results indicate that good leaders not only contribute to project success by the direct impact on the team but also by influencing and empowering the use of project management tools and techniques successfully. Leaders who embrace systematic planning, monitoring and control practices put their behavior strength into quantifiable project results. In general, the findings prove that the project management instruments and methods are instrumental in enhancing the relationship between the leadership project success and the project management tools. Thus, the H5 was accepted, and the partial mediation was observed.

5.6 Thermotical implications

This research contributes several important theoretical contributions to the existing level of knowledge on project success and project leadership and leadership in particular with reference to project-based organization in the Pakistan IT industry. To begin with, the study contributes to the theory of leadership by demonstrating that behavioral practices of leadership are a good predictor of project success. The study offers a more differentiated view of the operation of leadership within a project environment as the leadership has been divided into three behavioral dimensions, including relationship management, communication and conflict management. Past researches have often considered leadership as one construct.

Second, the findings enhance theoretical assumptions regarding the comparative importance of the dimensions of leadership. The results indicate that conflict management is stronger in determining the success of projects as compared to the other domains such as communication and relationship management. This brings into question the generally accepted fact in the literature of leadership practice that effective leadership behavior is communication. The findings suggest that conflict management can be more critical, as compared to other interpersonal leadership skills during technically complicated and time constrained IT projects.

Third, through the discovery of project management tools and techniques as the mediator of partial way between leadership behavioral practices and project success, the study contributes to the project management theory. This mediation outcome provides theoretical clarity by explaining the relationship between leadership behaviors and project outcomes. According to the results, there is a process-based explanation that implies that the formal project management techniques are used to realize leadership effectiveness as compared to viewing leadership influence as a strictly direct one. Conclusively, the research contributes to the literature on project success by integrating project management structures with the behavioral leadership theory. This integrated approach will respond to the calls of multifaceted and mechanism-based explanations of project performance, which the preceding literature has asked. The research also extends the scope of application of geographical areas and contexts of project management and leadership theories since it empirically examines these relationships within a developing nation context.

5.7 Practical implications

For project managers, organizational leaders, and IT companies working in project-based settings, the study's conclusions have a number of useful ramifications. First, the findings demonstrate how important conflict management is to project success. Since this dimension shown the most direct impact on project success, organizations should give conflict management skills top priority in leadership development programs. The goal of training programs should be to give project managers the skills they need to recognize, handle, and settle disputes amicably. Second, although no direct effect of communication and relationship management was observed on the project success, the practices cannot be neglected. Instead, firms ought to realize that these leadership methods can be effective in an indirect manner since they help in providing coordination, teamwork and efficient utilization of project management technologies. It should

therefore be emphasized that leaders should be encouraged to integrate formal project planning and control processes and communication and relationship building initiative. Thirdly, the critical mediating position of project management tools and processes underscores the need to have firms invest in organized project management systems. Besides behavioral skills, the leaders should be trained on the application of technologies such as scheduling, risk management, monitoring, and performance tracking. The outcomes of the project can be significantly enhanced by this correlation between the technical project processes and the leadership style. Lastly, the IT companies should create a culture in which project management procedures and leadership strategies should be complementary. Organization can make sure that the leadership impact is transformed into the project delivery success in a systemized way by introducing the use of project management tools to their leadership practices, thus, enhancing the overall performance of the project and organizational performance.

5.8 Limitations and Future Research

There are disadvantages that should be mentioned along with the merits of this study. Firstly, the data was solely provided by IT professionals in the city of Islamabad and Rawalpindi and this would not be generalizable to the other regions or sectors. In the majority of cases the cultural, organizational, and industry specification factors can affect the effectiveness of leadership behavior on the project success. Second, the study results are limited to the capacity of making causal inferences because of cross sectional research design used. A longitudinal study would give the insight on the effects of the leadership behaviors and project management approaches on the success of a project in the long-run in case even when the statistical association is high and significant.

Third, the study used self-reports and this could introduce bias due to response or common method. Additional research would help increase levels of validity even in those situations where statistical checks were used and objective measures of performance were considered like client or supervisor rating of project success. The research can be extended to future researches by looking at the other mediators or moderators like corporate culture, complexity of the project or diversity of the team. To make their contribution to the literature on the issue of leadership and project performance, the researchers can also investigate the contribution of other leadership philosophies

or dimensions of leadership behavior. It would also increase the validity and applicability of the results to other industries/countries.

5.9 Conclusion

Having concentrated on the mediating role of the project management tools and techniques in the IT sector of Pakistan, this study aimed to investigate the relationship that exists between the patterns of the leadership behavior and project success. The paper provides a better and structured insight into the influence of leadership behaviors on project performance within project-based organizations through the lens of leadership as a multidimensional construct encompassing: communication, relationship management, and conflict management.

The results indicate the significance of good leadership in attaining successful project outcomes because it confirms that the behavioral practices of leadership are significantly positively related with project success. However, the dimensional test has shown that not every practice in leadership had a similar impact. The conflict management was considered the most prominent and influential aspect of leadership and the role it plays towards the success of the project is important. This highlights the need to have leaders who are able to cope with conflict, coordinate the stakeholder interest, and find solutions to the intricate and dynamic IT project environment.

The importance of relationship management and communication cannot be underestimated as well even though the former did not have a direct and substantial impact on the project success. These leadership features may be indirectly engaged by encouraging cooperation, trust and coordination:

all these are needed to attain successful project management approaches. The findings imply that one to evaluate the leadership performance is to employ operational execution and behavioral competencies, rather than to the explicit interpersonal ones. One of the biggest successes of the study is the identification of the project management tools and techniques as a mediator of intermediate degree in the process of selecting the leadership behavioral practice and project success. The mediation results show that project success is directly and indirectly related to the leadership behaviors in enhanced application of structured project management skills. This observation illustrates the need to align formal project management tools and the behavior of a leadership in order to achieve the best outcomes in a project.

All in all, the study presents sufficient empirical data on a comprehensive model of project success that combines project management methods and instruments with the behavior of a leader. The results indicate that to successfully finish projects within the IT sector, technic al knowledge or charismatic leadership is not adequate. Instead, it needs executives who can lead and direct teams, resolve issues, and implement project management techniques in a procedural way. The work has a significant contribution to the available body of literature on the topic of leadership and project management because it introduces both theoretical and practical knowledge. It also opens the path to additional research that would focus on the improvement of success in projects within project-based companies.

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