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# THE IMPACT OF PROJECT COMPLEXITY ON PROJECT SUCCESS WITH THE MEDIATING ROLE OF TEAM PERFORMANCE

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***Keywords:***
*project manager, project success, project complexity, team performance, projects*

***ABSTRACT***

Complexity in project management can lead to major problems for many projects. Therefore, the purpose of this study is to identify problems in project complexity so that managers can increase the likelihood of project success. this study assesses the influence of project complexity on project success using team performance as a mediator. The literature on Construction Industry is vast and hence reviewed from worldwide research work. To contribute to this wide array of research work, projects from the construction industry of Pakistan are targeted and data is collected through an adapted questionnaire. Through the data collected from 420 respondents, the results from SEM through PLS-3 revealed that Project Complexity has an impact on Project Success and Team Performance partially mediates the relationship between them. In conclusion, issues with team performance are a sign of project complexity in major construction projects in Pakistan. The complexity that occurs in various projects needs mitigation strategies to overcome project failure. There are negative consequences of project complexities that enforce project managers to increase the team performance to achieve project success. Future research can look at how leadership that is genuine, inspiring, empowering, and positive influences the relationship between project complexity and success.

## INTRODUCTION

Project management entails a process of achieving the desired outcomes or beneficial change, including the manufacturing of products, or delivering services, commonly known as Projects. Projects account for more than 20% of world economy and more than 30% of output in some emerging nations. The deploying resources have brought into limelight Project Management processes amid the rising complexity and ambiguity of tasks (Khalifeh, 2020). Project complexity is an inherent part of any project system and makes it difficult to understand,

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predict, and regulate the latter's overall behavior (Lei, 2020). To address this problem, leaders with viable project teams are necessary as management alone cannot tackle diversity within the teams. Leaders are thus a critical component in projects with a complicated and unpredictable environment, resulting in improved team and project performance (Bhatti, 2021).

For instance, let us consider the construction industry, which is regarded as one of the fundamental industries in developing countries, with close ties to other structures that shape society (Damoah & Kumi, 2020). In Pakistan, construction projects such as roads and buildings are usually classified as public infrastructure, with the state owning and funding them. Despite the increased interest in the field, a large percentage of initiatives continue to fail, and their complexity increases as well. Projects are handled by teams in a complicated work environment under the direction of a project manager. These difficulties have made efficient project management challenging (Khattak & Mustafa, 2019).

A construction project's success is frequently determined by how well it performs in terms of the three criteria of time, money, and quality (Lamprou et al., 2022). Project managers have employed a variety of well-established strategies, such as time scheduling, cost scheduling, risk assessment, etc., to increase the likelihood of achieving this performance (Himina and Hniche, 2022). Nonetheless, despite this, many projects continue to fall short of meeting performance standards on these characteristics and numerous additional criteria for project success proposed by various academics from time to time. Even though it is widely believed that the design and construction process is highly sophisticated for a number of reasons, such as complicated methods for communicating between many project stakeholders, uncertainty and decision-making related to project performance criteria, complicacy of the project complexity and its implications on project planning and execution, complicacy of the project complexity and its consequences on project planning and execution is one of the reasons for this, cited by many researchers (Zheng et al., 2022).

The problem statement of this study is that many project managers lack their attention on the impact of project complexity on team performance that eventually affects project success, specifically in the construction industry of Pakistan.

Even though project complexity has been researched in academics for decades, empirical research in project management is still lacking (Geraldi & Söderlund, 2016). A study by Lan Lu et al (2017) suggested that there is a need to focus on the relationship between project complexity and success outcomes. Clark (2021) opines that investigating project complexity from a causal perspective would provide further understanding about the differential effect of

project complexity's presence or absence. Thus, based on the previous studies, there appears to be a knowledge gap with respect to project complexity and its implications for project success. Research has shown that managing complexity is more difficult in developing countries, as these countries frequently lack in economic, governmental, and social harmony (Wang et al, 2022), have unstable legislative framework (Qiu et al, 2019), have distinct cultural backgrounds (Wamba et al, 2021), and employ low-skilled and cheap workforce due to the lack of educational and cultural awareness (Naido, 2009).

According to the Pakistan Economic Survey, the construction industry contributes for 2.53 percent of the country's GDP (Housing and Construction, 2020). Here, a sophisticated planning system for development exists, but its performance has been never closed to satisfactory (Sahibzada, 2022). Several megaproject failures (partial destruction of the Baloch Colony Bridge in Karachi, falling of the Sher Shah Bridge build in Karachi, budget overrun of the Neelum-Jhelum Hydropower Plant in Muzaffarabad) (Syed, 2018) and some failed Asian Development Projects (ADP) in agriculture, natural resources and rural developments are cases in point. Given the importance of the construction industry, more research is required to know how project complexity influences project complexity in projects and the success of a project has not given much attention (Bjorvatn & Wald, 2018; Floricel et al., 2016; Kermanshachi et al., 2016). Instead of working on project complexity, several academics have advocated for success and methods for managing project complexity (Famiyeh et al., 2017).

**Research Questions**

1) Is there a negative impact of project complexity on project success?
2) Is there a negative impact of project complexity on team performance?
3) Is there a positive impact of team performance on project success?
4) Does the team performance mediate the relationship between project complexity and project success?

## LITERATURE REVIEW

### Project Success

The definition of project success is somewhat comprehensive. A project is successful if it is completed according to the schedule within the allocated budget, and if the stakeholders are satisfied. Success can also be characterized as outcomes that are significantly better than anticipated or typically delivered (Ramlee, 2016). There is no requirement for a consistent

definition of project success; therefore, the entire success of the construction project is referred to as project success in this study.

**Project Complexity Theory**

According to the latest research on project complexity theory of Burnham (2020), projects are viewed differently by complexity theorists: they are nonlinear and dynamic, having the ability to interact with their surroundings, resulting in a system that cannot be understood by studying its components. This viewpoint requires that project team members not be perceived mechanically in an environment where control, order, and predictability are ubiquitous. Instead, project team members should be seen as having a greater level of involvement and influence in the project team's environment and processes to promote learning, creativity, and, most crucially, adaptation.

**Project Complexity and Project Success**

For a variety of reasons, the relevance of project complexity in project management is well recognized (Nguyen et al., 2019). According to Bashki et al. (2016), there are negative effects of project complexity on project success found in research, observed in form of unit cost, effectiveness and efficiency, productivity, time and total cost (Floricel et al., 2016). According to various researchers, it seems that the project complexity effects project success negatively (Bjorvatn & Wald, 2018). In the project management literature, an important connection between project success and project complexity is mentioned and it is also known that this linkage is associated with the results of a project (Bakhshi et al., 2016; Burke & Morley, 2016). Project complexity and project success have a well-established inverse relationship in the project management literature. Regardless of how complexity and uncertainty are described in the literature, it is apparent that they have a significant impact on project success (Dikman, 2021). For construction projects, it is vital to establish the idea of complexity and identify the elements that influence complexity (Nady, 2022).

Several studies have attempted to determine how project complexity affects project success. In a review of over 1,300 projects, Puddicombe (2011) found that technical difficulty and novelty are essential project variables that have different implications on project performance. In five case studies, Antoniadis et al. (2011) found that the effects of interconnections' socio-organo complexity are similar to the behavior of open loop control systems, and that interconnections cause socio-organo complexity, This, if not treated, results in a decline in performance. According to the study of Bosch-Rekveldt (2011), project complexity has a negative impact on

project performance in large engineering projects. In China, researchers have demonstrated the negative impact of project complexity on project success.

Project complexity, according to studies, has a detrimental impact on project performance (Luo, 2015). As a result, it is commonly considered that complexity reduces project performance. As previously stated, the concept of project success is broader than project performance, and other success indicators should be considered in addition to the typical golden triangle. Therefore, by studying the literature of various scholars we can conclude a hypothesis that:

***H 1:*** *There is a negative relationship between Project Complexity and Project Success*

**Project Complexity and Team Performance**

A team is a network that functions as an organization. It has a series of activities, all of which are geared toward a shared purpose (mission) and set of objectives. A team in an organization could be conceived of as a department or business unit. As a result, most organizational performance management practices also apply to team performance management. (Clark, 2019)

However, every project team has skills that contribute to keeping the project moving forward. Project complexity opens new possibilities in its developing characteristics that may adversely affect a project's success. The success of projects is attributed by Chan et al. (2004) to team performance and the associated project complexity. Intuitively, we anticipate that project complexity will either directly or indirectly affect the flexibility of the team.

The significance of project complexity to project management is highlighted by a strict planning, coordinating, and controlling requirement. An adaptable team may experience some pressure from inherent complexity such as roles with unknown procedures, roles managed for the first time, and phase overlap as they develop a strategy to deal with uncertainty (D. Baccarini, 1996). The difficulty of carrying out the plan and maintaining monitoring or backup behaviors in construction projects is necessitating simultaneous close proximity operations from various professions. Decision-making, "dispersion" of project teams, and physically demanding tasks requiring the use of sophisticated equipment are all examples of project complexity. These factors can also affect how effectively a task is carried out (Floricel, 2016). It has been observed that project complexity's social components are related to learning, teamwork, and knowledge management (De Rezende, 2018). Members will be able to examine

the settings of future projects for clues or changes thanks to the information they've gained by adjusting to circumstances in the past initiatives. Therefore, we can hypothesis that,

***H 2:*** *There is a negative relationship between Project Complexity and Team Performance*

**Team Performance and Project Success**

According to M. Imran (2019), the project team plays a crucial role in the project success. The success of a project is strongly linked to the performance of the team. However, there is a scarcity of evidence on such an empirical relationship. In any case, proper selection of project managers and project teams is a surefire way to boost project efficiency and effectiveness.

According to Okoronkwo (2017), finance is not a strategy, not even technology. Because good teams are so powerful and so rare, teamwork remains the ultimate competitive edge." Given the importance of teamwork in completing successful projects, a deeper understanding of how teams work would be beneficial in educating and increasing team performance. A highly coordinated and coherent team is increasingly needed for project management and operations that works together to complete the project successfully.

Numerous articles have been published about teams, with differing viewpoints on what constitutes an effective team. Therefore, we hypothesis that:

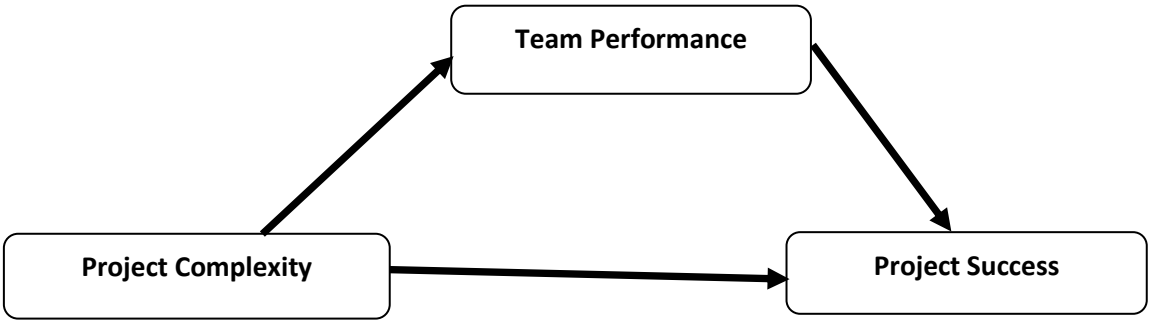
***H 3:*** *There is a positive relationship between Team Performance and Project Success*

**Project Complexity, Team Performance and Project Success**

The relationship of project complexity on team collaboration and performance outcomes has been under the focus of research while studying the impact and effects of project complexity. A phenomenon is explained by Senescu et al. (2013) in the architectural, engineering, and construction on several complexity issues in their study on team collaboration. They discovered through a case study that project team issues rise as complexity increases. The effects of complexity on project team selection, according to Antoniadis et al. (2009), can facilitate the formulation and implementation of project actions. Rather than managing the objects themselves, this encourages effective complexity management of interrelated frameworks that connect them. Luo et al. (2017) findings revealed that as project complexity (e.g., multiplicity and ambiguity) rises, higher and more advanced communication levels are required to achieve maximum performance; however, the complexity of a project activity can actually be lowered with more knowledge and training among team members and project managers. Therefore, from the above studies, we can develop a hypothesis that:

***H 4:*** *The relationship between Project Complexity and Project Success is mediated by Team Performance.*

***Figure 1:*** *Theoretical Framework*




## METHODOLOGY

### Design

It's a quantitative research study and one-time survey is used to gather the data. Correlational research is non-experimental research that allows a researcher to predict and explain the relationship between various variables. It also allows to uncover other variables that relate to the study and as well as their dependencies on each other (Seerum, 2019). Therefore, in this research study, correlational method for determining the relationship between variables is used through deductive reasoning. As a co-relational study is conducted in the organization's naturalistic setting, with the researcher interfering as little as possible with the normal flow of work (Drhanygalal, 2016), therefore the extent of researcher in this study is also minimal. Managers working in the field of project management in the construction industry of Pakistan are the units of analysis. Cross-sectional type of time horizon is used. Primary survey has done to collect data from the respondents. Google Form is used for collecting data online. The data is collected from the managers of construction companies located in all over the Pakistan including private and public organizations. Convenience sampling is a type of non-probability sampling, and it is supposed to be the most cost-effective method of data collection (Etikan et al., 2016). It is used so that the data collection become easy, and a researcher bear minimum cost. As a result, convenience sampling consists of individuals who are both available and willing to participate (Kitchenham & Pfleeger, 2002). Due to the unknown population, the exact size of the sample could not be determined. Therefore 420 respondents participated in the research (Mark Saunders, 2019).

Data collection is done through a structured questionnaire. For the above mentioned three variables, different questionnaires survey is adapted from previous published studies. The five-point Likert-type scales were anchored on the extremes of 5(strongly agree) to 1(strongly

disagree) (Aga 2016) (Appendix A). Research also involves ethical considerations. It is assured that the respondents have relevant experience, that they have worked on complex projects, so that they can be able to contribute effectively to the research issue (Ali, 2020).

**Instrumentation**

**Project Success**

In this study, the questionnaire is adopted from the study Shared Leadership and Project Success: The Roles of Knowledge Sharing, Cohesion and Trust in the Team by Iman & Zaheer (2021). The composite reliability measured by the researchers was 0.93and AVE was 0.52.

**Team Performance**

The questionnaire is based on the paper "Team Effectiveness in Non-Governmental Organizations (NGOs) Projects" by Latif & Williams (2017). Their study's reliability score, which varied from 0.87 to 0.92, showed that the study's measurements were accurate. In addition to reliability analysis, convergent validity was established using Average Variance Extracted. Convergent validity is established if an AVE is 0.50 or above is attained (Fornell & Larcker, 1981). According to their data, the AVE for each construct was higher than 0.50.

**Project Complexity**

The items of project complexity come from Mogens Frank Mikkelsen (2020) article "Perceived project complexity: a survey among practitioners of project management," which was published in the "International Journal of Managing Projects in Business. The assessment was produced in cooperation between a Danish university and an international consulting organization with headquarters in Denmark. The literature study was used to provide a set of selected project complexity characteristics for participants to choose from. The design concepts were chosen from among the most often used project complexity definitions.

## ANALYSIS

**Overview of Demographic Variables**

The demographic survey included age, gender, year of experience, highest level of qualification, location in Pakistan, name of the organization currently working, current project and designation in the organization. The data is submitted by employees working in all over Pakistan, belong from different cities including Lahore, Peshawar, Rawalpindi, Islamabad, Karachi, Kharian, Kashmir, Jhang, Haiderabad, Multan, Bahawalpur, Risaalpur, Faisalabad, Nowshera, Gilgit Baltistan, Naran, Abbottabad and Sakhur. Table 1 describes the sample demographics.

**Table 1:** Sample Demographics

| | Group | N | Frequency (%) |
|---|---|---|---|
| Age | 20-25 | 82 | 19.7 |
| | 26-30 | 194 | 46.2 |
| | 31-35 | 94 | 22.6 |
| | 36-40 | 9 | 2.14 |
| | 41-45 | 7 | 1.66 |
| | 46-50 | 10 | 2.38 |
| | 51-55 | 6 | 1.42 |
| | 56-60 | 9 | 2.14 |
| | 60 Above | 9 | 2.14 |
| Gender | Male | 399 | 97.4 |
| | Female | 21 | 2.60 |
| Years of Experience | 0-5 | 220 | 52.6 |
| | 6-10 | 94 | 22.6 |
| | 11-15 | 57 | 13.7 |
| | 16-20 | 37 | 8.80 |
| | 20 Above | 12 | 2.85 |
| Highest Level of Qualification | FA/FSC | 25 | 5.95 |
| | A Levels/O Levels | 3 | 0.71 |
| | BA/BSC | 57 | 13.57 |
| | BS | 164 | 39.04 |
| | MS | 154 | 36.66 |
| | Other | 17 | 4.04 |

## Measurement model assessment

As part of our measurement model evaluation five items PC1, PC4, PS2 and PS5 were removed from the analysis because of their low factor loadings. According to Items Hair et al (1998), items that have factor loading less than 0.5 should be considered for removal to enhance that validity of data.

## Reliability

To test the reliability of the constructs, the study used Cronbach's Alpha and Composite Reliability. Nunnaly (1978) suggested that a reliability coefficient of 0.7 is appropriate, however lower thresholds have been employed in the literature on occasion. The results for reliability are presented in Table 2.

**Table 2:** Loadings, Reliability and Validity

| | **Outer Loadings** | **Cronbach's Alpha** | **Composite Reliability** |
|---|---|---|---|
| PC2 | 0.739 | 0.786 | 0.846 |
| PC3 | 0.654 | | |
| PC4 | 0.605 | | |
| PC5 | 0.809 | | |
| PC6 | 0.832 | | |
| PS1 | 0.634 | 0.709 | 0.822 |
| PS3 | 0.829 | | |
| PS4 | 0.696 | | |
| PS6 | 0.762 | | |

| | | | |
|---|---|---|---|
| TP1 | 0.751 | 0.720 | 0.820 |
| TP3 | 0.515 | | |
| TP4 | 0.82 | | |

*Note: Threshold for reliability is < 0.7*

All the constructs are higher than the recommended value of 0.700. Cronbach's Alpha of each construct exceeds to the given threshold.

## Construct Validity

The degree to which the test accurately examines what it is supposed to is known as construct validity (Westen and Rosenthal, 2003).

### *Convergent validity*

**Table 3:** Convergent Validity

| Constructs | Average Variance Extract (AVE) |
|---|---|
| PC | 0.581 |
| PS | 0.539 |
| TP | 0.540 |

*Note: Threshold for AVE is 0.5*

A level of 0.5 is considered acceptable for the AVE, which evaluates the degree of variance recorded by the construct vs. the level attributable to measurement error. Values above 0.7 are really good. (Alarcon et al, 2015). As the Average Variance Extract (AVE) is more than 0.5, convergence validity is sufficient. Table 3 shows all the values of AVE predicts good convergent validity.

### *Discriminant validity*

**Table 4**: Fornell-Larcker Criterion

| | PC | PS | TP |
|---|---|---|---|
| PC | **0.762** | | |
| PS | 0.169 | **0.734** | |
| TP | 0.132 | 0.486 | **0.735** |

*Note: Bold values represent square root of AVE*

**Table 5:** HTMT Ratio

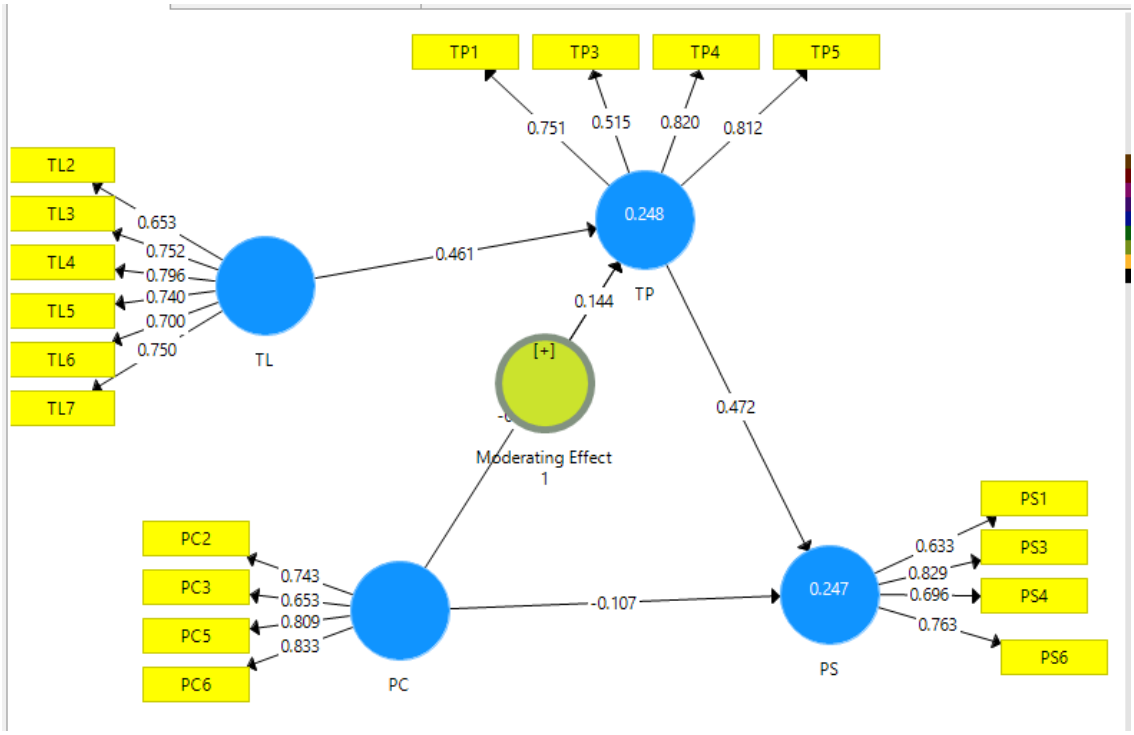
| | PC | PS | TP |
|---|---|---|---|
| PC | | | |
| PS | 0.192 | | |
| TP | 0.113 | 0.542 | |

*Note: Threshold for HTMT is > 0.85*

To access Discriminant Validity, two tests are performed: Fornell-Larcker Criterion (Fornell, 1194) and Heterotrait-Monotrait Ratio (HTMT) (Henseler, 2015). In Table 4, it is shown that the square root of AVE is greater of all the constructs as compared to the correlation with other constructs. A score on the HTMT that is close to 1 indicates that Discriminant Validity is not present. Furthermore, Gold et al. (2001) challenged it and suggested a value of 0.90. Table 5 shows that all the values are below 0.85

## Structural model assessment

***Figure 2**: Structural Model*




Note: *Inner model represents path coefficients, and outer model represents factor loadings*

Figure 2 shows the structural model obtained from PLS-SEM analysis. It shows the effect of Independent variable, dependent variable, mediating variable and moderating variable on each other along with the factor loading of each item included in the data analysis.

## Goodness of Fit: $R^2$, $Q^2$ and STMT

**Table 6:** Goodness of Fit: R2, Q2 and STMT

| | R Square | Q Square | SRMR |
|---|---|---|---|
| **PS** | 0.247 | 0.125 | 0.076 |
| **TP** | 0.246 | 0.122 | 0.076 |

Note: *Threshold for $R^2$ is > 0.1, Threshold for $Q^2$ is > 0, and Threshold for SRMR is > 0.1*

A structural model is generated based on the $R^2$, $Q^2$ and significance of paths. The goodness of the model is assessed by the strength of each structural path determined by $R^2$ value for the dependent variable. In this study, we have Project Success and Team Performance as dependent variables. According to Falk and Miller (1992), the variation explained by a certain endogenous construct should be judged acceptable if the value of $R^2$ is larger than or equal to 0.1. Table 6 shows that all $R^2$ square values are over 0.1. Hence the predictive capability is established. Further the $Q^2$ establishes the predictive relevance of the endogenous constructs. The value of $Q^2$ is greater than 0 showing that the model has predictive relevance (Roldan, &Sanchez 2012). The results from Table 6 show that there is significance in the prediction of

the constructs. Furthermore, the model fit is accessed using SRMR. The value of SRMR is 0.074; this is below the required value of 0.10, indicating acceptable model fit.

## Hypothesis Testing

**Table7:** Hypothesis Testing

| | β | Standard Deviation (STDEV) | T Statistics (\|O/STDEV\|) | P Values | 2.50% | 97.50% |
|---|---|---|---|---|---|---|
| **PC -> PS** | -0.107 | 0.052 | 2.051 | 0.041 | -0.191 | 0.014 |
| **PC -> TP** | -0.190 | 0.059 | 3.198 | 0.001 | -0.280 | -0.026 |
| **TP -> PS** | 0.472 | 0.036 | 13.045 | 0.000 | 0.390 | 0.538 |

**$H_1$: There is a negative relationship between Project Complexity and Project Success**

To determine the importance of the link, the goodness of fit is further evaluated and tested. H1 assesses whether Project Complexity significantly affects Project Success. The findings show that Project Success is significantly impacted by Project Complexity (β=--0.107, t=2.051, p=0.041). Hence $H_1$ is supported.

**$H_2$: There is a negative relationship between Project Complexity and Team Performance**

H2 determines whether Project Complexity Significantly Affects Team Performance. The findings demonstrate that Project Complexity significantly affects Team Performance (β=-0.190, t=3.198, p=0.001). Hence $H_2$ is supported.

**$H_3$: There is a positive relationship between Team Performance and Project Success**

H3 assesses whether team effectiveness significantly affects project success. According to the findings, team effectiveness significantly affects project success (=0.472, t=13.045, p=0.000). H3 is therefore supported.

Table 8 displays the hypothesis outcomes and 95% confidence ranges from the 500 resample used in this investigation. A strong association can be inferred from the confidence intervals' deviation from zero.

## Mediation Analysis

**$H_4$: The relationship between Project Complexity and Project Success is mediated by Team Performance**

**Table 8:** Results of Mediation Analysis

| **Total Effect (PC→PS)** | | **Direct Effect (PC→PS)** | | | **Indirect Effect (PC→PS)** | | | | |
|---|---|---|---|---|---|---|---|---|---|
| B Coefficient | P value | B Coefficient | P value | $H_4$: PC→TP→PS | B Coefficient | SD | T Value | P Value | Bias Corrected Confidence Interval (2.5%, 97.5%) |
| -0.196 | 0.000 | -0.107 | 0.041 | | -0.090 | 0.029 | 3.107 | 0.002 | -0.135, -0.009 |

To understand how Team Performance affected the link between Project Complexity and Project Success, a mediation analysis was conducted. The findings (see Table 9) show a significant indirect relationship between project success and complexity (H4: =-0.090, t=3.107, p=0.002). There is a total effect of project complexity on project success ($H_4$: β=-0.196 t=3.542, p=0.000), with the inclusion of the mediator the direct effect of Project Complexity on Project Success is significant ($H_4$: β=-0.107, t=2.051**,** p=0.041). The results show that there is a partial mediation between the variables. Hence, it is concluded that $H_4$ is supported. Table 8 shows the results of the mediation analysis.

## DISCUSSION

The results of the conceptualization of project complexity study showed that Pakistani project management professionals had a thorough grasp of the ideas of project complexity and project success. The consequences of project complexity on project outcomes in the Pakistani construction sector are understood by project managers, considering both technical and non-technical aspects of complexity concept.

Project complexity and project success are usually depicted as being negatively correlated in studies on construction-related projects. For instance, Wood and Gidado (2018) discovered a negative correlation between project success and complexity. Nguyen et al. (2019) found that characteristics of project complexity, such as risk and uncertainty, have a negative effect on project success. The quantitative finding was statistically significant, and it was consistent with past research on the relationship between project complexity and success.

The findings demonstrated that project teams may reduce the negative effects of project complexity on project success. This is because effective project teams are more likely to have encountered a variety of project-related difficulties, so they are in a good position to use their prior expertise to address issues that develop on challenging projects. The expense of recruiting project teams with experience, however, can reduce the project's overall financial benefits while simultaneously increasing other success metrics like time and quality. According to Lehtiranta et al. (2012), cost-related measures, are crucial factors in determining if a project will succeed. Construction companies invest in higher-quality resources than would typically be needed when they recognize that a project is complex and would require specialized technical expertise to address the project complexity (Hanisch & Wald, 2014). Even if spending money on quality resources may lead to better project success results, cost of hiring more experienced employees to address the complex difficulties is also likely to undermine such

achievements. The project may succeed with the addition of extra resources, but doing so could raise project costs and possibly erode profit margins.

## CONCLUSION

The study's purpose was to understand the relationship between project complexity and project success, as well as how team performance plays a role in mediating this relationship. Even though this study provided empirical support for prior studies, especially on the inverse relationship between project complexity and project success, the relation between project complexity and project success in the Pakistani construction industry was significant. This appears to indicate that, in some cases, defining success may be difficult due to the ambiguous nature of complex projects and the definition of project success in developing countries. The statistically significant relationship between project complexity and success in this study is explained by participant responses. The participants noted that a key factor in minimizing the detrimental effects of project complexity on project success is the performance of the project teams. To reduce the total negative impact of project complexity on project success to a minimum, projects must pay a premium for skilled project teams. The cost of recruiting experienced project teams to manage complex projects might potentially reduce overall financial rewards from efforts. These findings are significant because they indicate the breadth of project conditions encompassed by project complexity. They also imply that, when it comes to dealing with project complexity, specialized solutions that are responsive to specific complexity conditions are likely to be more efficient than standard ones.

In conclusion, issues with team performance are a sign of project complexity in major construction projects. The sort of complexity at play has a significant impact on the success of the project. Therefore, complexity mitigation strategies must be appropriate for the kind of complexity present in the project environment. In order to mitigate the negative consequences of project complexity, it is also important for project leaders to fulfill a variety of leadership positions because of their impact on project success.

## LIMITATIONS AND RECOMMENDATIONS

To conceptualize project complexity in the Pakistani construction industry, the study offers theoretical foundations such as Complexity Theory. These hypotheses haven't gotten enough attention while researching the connection between project complexity and success. Future research could conduct more in-depth empirical tests of these ideas in connection to the factors of project complexity and provide further insight into how such theoretical stances impact project management procedures. Future research might therefore empirically investigate the

about the_role of project experience in the relationship between novelty, uncertainty, and project success. Future research can look at how leadership that is genuine, inspiring, empowering, and positive influences the relationship between project complexity and success. This study does not include Margerison and McCann's research on different types of team member activities and how those functions can be related to project leadership responsibilities. Future research can look at how The Margerison and McCann model that assumes that workers are motivated to undertake work they value moderates the relationship between project complexity and success.

This study has several restrictions. The study's initial focus is on specific construction initiatives within the Pakistani construction sector. Construction project complexity and success are significant issues in emerging economies. However, concentrating solely on Pakistani construction projects may not provide a complete picture of the situation in other developing countries. Other jurisdictions may want to replicate this study using it as a model. The legitimate and unofficial subsectors of the construction industry each have distinctive qualities in terms of scale and clients. Future researchers might wish to concentrate their study on small to medium-sized initiatives as a result. Future research should address the study's shortcoming, which is its emphasis on large-scale construction projects.

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