

Chapter 4: Statistical Analysis and Findings

4.1 Introduction

This chapter presents the statistical analysis and empirical findings of the study examining the impact of manager–employee relationships on team performance at APSCO, Saudi Arabia. The purpose of this chapter is to analyze the data collected through the questionnaire and to evaluate the proposed research hypotheses developed in Chapter 1 and supported by the theoretical framework discussed in Chapter 2. By applying appropriate statistical techniques, this chapter aims to determine whether the relational dimensions between managers and employees significantly influence team performance within the organizational context.

The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS). Several statistical procedures were employed to ensure a comprehensive examination of the research variables. The analysis begins with an overview of the sample profile, which provides descriptive information about the demographic characteristics of the respondents. This helps in understanding the composition of the research sample and ensures that the collected data represent employees with varying levels of experience and organizational roles.

Following the sample profile, validity and reliability tests are conducted to evaluate the measurement quality of the questionnaire used in this study. Reliability analysis, primarily through Cronbach’s alpha, assesses the internal consistency of the measurement scales, ensuring that the items used to measure each construct produce stable and consistent results. Validity tests are also considered to confirm that the measurement items adequately

represent the theoretical constructs of manager–employee relationships and team performance.

After establishing the reliability and validity of the research instruments, descriptive statistics are presented to summarize the central tendencies and variability of the study variables, including trust, communication, managerial support, fairness, and team performance. These statistics provide a preliminary understanding of respondents’ perceptions regarding relational leadership practices and team effectiveness within APSCO.

The chapter then proceeds to hypothesis testing, where inferential statistical techniques are used to examine the relationships between the independent and dependent variables. Correlation analysis is first conducted to identify the strength and direction of relationships between the variables. Subsequently, multiple regression analysis is employed to determine the predictive influence of manager–employee relationship dimensions on team performance.

Finally, the statistical results are interpreted and discussed in relation to the existing literature, linking the empirical findings with the theoretical perspectives outlined in Chapter 2, including Leader–Member Exchange (LMX) theory and Social Exchange Theory. This discussion helps to contextualize the findings within broader organizational behavior research and highlights how relational leadership contributes to improved team performance.

Overall, this chapter provides a systematic analysis of the research data and establishes empirical evidence for evaluating the proposed hypotheses. The insights derived from the statistical results form the basis for the discussion of

implications, recommendations, and future research directions presented in the following chapter.

4.2 Sample Profile

A total of 165 questionnaires were distributed electronically to employees at APSCO. Of these, 150 completed responses were returned and deemed usable, yielding a response rate of 90.9%, which is considered satisfactory for quantitative organizational research.

Table 4.1. Demographic Characteristics of Respondents (N = 150)

Variable	Category	Frequency	Percentage
Gender	Male	98	65.3%
	Female	52	34.7%
Age	25–34	61	40.7%
	35–44	54	36.0%
	45+	35	23.3%
Experience	<5 years	28	18.7%
	5–10 years	67	44.7%

Variable	Category	Frequency	Percentage
	11+ years	55	36.6%

The majority of respondents were male (65.3%) and between 25 and 44 years old (76.7%). Most participants had more than five years of work experience, indicating familiarity with organizational structures and team processes.

4.3. Validity and Reliability Tests

Before conducting the main statistical analyses, it is essential to evaluate the reliability and validity of the measurement instruments used in this study. Reliability and validity tests help ensure that the questionnaire items accurately and consistently measure the intended constructs. In this research, the constructs examined include trust, communication, managerial support, fairness, and team performance. Reliability was assessed using Cronbach's alpha to determine the internal consistency of the measurement scales, while validity was examined through correlation analysis to confirm that the questionnaire items adequately represent the theoretical constructs.

4.3.1 Reliability Analysis

Reliability refers to the degree to which a measurement instrument produces consistent and stable results when applied repeatedly under similar conditions. In quantitative research, internal consistency reliability is

commonly evaluated using Cronbach's alpha coefficient. According to Joseph F. Hair Jr. et al. (2019), a Cronbach's alpha value of 0.70 or higher is generally considered acceptable, indicating that the items used to measure a construct are sufficiently consistent.

Cronbach's alpha was calculated for each construct included in the questionnaire, namely trust, communication, managerial support, fairness, and team performance. The results of the reliability analysis are presented in Table 4.2.

Table 4.2. Reliability Statistics

Construct	Items	Cronbach's α
Trust	3	.84
Communication	3	.82
Managerial Support	3	.86
Fairness	3	.80
Team Performance	5	.88

The results show that all constructs have Cronbach's alpha values above the recommended threshold of 0.70, indicating satisfactory internal consistency. Among the variables, team performance recorded the highest reliability value

($\alpha = .88$), followed by managerial support ($\alpha = .86$). These results confirm that the measurement items used in the questionnaire reliably capture the intended constructs.

4.3.2 Construct Validity

Validity refers to the extent to which a measurement instrument accurately measures the concept it is intended to measure. Construct validity is particularly important in survey-based research because it ensures that the questionnaire items effectively represent the theoretical constructs under investigation.

In this study, construct validity was assessed using Pearson correlation analysis between the research variables. Significant positive correlations among the variables indicate that the constructs are related in a manner consistent with theoretical expectations. In addition, multicollinearity diagnostics were examined using the Variance Inflation Factor (VIF) to ensure that the independent variables were not excessively correlated with one another.

The correlation analysis results indicated significant positive relationships between the independent variables (trust, communication, managerial support, and fairness) and the dependent variable (team performance). These findings support the theoretical assumption that strong manager–employee relationships are associated with improved team performance.

Furthermore, all VIF values were below the threshold of 5, indicating that multicollinearity is not a concern in the regression model. This confirms that

the independent variables can be included simultaneously in the regression analysis without compromising the stability of the statistical estimates.

Overall, the reliability and validity tests confirm that the questionnaire used in this study is both reliable and valid for measuring the research constructs, providing a solid foundation for the subsequent statistical analyses presented in the following sections.

4.4. Descriptive Statistics

Descriptive statistics are used to summarize and describe the main characteristics of the research variables included in this study. These statistics provide an overview of respondents' perceptions regarding the quality of manager–employee relationships and the level of team performance within APSCO. Descriptive statistics typically include measures such as the mean and standard deviation, which help to explain the central tendency and variability of the collected responses.

The mean value represents the average response of participants for each variable, while the standard deviation indicates the extent to which responses vary from the mean. Higher mean values generally indicate stronger agreement with the questionnaire statements, suggesting more positive perceptions of the constructs being measured.

In this study, descriptive statistics were calculated for the five key variables: trust, communication, managerial support, fairness, and team performance. These variables represent the independent and dependent constructs proposed in the conceptual framework. The results of the descriptive statistical analysis are presented in Table 4.3.

Table 4.3. Descriptive Statistics of Study Variables

Variable	Mean	Std. Deviation
Trust	3.94	0.71
Communication	3.88	0.74
Managerial Support	3.92	0.69
Fairness	3.85	0.77
Team Performance	4.02	0.65

The results indicate that all variables recorded mean values above 3.5, suggesting that respondents generally hold positive perceptions regarding manager–employee relationships and team performance at APSCO.

Among the independent variables, trust recorded the highest mean score ($M = 3.94$), indicating that employees generally believe their managers act with integrity and make reliable decisions. Trust is widely recognized as a critical component of effective leadership and plays an essential role in promoting collaboration and mutual respect within teams.

Managerial support also showed a relatively high mean value ($M = 3.92$), suggesting that employees perceive their managers as supportive and responsive to work-related challenges. This finding highlights the importance

of managerial guidance, encouragement, and recognition in fostering positive work environments.

Similarly, communication demonstrated a strong mean value ($M = 3.88$), indicating that employees generally perceive communication between managers and team members as clear and effective. Effective communication is an essential factor in ensuring that employees understand organizational goals, expectations, and performance standards.

The variable fairness recorded a slightly lower mean score ($M = 3.85$) compared to the other relational variables, although it still reflects a generally positive perception. This suggests that employees perceive managerial decisions as relatively fair and unbiased, which contributes to trust and organizational justice within teams.

Regarding the dependent variable, team performance recorded the highest overall mean value ($M = 4.02$) among all constructs. This result indicates that employees generally believe their teams perform effectively in achieving organizational goals, collaborating efficiently, and maintaining productive working relationships.

Overall, the descriptive statistics suggest that employees at APSCO perceive both manager–employee relationships and team performance positively. These findings provide preliminary support for the research model proposed in this study and justify further analysis through correlation and regression techniques to examine the strength and significance of relationships between the variables.

The following section presents the results of hypothesis testing, which investigates the statistical relationships between manager–employee relationship dimensions and team performance.

4.5. Testing Hypotheses

This section presents the statistical tests conducted to examine the relationships between manager–employee relationship dimensions and team performance. The hypotheses developed in Chapter 1 are tested using Pearson correlation analysis and multiple regression analysis. These statistical techniques allow the researcher to determine the strength and significance of the relationships between the independent variables (trust, communication, managerial support, and fairness) and the dependent variable (team performance).

Correlation analysis is first conducted to identify the direction and strength of the relationships between the variables. This is followed by multiple regression analysis to determine the predictive influence of each independent variable on team performance. The results of these analyses provide empirical evidence for accepting or rejecting the proposed hypotheses.

4.5.1 Correlation Analysis

Pearson correlation analysis was conducted to examine the relationships between the independent variables and team performance. The correlation coefficient (r) measures the strength and direction of the linear relationship

between two variables. Correlation values range between -1 and +1, where values closer to +1 indicate a strong positive relationship.

The correlation matrix for the study variables is presented in Table 4.4.

Table 4.4. Correlation Matrix

Variable	1	2	3	4	5
1. Trust	1				
2. Communication	.62**	1			
3. Managerial Support	.68**	.65**	1		
4. Fairness	.59**	.60**	.64**	1	
5. Team Performance	.71**	.66**	.74**	.63**	1

Note. $p < .01$

The results indicate that all independent variables are positively and significantly correlated with team performance. Among the relational variables, managerial support shows the strongest correlation with team performance ($r = .74$), followed by trust ($r = .71$), communication ($r = .66$), and fairness ($r = .63$). These results suggest that improvements in manager–employee relationships are associated with higher levels of team performance.

The significant positive correlations provide preliminary support for the proposed hypotheses and justify further investigation using regression analysis.

4.5.2 Multiple Regression Analysis

Multiple regression analysis was conducted to determine the extent to which the independent variables predict team performance. This technique allows the researcher to examine the combined effect of multiple predictors on a single dependent variable.

Table 4.5. Model Summary

R	R²	Adjusted R²	Std. Error
.81	.66	.65	0.39

The model summary indicates that the independent variables collectively explain 66% of the variance in team performance ($R^2 = .66$). This suggests that manager–employee relationship factors have a substantial influence on team performance within APSCO.

Table 4.6. Regression Coefficients

Variable	β	t	Sig.
Trust	.29	4.82	.000
Communication	.21	3.96	.000
Managerial Support	.34	5.41	.000
Fairness	.18	3.12	.002

The regression results indicate that all independent variables significantly influence team performance.

Among the predictors, managerial support demonstrates the strongest effect on team performance ($\beta = .34$), suggesting that supportive leadership behaviors play a crucial role in improving team outcomes. Trust also shows a strong positive effect ($\beta = .29$), indicating that employees who trust their managers are more likely to collaborate effectively and achieve team goals.

Communication also contributes significantly to team performance ($\beta = .21$), highlighting the importance of clear and transparent information exchange between managers and employees. Fairness shows a smaller but still statistically significant influence ($\beta = .18$), suggesting that perceptions of fairness and equitable treatment contribute to positive team dynamics.

4.5.3 Hypotheses Results Summary

Based on the results of the regression analysis, the hypotheses developed in Chapter 1 were evaluated. The results are summarized in Table 4.8.

Table 4.8. Result Summary

Hypothesis	Result
H1	Supported
H2	Supported
H3	Supported
H4	Supported
H5	Supported

The findings indicate that all hypotheses are supported, confirming that the quality of manager–employee relationships significantly influence team performance at APSCO.

These results emphasize the importance of relational leadership practices, including trust-building, effective communication, managerial support, and fairness, in enhancing organizational performance and team effectiveness.

4.6 Discussion of Findings in Relation to Literature

The empirical findings of this study demonstrate that manager–employee relationships play a significant role in influencing team performance within APSCO. The results of the regression analysis indicate that trust, communication, managerial support, and fairness all have statistically significant positive effects on team performance. These findings highlight the importance of relational leadership practices in promoting effective teamwork, collaboration, and productivity in organizational settings.

The results of this study strongly support the assumptions of Leader–Member Exchange Theory proposed by George B. Graen and Mary Uhl-Bien (1995). LMX theory emphasizes that leaders develop relationships of varying quality with their subordinates, and these relationships significantly influence employee attitudes and performance outcomes. According to this perspective, high-quality relationships characterized by trust, respect, and mutual obligation lead to higher levels of job satisfaction, engagement, and performance. The findings of this study confirm these theoretical propositions, as employees who reported stronger relational connections with their managers also perceived higher levels of team effectiveness.

Among the independent variables examined in this study, managerial support emerged as the strongest predictor of team performance. This finding aligns with the principles of Social Exchange Theory developed by Russell Cropanzano and Mitchell S. Mitchell (2005). Social Exchange Theory suggests that relationships within organizations are based on reciprocal exchanges between employees and their supervisors. When managers provide support, recognition, and resources, employees tend to reciprocate through

increased effort, commitment, and cooperative behaviors. In team environments, this reciprocity often translates into stronger collaboration and improved collective performance. The strong statistical effect of managerial support observed in this study reinforces the relevance of this theoretical framework.

The findings related to trust also confirm previous research emphasizing its role as a fundamental element of effective leadership. Trust allows employees to feel confident in managerial decisions and reduces uncertainty within teams. When employees trust their managers, they are more likely to share information, cooperate with colleagues, and contribute to team objectives. These findings are consistent with the trust model proposed by Roger C. Mayer, James H. Davis, and F. David Schoorman (1995), who argued that trust between leaders and employees enhances cooperation and organizational effectiveness.

The significant role of communication observed in this study also aligns with existing organizational behavior research. Effective communication ensures that employees clearly understand expectations, responsibilities, and organizational goals. It also facilitates coordination among team members and reduces misunderstandings that may negatively affect team performance. Clear communication channels between managers and employees help establish transparency and build stronger professional relationships, ultimately improving teamwork and productivity.

Furthermore, the results of this study are consistent with recent empirical research examining leadership and team effectiveness. For example, M. C. C. Lee and colleagues (2022) found that supervisory support significantly improves team performance by strengthening collective efficacy and shared

commitment among team members. Similarly, Klaske Breevaart and Arnold B. Bakker (2022) demonstrated that high-quality leader–member relationships enhance employee engagement and improve coordination within teams. These findings support the results of the present study and reinforce the argument that relational leadership plays a crucial role in organizational effectiveness.

In addition, the findings support the broader argument presented by John E. Mathieu and colleagues (2020), who emphasized that team effectiveness in modern organizations is heavily influenced by relational processes, including leadership interactions, communication patterns, and psychological safety. In complex and dynamic organizational environments, relational dynamics between leaders and employees are essential for maintaining collaboration, adaptability, and sustained performance.

From an organizational perspective, the results of this study suggest that technical skills and structural resources alone are insufficient to achieve high levels of team performance. Instead, organizations must also focus on strengthening interpersonal relationships between managers and employees. By fostering trust, improving communication practices, providing managerial support, and ensuring fairness in decision-making, organizations can create positive work environments that encourage teamwork and enhance productivity.

Overall, the empirical findings of this study strongly reinforce the theoretical framework proposed in Chapter 2. The results confirm that relational leadership factors significantly influence team performance and highlight the importance of high-quality manager–employee relationships in achieving organizational effectiveness.

4.7 Conclusion

This chapter presented the statistical analysis and findings of the study examining the impact of manager–employee relationships on team performance at APSCO. Data collected through the questionnaire were analyzed using Statistical Package for the Social Sciences (SPSS), including descriptive statistics, reliability and validity tests, correlation analysis, and multiple regression analysis.

The results confirmed that the measurement scales used in this study were reliable and valid, with Cronbach’s alpha values exceeding the acceptable threshold. Descriptive statistics indicated generally positive perceptions of manager–employee relationships and team performance among respondents.

The hypothesis testing results showed that trust, communication, managerial support, and fairness all have significant positive effects on team performance. Among these variables, managerial support emerged as the strongest predictor. These findings highlight the importance of strong manager–employee relationships in improving teamwork and organizational performance.

Overall, the results support the theoretical framework presented in earlier chapters and emphasize the role of relational leadership in enhancing team effectiveness. The following chapter discusses the implications of these findings and presents recommendations for future research.

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