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STUDY OF THE TEAM DYNAMICS AND CONFLICTS RESOLUTION FOR ENHANCING COLLABORATION AND PERFORMANCE IN PROJECT MANAGEMENT

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Abstract

Effective team dynamics, conflict resolution, and collaboration are crucial for the success of construction projects. Poor communication, lack of trust, and unresolved conflicts can lead to inefficiencies, delays, and cost overruns. Understanding these factors and identifying key elements that influence project performance can improve overall project outcomes. This research aims to examine the impact of team dynamics, conflict resolution strategies, and collaboration on construction project outcomes. The study identifies the most critical factors affecting team performance and provides recommendations for enhancing teamwork and conflict management. A mixed-method approach was used, incorporating both qualitative and quantitative data collection techniques. A structured questionnaire was developed based on an extensive literature review and expert interviews. Data was collected from construction professionals and analyzed using the Relative Importance Index (RII), Analytical Hierarchy Process (AHP), and Statistical Package for the Social Sciences (SPSS) to ensure comprehensive statistical validation. The results indicate that openness in communication (AHP eigenvalue: 0.2566, RII: 0.8407), confidence in roles (AHP eigenvalue: 0.3425, RII: 0.8237), and teamwork (AHP eigenvalue: 0.3408, RII: 0.8068) are the most influential factors in team success. Leadership through effective decision-making (AHP eigenvalue: 0.3365, RII: 0.8102) plays a vital role in achieving project goals. Among conflict types, interpersonal conflicts (AHP eigenvalue: 0.3529, RII: 0.8441) are the most critical and require structured resolution strategies. The study identifies compromise (AHP eigenvalue: 0.2523, RII: 0.8237) as the most effective conflict resolution approach. Moreover, conflict resolution directly impacts project outcomes (AHP eigenvalue: 0.3360, RII: 0.8203), influencing

cost, time, and quality performance. Improving communication, fostering trust, and implementing structured conflict resolution strategies significantly enhance project outcomes in the construction sector. Training (AHP eigenvalue: 0.3397, RII: 0.8542) is found to be the most critical factor in enhancing collaboration. Effective communication (AHP eigenvalue: 0.3391, RII: 0.8441) ensures team alignment, while cost control (AHP eigenvalue: 0.3380, RII: 0.8237) plays a key role in maintaining budget efficiency. The study recommends promoting open communication, structured conflict resolution methods, and focused training programs to strengthen teamwork and collaboration, ultimately leading to better project performance.

1. INTRODUCTION

Team dynamics define how individuals within a group interact, collaborate, and perform. These interactions shape the team's ability to achieve project goals. Effective team dynamics lead to improved collaboration, problem-solving, decision-making (West, 2021). In project management, diverse teams often encounter unique differences challenges due to in cultural backgrounds, skills, and perspectives. differences, if not managed well, can hinder team performance. Strong team dynamics enable clear communication and mutual trust. Teams with positive dynamics share ideas and solve problems collectively. Research shows that well-functioning teams have higher chances of completing projects on time and within budget (Salas et al., 2019). However, poor dynamics, such as a lack of trust or unresolved conflicts, reduce efficiency and increase project risks (Edmondson, 2018).

Team leaders play a crucial role in shaping dynamics. They influence how members communicate and resolve issues. Leaders who foster collaboration and inclusivity create teams that are better equipped to handle challenges (Turner et al., 2022).

Conflict arises when individuals or groups perceive incompatibilities in goals or actions. In project teams, conflicts often occur due to differences in work styles, priorities, or resource allocation. Conflict in project teams can take two primary forms: task conflict and relationship conflict (Jehn & Bendersky, 2021).

Task conflict relates to disagreements about project goals or methods. It can benefit teams by encouraging critical thinking and innovation (DeChurch & Marks, 2020). When managed effectively, task conflict helps refine strategies and improve decision-making (O'Neill et al., 2021).

However, if left unresolved, it can lead to delays and resource wastage.

Relationship conflict, rooted in personal differences, harms team cohesion and productivity. It creates a hostile environment where team members avoid collaboration (Amason & Schweiger, 2020). Studies confirm that unresolved relationship conflict reduces team morale and increases turnover rates (Runde & Flanagan, 2022). Effective conflict management is crucial to prevent such issues.

Team dynamics and conflict resolution significantly influence project outcomes. Projects with cohesive teams and constructive conflict management are more likely to succeed (Kozlowski & Ilgen, 2021). Teams with positive dynamics align better on goals and manage resources efficiently. In contrast, dysfunctional dynamics often result in poor decision-making and project delays (Hackman, 2020).

Conflict management helps maintain focus on objectives. Teams that address conflicts early minimize disruptions. Researchers highlight that unresolved conflicts often lead to budget overruns and quality issues (Wall & Callister, 2021). Addressing both task and relationship conflicts enhances teamwork and project delivery (Pelled et al., 2021).

2. LITERATURE REVIEW

Team dynamics influence how individuals interact and collaborate in projects. Positive dynamics improve communication, trust, and productivity. Teams with good dynamics perform better and meet project goals more effectively. Studies show that cohesive teams achieve higher efficiency and innovation than those with poor dynamics (Hackman, 2020).

Leadership significantly shapes team dynamics. Transformational leaders encourage collaboration and foster open communication. This approach creates stronger bonds among team members (Turner et al., 2022). On the other hand, ineffective leadership weakens trust and increases conflicts. Diverse teams also face challenges in achieving alignment due to differences in work styles and communication preferences (Salas et al., 2019).

Organizational culture plays a vital role in shaping team behavior. Supportive environments enhance psychological safety, allowing members to share concerns openly. Teams that feel safe are more likely to resolve conflicts constructively and focus on achieving project objectives (Edmondson, 2018). Strong team dynamics not only boost collaboration but also reduce the risks of delays and misunderstandings.

3. METHODOLOGY

In the gathering of both quantitative and qualitative data, a mixed method approach will be used, and the research problem will be comprehensively understood. The flow chart below describes the detailed research methodology.

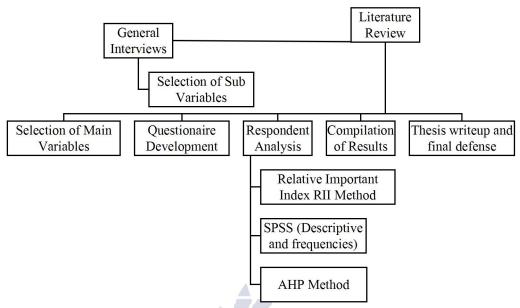


Figure 1: Flow chart of Research Methodology

4. RESULTS

The analysis of data was collected through the questionnaire distributed via Google Forms. The study focuses on the responses provided by professionals in the construction industry in

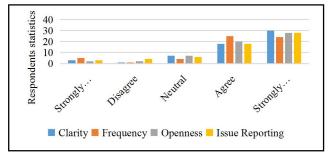


Figure 2: Respondent Analysis of Communication

Pakistan. The data is analyzed using Relative Importance Index (RII), Analytical Hierarchy Process (AHP), and statistical methods through SPSS. The findings provide insights into team dynamics and conflict resolution strategies in project management.

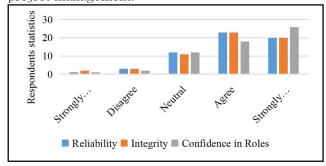


Figure 3: Respondent Analysis of Trust

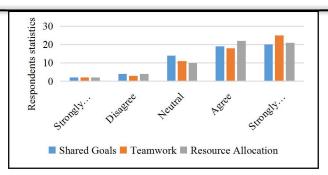


Figure 4: Respondent Analysis of Collaboration

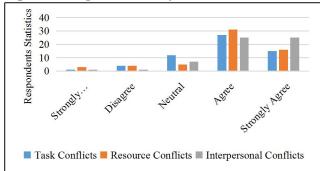


Figure 6: Respondent Analysis of Types of Conflicts

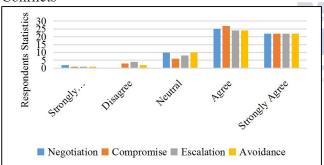


Figure 7: Respondent Analysis of Conflict Resolution Approaches

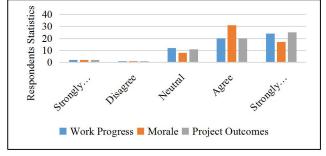


Figure 8: Respondent Analysis of Impact of Conflict Resolution

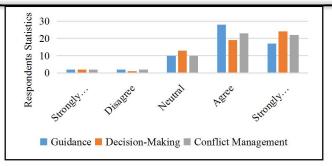
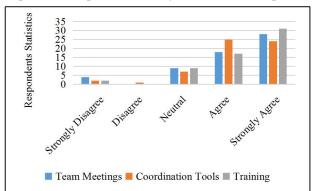


Figure 5: Respondent Analysis of Leadership



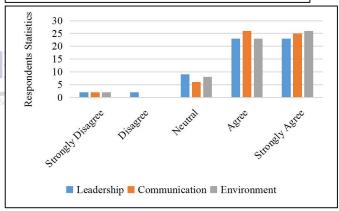


Figure 10: Respondent Analysis of Factors Influencing Team Performance

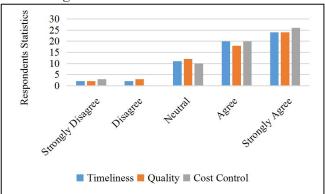


Figure 11: Respondent Analysis of Project Outcomes

Figure 9: Respondent Analysis of Collaborative Practices

Relative Important Index RII

Relative Importance Index (RII) is a tool for measurement and ranking of the variables. They get to decide the relevance of the work in research.

In this research, RII is employed to classify factors into key factors. These aspects affect issues to do with teams, conflicts in general and results of projects.

RII provides a clear priority list. It helps researchers focus on the most critical elements. This ensures better decision-making and targeted solutions.

In construction projects, RII highlights areas requiring attention. It supports efforts to enhance collaboration and resolve conflicts.

Using RII improves the accuracy of findings. It makes the research more effective and practical for real-world applications.

The formula for RII is:

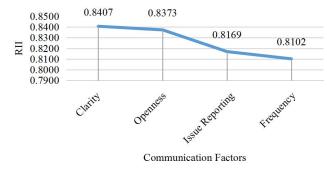


Figure 12: RII Rank of Communication Factors

$$RII = \frac{\Sigma(W \times N)}{A \times N}$$

In this formula, W represents the weight assigned to each response. It ranges from 1 for Strongly Disagree to 5 for Strongly Agree.

A represents the maximum possible weight. In this study, A equals 5. N represents the total number of respondents. RII quantifies the relative importance of key variables. These variables include communication, trust, collaboration, and leadership. It aggregates and normalizes survey responses to provide clear insights.

This method ranks variables systematically. It helps project managers focus on the most critical areas. RII simplifies data analysis by converting qualitative responses into numerical values. This makes interpretation and comparison easier.

Using RII ensures the research identifies the most significant factors. It highlights areas that impact team performance the most. This supports better decision-making and prioritizes areas needing immediate attention.

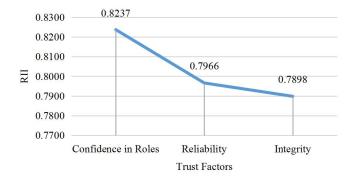


Figure 13: RII Rank of Trust Factors

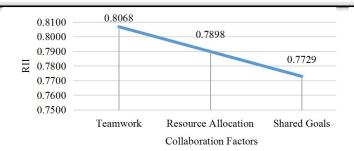


Figure 14: RII Rank of Collaboration Factors

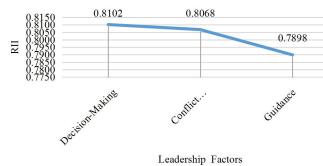


Figure 15: RII Rank of Leadership Factors

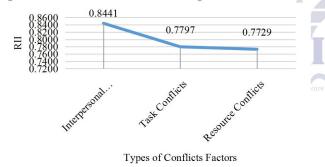


Figure 16: RII Rank of Types of Conflicts Factors



Figure 17: RII Rank of Types of Conflict Resolution Approaches Factors

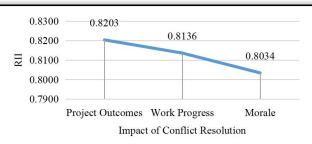


Figure 18: RII Rank of Types of Impact of Conflict Resolution

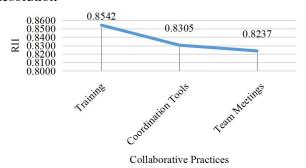


Figure 19: RII Rank of Types of Collaborative Practices

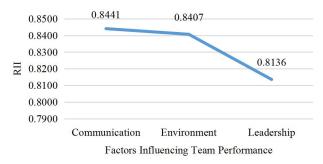


Figure 20: RII Rank of Factors Influencing Team Performance

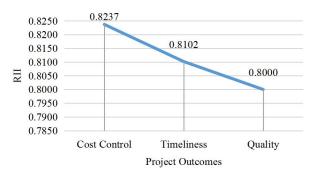


Figure 21: RII Rank of Project Outcomes

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Analytical Hierarchy Process (AHP)

Applying AHP made the study more robust. It also supported the priorities like communication, leadership and collaboration are critical for enhancing the performance in construction projects. The integration of RII and AHP was performed with the aim of making the study useful and based on a strong foundation through offering recommendations for success.

These findings point clearly to areas which could be utilized to improve team dynamics. These aspects if well addressed will assist teams in enhancing their coordination, managing conflict and producing better project results. Emphasizing on openness, clarity, confidence, teamwork and decision making enhances the project success rate.

Table 1: AHP Analysis of Team Dynamics in Construction Projects

| A-1 Communication | Clarity | Frequency | Openness | Issue Reporting | | | |
|----------------------|-------------|-----------|-------------------------------|-------------------------|---------|----------------|-------|
| Geometric Mean | 3.988 | 3.775 | 4.005 | 3.840 | | | |
| Clarity | 1.000 | 1.057 | 0.996 | 1.039 | - | | |
| Frequency | 0.946 | 1.000 | 0.942 | 0.983 | | | |
| Openness | 1.004 | 1.061 | 1.000 | 1.043 | | | |
| Issue Reporting | 0.963 | 1.017 | 0.959 | 1.000 | | | _ |
| A-1 Communication | Clarity | Frequency | Openness | Issue Reporting | Row Sum | Eigen Value | |
| Clarity | 4.000 | 4.226 | 3.983 | 4.155 | 16.36 | 0.256 | |
| Frequency | 3.786 | 4.000 | 3.770 | 3.932 | 15.48 | 0.242 | |
| Openness | 4.017 | 4.244 | 4.000 | 4.172 | 16.43 | 0.257 | |
| Issue Reporting | 3.851 | 4.069 | 3.835 | 4.000 | 15.75 | 0.246 | |
| | | Ins | itute for Excellence in Educa | tion & R esearch | 64.04 | 1.000 | |
| A-1 Communication | Clarity | Frequency | Openness | Issue Reporting | Row Sum | Eigen Value | Check |
| Clarity | 64.000 | 67.623 | 63.733 | 66.474 | 261.830 | 0.256 | 0.000 |
| Frequency | 60.572 | 64.000 | 60.319 | 62.913 | 247.804 | 0.242 | 0.000 |
| Openness | 64.268 | 67.906 | 64.000 | 66.753 | 262.927 | 0.257 | 0.000 |
| Issue Reporting | 61.618 | 65.105 | 61.360 | 64.000 | 252.084 | 0.246 | 0.000 |
| | | | | | 1024.64 | 1.000 | |
| A-2 Trust | Reliability | Integrity | Confidence in Roles | | | | |
| Geometric Mean | 3.837 | 3.766 | 3.971 | | | | |
| Reliability | 1.000 | 1.000 | 1.000 | | | | |
| Integrity | 0.982 | 1.000 | 0.948 | | | | |
| Confidence in Roles | 1.035 | 1.054 | 1.000 | | | | |

| A-2 Trust | Reliability | Integrity | Confidence in Roles | Row Sum | Eigen Value |
|-------------|-------------|-----------|---------------------|---------|-------------|
| Reliability | 3.017 | 3.054 | 2.948 | 9.019 | 0.333 |

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| Integrity | 2.945 | 2.982 | 2.878 | 8.804 | 0.325 |
|---|--|---------------------|---------------------------------------|----------------|-------------|
| Confidence in Roles | 3.105 | 3.144 | 3.035 | 9.284 | 0.342 |
| TOOLS | 3.103 | 3.111 | 3.033 | 27.108 | 1.000 |
| A-3 Leadership | Guidance | Decision- Making | Conflict Management | 27.100 | 11000 |
| Geometric Mean | 3.786 | 3.877 | 3.858 | - | |
| Guidance | 1.000 | 0.977 | 0.981 | - | |
| Decision-Making | 1.024 | 1.000 | 1.005 | - | |
| Conflict Management | 1.019 | 0.995 | 1.000 | | |
| A-3 Leadership | Guidance | Decision- Making | Conflict Management | Row Sum | Eigen Value |
| Guidance | 3.000 | 2.930 | 2.944 | 8.874 | 0.329 |
| Decision-Making | 3.072 | 3.000 | 3.014 | 9.086 | 0.336 |
| Conflict | | | | | |
| Management | 3.057 | 2.986 | 3.000 | 9.043 | 0.335 |
| | g 10 1 | | Resource | 27.003 | 1.000 |
| A-4 Collaboration | Shared Goals | Teamwork | Allocation | | |
| Geometric Mean | 3.668 | 3.838 | 3.755 | - | |
| Shared Goals | 1.000 | 0.956 | 0.977 | - | |
| Teamwork | 1.046 | 1.000 | 1.022 | | |
| Resource Allocation | 1.024 | 0.978 | 1.000 | EK | |
| A-4 Collaboration | Shared Goals | Teamwork | Resource Allocation are in Education | Row Sum | Eigen Value |
| A-4 Collaboration | 51111100 001111 | | | | |
| Shared Goals | 3.000 | 2.867 | 2.931 | 8.798 | 0.326 |
| | | 2.867 3.000 | 2.931 3.067 | 9.206 | 0.326 |
| Shared Goals | 3.000 | | | | |
| Shared Goals Teamwork Resource | 3.000 3.139 | 3.000 | 3.067 | 9.206 | 0.341 |
| Shared Goals Teamwork Resource | 3.000 3.139 3.071 | 3.000 | 3.067 | 9.206 9.005 | 0.341 |
| Shared Goals Teamwork Resource Allocation | 3.000 3.139 3.071 | 3.000 | 3.067 | 9.206 9.005 | 0.341 |
| Shared Goals Teamwork Resource Allocation Section A: Team Dyn | 3.000 3.139 3.071 namics in Construction | 3.000 | 3.067 | 9.206 9.005 | 0.341 |
| Shared Goals Teamwork Resource Allocation Section A: Team Dyn Main Variable 1: Con | 3.000 3.139 3.071 | 3.000 | 3.067 | 9.206 9.005 | 0.341 |
| Shared Goals Teamwork Resource Allocation Section A: Team Dyn Main Variable 1: Con Openness | 3.000 3.139 3.071 namics in Construct mmunication 0.256 | 3.000 | 3.067 | 9.206 9.005 | 0.341 |
| Shared Goals Teamwork Resource Allocation Section A: Team Dyn Main Variable 1: Con Openness Clarity | 3.000 3.139 3.071 namics in Construct munication 0.256 0.255 | 3.000 | 3.067 | 9.206 9.005 | 0.341 |
| Shared Goals Teamwork Resource Allocation Section A: Team Dyn Main Variable 1: Con Openness Clarity Issue Reporting | 3.000 3.139 3.071 mamics in Construct munication 0.256 0.255 0.246 0.241 | 3.000 | 3.067 | 9.206 9.005 | 0.341 |
| Shared Goals Teamwork Resource Allocation Section A: Team Dyn Main Variable 1: Con Openness Clarity Issue Reporting Frequency | 3.000 3.139 3.071 mamics in Construct munication 0.256 0.255 0.246 0.241 | 3.000 | 3.067 | 9.206 9.005 | 0.341 |
| Shared Goals Teamwork Resource Allocation Section A: Team Dyn Main Variable 1: Con Openness Clarity Issue Reporting Frequency Main Variable 2: Tru | 3.000 3.139 3.071 mamics in Construct mmunication 0.256 0.246 0.241 st 0.342 | 3.000 | 3.067 | 9.206 9.005 | 0.341 |
| Shared Goals Teamwork Resource Allocation Section A: Team Dyn Main Variable 1: Con Openness Clarity Issue Reporting Frequency Main Variable 2: Tru Confidence in Roles | 3.000 3.139 3.071 mamics in Construct mmunication 0.256 0.255 0.246 0.241 st 0.342 0.332 | 3.000 | 3.067 | 9.206 9.005 | 0.341 |
| Shared Goals Teamwork Resource Allocation Section A: Team Dyn Main Variable 1: Con Openness Clarity Issue Reporting Frequency Main Variable 2: Tru Confidence in Roles Reliability Integrity | 3.000 3.139 3.071 namics in Construct mmunication 0.256 0.246 0.241 st 0.342 0.332 0.324 | 3.000 | 3.067 | 9.206 9.005 | 0.341 |
| Shared Goals Teamwork Resource Allocation Section A: Team Dyn Main Variable 1: Con Openness Clarity Issue Reporting Frequency Main Variable 2: Tru Confidence in Roles Reliability | 3.000 3.139 3.071 namics in Construct mmunication 0.256 0.246 0.241 st 0.342 0.332 0.324 | 3.000 | 3.067 | 9.206 9.005 | 0.341 |

| Resource Allocation | 0.333 | | | | |
|---------------------------|-----------------------------|--|--|--|--|
| Shared Goals | 0.326 | | | | |
| Main Variable 4: Leadersh | Main Variable 4: Leadership | | | | |
| Decision-Making | 0.337 | | | | |
| Conflict Management | 0.335 | | | | |
| Guidance | 0.329 | | | | |

| Conflict Resolution Approaches | Negotiation | Compromise | Escalation | Avoidance | | |
|-----------------------------------|----------------|---|-------------------------|-----------|-------------|----------------|
| Geometric Mean | 3.950 | 3.981 | 3.896 | 3.950 | _ | |
| Negotiation | 1.000 | 0.992 | 1.014 | 1.000 | | |
| Compromise | 1.008 | 1.000 | 1.022 | 1.008 | | |
| Escalation | 0.986 | 0.979 | 1.000 | 0.986 | | |
| Avoidance | 1.000 | 0.992 | 1.014 | 1.000 | | |
| Conflict Resolution Approaches | Negotiation | Compromise | Escalation | Avoidance | Row Sum | Eigen Value |
| Negotiation | 4.00 | 3.97 | 4.06 | 4.00 | 16.02 | 0.25 |
| Compromise | 4.03 | 4.00 | 4.09 | 4.03 | 16.15 | 0.25 |
| Escalation | 3.95 | 3.91 | 4.00 | 3.95 | 15.81 | 0.25 |
| Avoidance | 4.00 | 3.97 | 4.06 | 4.00 | 16.02 | 0.25 |
| | | 1 | | | 64.00 | 1.00 |
| Conflict Resolution Approaches | Negotiation | Compromise | Escalation | Avoidance | Row Sum | Eigen Value |
| Negotiation | 64.00 | 63.51 itute for Excellence in Education 8 | 164.89 ch | 64.00 | 256.39 | 0.25 |
| Compromise | 64.50 | 64.00 | 65.39 | 64.50 | 258.39 | 0.25 |
| Escalation | 63.13 | 62.64 | 64.00 | 63.13 | 252.89 | 0.25 |
| Avoidance | 64.00 | 63.51 | 64.89 | 64.00 | 256.39 | 0.25 |
| | | | | | 1024.06 | 1.00 |
| Types of Conflicts | Task Conflicts | Resource Conflicts | Interpersonal Conflicts | | | |
| Geometric Mean | 3.72 | 3.69 | 4.10 | | | |
| Task Conflicts | 1.00 | 1.00 | 1.00 | | | |
| Resource Conflicts | 0.99 | 1.00 | 0.90 | | | |
| Interpersonal Conflicts | 1.10 | 1.11 | 1.00 | | | |
| | | | | | | _ |
| Types of Conflicts | Task Conflicts | Resource Conflicts | Interpersonal Conflicts | Row Sum | Eigen Value | |
| Task Conflicts | 3.09 | 3.11 | 2.90 | 9.10 | 0.33 | 7 |
| Resource Conflicts | 2.97 | 2.99 | 2.79 | 8.75 | 0.32 | |
| Interpersonal Conflicts | 3.31 | 3.33 | 3.10 | 9.74 | 0.35 | |
| | | | | 27.59 | 1.00 | |
| Impact of Conflict Resolution | Work Progress | Morale | Project Outcomes | | · | _ |
| - | 3.90 | 3.87 | 3.93 | | | |

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| Work Progress | 1.00 | 1.01 | 0.99 |
|------------------|------|------|------|
| Morale | 0.99 | 1.00 | 0.98 |
| Project Outcomes | 1.01 | 1.02 | 1.00 |

| Impact of Conflict Resolution | Work Progress | Morale | Project Outcomes | Row Sum | Eigen Value |
|----------------------------------|---------------|--------|------------------|-------------|-------------|
| Work Progress | 3.00 | 3.02 | 2.97 | 9.00 | 0.33 |
| Morale | 2.98 | 3.00 | 2.95 | 8.93 | 0.33 |
| Project Outcomes | 3.03 | 3.05 | 3.00 | 9.07 | 0.34 |
| | | | | 27.00110346 | 1 |

| Types of Conflicts | |
|--------------------------------|-------|
| Interpersonal Conflicts | 0.352 |
| Task Conflicts | 0.329 |
| Resource Conflicts | 0.317 |
| Conflict Resolution Approaches | |
| Compromise | 0.252 |
| Negotiation | 0.250 |
| Avoidance | 0.250 |
| Escalation | 0.246 |
| Impact of Conflict Resolution | |
| Project Outcomes | 0.336 |
| Work Progress | 0.333 |
| Morale | 0.330 |

| Collaborative Practices | Team Meetings | Coordination Tools | Training | | |
|--------------------------------------|---------------|--------------------|-------------|------------|-------------|
| Geometric Mean | 3.874 | 3.992 | 4.107 | | |
| Team Meetings | 1 | 1 | 1 | | |
| Coordination Tools | 1.030 | 1.000 | 0.972 | | |
| Training | 1.060 | 1.029 | 1.000 | | |
| | | | | | |
| Collaborative Practices | Team Meetings | Coordination Tools | Training | Row Sum | Eigen Value |
| Team Meetings | 3.090 | 3.029 | 2.972 | 9.091 | 0.3301 |
| Coordination Tools | 3.091 | 3.030 | 2.974 | 9.095 | 0.3302 |
| Training | 3.180 | 3.118 | 3.060 | 9.358 | 0.3397 |
| | | | | 27.545 | 1.000 |
| Factors Influencing Team Performance | Leadership | Communication | Environment | | |
| Geometric Mean | 3.892 | 4.074 | 4.050 | | |
| Leadership | 1.000 | 0.955 | 0.961 | | |
| Communication | 1 047 | 1 000 | 1 006 | | |

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1.000

27.004

| Environment | 1.041 | 0.994 | 1.000 | | |
|--------------------------------------|------------|---------------|--------------|------------|-------------|
| | | | | | |
| Factors Influencing Team Performance | Leadership | Communication | Environment | Row Sum | Eigen Value |
| Leadership | 3.000 | 2.866 | 2.883 | 8.749 | 0.3239 |
| Communication | 3.140 | 3.000 | 3.018 | 9.158 | 0.3391 |
| Environment | 3.122 | 2.982 | 3.000 | 9.104 | 0.3370 |
| | | | | 27.011 | 1.000 |
| Project Outcomes | Timeliness | Quality | Cost Control | | |
| Geometric Mean | 3.869 | 3.805 | 3.917 | | |
| Timeliness | 1.000 | 1.017 | 0.988 | | |
| Quality | 0.984 | 1.000 | 0.971 | | |
| Cost Control | 1.013 | 1.029 | 1.000 | | |
| Project Outcomes | Timeliness | Quality | Cost Control | Row Sum | Eigen Value |
| Timeliness | 3.000 | 3.050 | 2.963 | 9.013 | 0.333 |
| Quality | 2.951 | 3.000 | 2.914 | 8.865 | 0.328 |
| Cost Control | 3.038 | 3.088 | 3.000 | 9.126 | 0.338 |

| Section C: Collaboration and Performance in Construction | n Projects |
|--|------------|
| Main Variable 1: Collaborative Practices | |
| Training | 0.339 |
| Coordination Tools | 0.330 |
| Team Meetings | 0.330 |
| Main Variable 2: Factors Influencing Team Performance | |
| Communication | 0.339 |
| Environment | 0.337 |
| Leadership | 0.3234 |
| Main Variable 3: Project Outcomes | |
| Cost Control | 0.338 |
| Timeliness | 0.334 |
| Quality | 0.328 |

Making attention to these priorities, cooperation increases and organizations' efficiency improves. These touch on aspects such as leadership, environment and timeliness, as well as other supporting aspects that need to progress at an equal pace. The main strategies of management activity that guarantee sustainable development include training, communication, and cost

management. They assist groups in attaining project objectives and continued acceptance by stakeholders. Focusing on such areas helps to create better teams and achieve more stable project results.

SPSS Descriptive Statistics- Quantitative Analysis

In SPSS Descriptive Statistics were done for quantitative analysis, the data sheet was made and the scales was

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described for each response. Each variable and sub factors were designated. The table below represents the quantitative analysis done of SPSS software and analysis output obtained as descriptive statistics. This analysis

has been done to verify the manual qualitative analysis RII and AHP.

Table 4: Quantitative Analysis- SPSS Descriptive Statistics

| | | | Statistics | | |
|------------------------|----|-------------------------|------------------------------|--------|----------------|
| Descriptive Statistics | | | | | |
| | N | Minimum | Maximum | Mean | Std. Deviation |
| A1TDCC | 59 | 1.00 | 5.00 | 4.2034 | 1.06317 |
| A1TDCF | 59 | 1.00 | 5.00 | 4.0508 | 1.15107 |
| A1TDCO | 59 | 1.00 | 5.00 | 4.1864 | 1.00815 |
| A1TDCIR | 59 | 1.00 | 5.00 | 4.0847 | 1.14903 |
| A2TDTR | 59 | 1.00 | 5.00 | 3.9831 | .95577 |
| A2TDTI | 59 | 1.00 | 5.00 | 3.9492 | 1.02425 |
| A2TDTCR | 59 | 1.00 | 5.00 | 4.1186 | .96641 |
| A3TDCoSG | 59 | 1.00 | 5.00 | 3.8644 | 1.07411 |
| A3TDCoT | 59 | 1.00 | 5.00 | 4.0339 | 1.06619 |
| A3TDCoRA | 59 | 1.00 | 5.00 | 3.9492 | 1.05738 |
| A4TDLG | 59 | 1.00 | 5.00 | 3.9492 | .95455 |
| A4TDLDM | 59 | 1.00 | 5.00 | 4.0508 | 1.00728 |
| A4TDLCM | 59 | 1.00 | 5.00 | 4.0339 | .99942 |
| B1CRTCTC | 59 | 1.00 | 5.00 | 3.8644 | .93694 |
| B1CRTCRC | 59 | 1.00 Institute for Exce | 1e 5.00 Education & Research | 3.8983 | 1.04543 |
| B1CRTCIC | 59 | 1.00 | 5.00 | 4.2203 | .85234 |
| B2CRCRAN | 59 | 1.00 | 5.00 | 4.1017 | .92279 |
| B2CRCRAC | 59 | 1.00 | 5.00 | 4.1186 | .91132 |
| B2CRCRAE | 59 | 1.00 | 5.00 | 4.0508 | .97244 |
| B2CRCRAA | 59 | 1.00 | 5.00 | 4.0847 | .91516 |
| B3CRICRWP | 59 | 1.00 | 5.00 | 4.0678 | .99766 |
| B3CRICRM | 59 | 1.00 | 5.00 | 4.0169 | .90003 |
| B3CRICRPO | 59 | 1.00 | 5.00 | 4.1017 | .99473 |
| C1CPCPTM | 59 | 1.00 | 5.00 | 4.1186 | 1.11548 |
| C1CPCPCT | 59 | 1.00 | 5.00 | 4.1525 | .94346 |
| C1CPCPT | 59 | 1.00 | 5.00 | 4.2712 | .96187 |
| C2CPFITPL | 59 | 1.00 | 5.00 | 4.0678 | .99766 |
| C2CPFITPC | 59 | 1.00 | 5.00 | 4.2203 | .89188 |
| C2CPFITPE | 59 | 1.00 | 5.00 | 4.2034 | .92438 |
| СЗСРРОТ | 59 | 1.00 | 5.00 | 4.0508 | 1.02425 |
| C3CPPOQ | 59 | 1.00 | 5.00 | 4.0000 | 1.06674 |

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| C3CPPOCC | 59 | 1.00 | 5.00 | 4.1186 | 1.03532 |
|--------------------|----|------|------|--------|---------|
| Valid N (listwise) | 59 | | | | |

5. CONCLUSION

Team Dynamics in Construction Projects

The most important factor in communication is Openness, with an AHP eigenvalue of 0.2566 and an RII of 0.8407. Openness in communication ensures transparent and accessible communication among all project stakeholders, enabling better alignment and prompt resolution of issues, which contributes significantly to project success. The most important factor in trust is Confidence in Roles, with an AHP eigenvalue of 0.3425 and an RII of 0.8237. When team members have confidence in each other's technical and managerial abilities, it fosters trust, encouraging collaboration and efficient task execution. The most important factor in collaboration is **Teamwork**, with an AHP eigenvalue of 0.3408 and an RII of 0.8068. Effective teamwork is essential for overcoming challenges and solving problems, and it plays a critical role in achieving project goals. The most important factor in leadership is Decision-Making, with an AHP eigenvalue of 0.3365 and an RII of 0.8102. Timely and transparent decision-making by leadership helps guide the team toward project milestones, resolve conflicts efficiently, and maintain project momentum.

Conflict Resolution in Construction Projects

The most important factor in types of conflicts is Interpersonal Conflicts, with an AHP eigenvalue of 0.3529 and an RII of 0.8441. Interpersonal conflicts among workers, contractors, and engineers are the most disruptive to workflow, highlighting the importance of managing personal dynamics effectively to ensure smooth project execution.

The most important conflict resolution approach is Compromise, with an AHP eigenvalue of 0.2523 and an RII of 0.8237. Compromise is often used to resolve disputes, indicating that finding middle ground through negotiation and mutual agreement is essential for maintaining project progress and team harmony.

The most important impact of conflict resolution is Project Outcomes, with an AHP eigenvalue of 0.3360 and an RII of 0.8203. Effective conflict resolution directly contributes to achieving project objectives such as cost, time, and quality, reinforcing its critical role in project success.

Collaboration and Performance in Construction Projects

The most important factor in collaborative practices is Training, with an AHP eigenvalue of 0.3397 and an RII of 0.8542. Training programs focused on

communication and conflict resolution are essential for improving collaboration among team members and ensuring smoother project execution.

The most important factor influencing team performance is Communication, with an AHP eigenvalue of 0.3391 and an RII of 0.8441. Clear and effective communication among all project stakeholders enhances team efficiency and ensures that everyone is aligned towards achieving common project goals.

The most important factor in project outcomes is Cost Control, with an AHP eigenvalue of 0.3380 and an RII of 0.8237. Good team dynamics and effective collaboration play a vital role in controlling project costs, reducing budget overruns, and ensuring the financial success of the project.

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