

The Impact of Transformational and Transactional Leadership Styles on Employee Performance: A Quantitative Study in the Information Technology Sector

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Abstract

This factual study explored the association between the two most prevailing leadership styles, transformational and transactional in the field Information Technology (IT). Management often implement these leadership tactics which have impacts on employees' performance and can be considered as the indicator of organizational success. The data were collected from 150 IT professionals from a variety of companies using standardized questionnaires, as part of a quantitative, Ex post facto research design. Self-reported employee performance was assessed using a self-developed, validated scale, while perceptions of leadership styles were assessed using the Multifactor Leadership Questionnaire (MLQ 5X-short). The results indicated that both the leadership styles combinedly variate the performance of employees by 54%. Transformational leadership style proved to be stronger positively related to employees' performance as compared to transactional leadership style. Companies in the fast-paced IT industry may give managers' transformational leadership skills top priority in order to boost worker productivity, engagement, and creativity. By offering quantifiable data unique to the industry to direct leadership development initiatives, this study adds to the body of information already in existence.

Keywords: *Leadership styles, Transformational leadership, Transactional leadership, Employee performance.*

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Introduction

Organizations are always searching for a sustainable competitive edge in the current, fiercely competitive global market. Employee performance is a direct predictor of organizational success and innovation, and while strategy and technology are important, human capital is still one of the most important resources (Armstrong & Taylor, 2020). The igniting factor to this human capital is effective leadership that prompts, motivates, and directs human capital. Consequently, one of the key topics of interest among management literature is how to determine the most appropriate leadership ideologies to release employee potential.

In this study, the information technology (IT) sector provides a very productive and stakes high environment. The IT industry also needs leadership that is not only able to coordinate actions but also keep up with the speed of technical obsolescence, project-oriented nature, and highly skilled workforce who often move about. It requires leaders that are capable of retaining the best talents in an international market and are able to withstand turbulence and foster continuous innovation. This is more so true in the developing countries such as Pakistan where the IT industry is leading the exports and economic growth.

The Pakistani IT companies compete intensely with their counterparts in other countries, not only with the clients but with qualified employees who are prone to brain drain. There is increasing agreement that in this case, the conventional top-down, command-and-control management methods are inadequate. They often inhibit the freedom and creativity that IT employees value and this can lead to high turnover as well as disengagement. Instead, contemporary thought indicates the need to have flexible and enabling leadership. Nevertheless, the systematic clarity of transactional leadership can still be applied in accomplishing key project deadlines and ensuring quality performance in the absence of contemporary transformational methods.

So here comes a critical dilemma to the IT companies, particularly in Pakistani context; should they focus more on nurturing leader, who inspires and transforms or organizes and rewards so as to get a higher performance out of the staff? In the context of this study, this paper will attempt to provide factual quantitative data peculiar to the evolving conditions of the IT field beyond general leadership concepts.

Problem Statement

Organizations spend a lot of money on leadership development, but there isn't enough solid, sector-specific data to determine whether

transformational or transactional leadership improves worker performance in the IT sector. In order to close this gap, this study compares the effects of both strategies in this particular, demanding business experimentally.

Research Objectives

The objectives of the study were to:

- Examine the relationship between transformational leadership style and employee performance.
- Examine the relationship between transactional leadership style and employee performance.
- Determine which leadership style (transformational or transactional) is a stronger predictor of employee performance in the IT sector.

Hypotheses of the Study

Based on the literature, the following hypotheses were proposed:

H1: There is a significant positive relationship between transformational leadership and employee performance.

H2: There is a significant positive relationship between transactional leadership and employee performance.

H3: Transformational leadership is also a better predictor of employee performance as compared to transactional leadership.

Literature Review

Theoretical Frameworks

This research is based on the Full Range Leadership Model (FRLM). The advantage of the FRLM lies in the fact that it follows a continuum-based approach, which allows viewing how both chief active leadership philosophies, transformational and transactional, coexist and have a distinct influence on performance outcomes in a complex environment like the IT industry (Bass and Avolio, 1994). This structure is more useful in taking a critical look at the prevailing clash between the transactional and inspirational leadership paradigms in modern management.

Transformational Leadership: Effectiveness and Complex Reaction in Contemporary work Environment

Recent meta-analytic studies carried across the globe reveal a strong positive correlation of transformational leadership and performance

measures in the knowledge-intensive sectors. However, the discourse has gone past the extent of determining this relationship to the understanding of its constraints and dynamics. A study by Lee (2020) has shown that transformational leadership enhances performance in technology firms primarily through the establishment of a psychologically safe environment that encourages risk-taking and mistake-learning, both of which are invaluable to innovation. However, there is a vital counter-narrative that is beginning to emerge. One potential dark side was discovered in a longitudinal study in the software market by Özer and Tint (2023): transformative leadership with excessive pressure on employees to perform was found to cause greater emotional weariness in employees. It means that the aggressive quest of the extraordinary results may be more or less a two-sided sword, which in the absence of the adequate support may lead to the burnout which is one of the keys to the demanding world of IT. Khan, Rehmat, and Butt (2021) demonstrated that transformational leaders have a direct positive effect on the performance of the specific environment of software development teams by promoting intellectual stimulation and reducing turnover intentions. Their results indicate that intellectual stimulation is a very important motivator to the IT workers who are often intrinsically motivated by difficult problems. This is further upheld by a study performed in Pakistani IT firms by Abbas and Saud (2020), who discovered that employee engagement served as an intermediary among transformational leadership and innovative work behavior as one of the vital performance indicators in the industry. The findings highlight the great mediating variables with a special emphasis on the Pakistan context. A study by Shafi et al. (2020) on IT companies in Rawalpindi and Islamabad has found that intrinsic motivation contributed significantly to the positive influence of transformational leadership on employee performance. This implies that the inspirational behavior of a leader should be able to fully harness the intrinsic drive of the employees in a way that is fully functional. Similarly, as Khan, Rehmat, and Butt (2021) remarked, the most significant factor toward the Pakistani software companies in keeping the best and propelling the innovative production was intellectual stimulation rather than romanticized influence.

Transactional Leadership: A Critical Re-evaluation and Situational Need. The story about transactional leadership has undergone major alterations. Contingent Reward component has been defensively reinstated in modern research. A set of clear goals and reliable incentive systems still remain a powerful predictor of task-performance to provide the necessary framework under ambiguous project circumstances, a study by Breevaart

and Zacher (2019) has argued. This is particularly relevant to the IT industry in emerging economies such as Pakistan where codified procedures are in their early stages of formation. The important difference is the Management-by-Exception (MBE) sub-dimensions. Active MBE (proactive monitoring and fixing) has been proved a number of times to be applicable in maintaining quality standards, even in code review processes (Fiaz, Su, and Saqib, 2019). Passive MBE that waits to find out the problems first before acting on them, on the other hand, is almost always linked to undesirable outcomes, including lower levels of creativity and more turnover intentions (Abbas and Saud, 2020). This advanced view is used to support the reasonable use of the elements of transactional leadership instead of its outright denial. Despite all the arguments in favor of the effectiveness of transformational leadership as the most efficient approach in promoting creativity and involvement in the IT sector, certain disadvantages cannot be overlooked, as employees may grow tired of the system. Simultaneously, transactional leadership, in particular, its Contingent Reward element, has been recognized as a versatile strategy that ensures the attainment of goals as well as the stability of operations. A straightforward, scientific comparison in the unique IT environment in Pakistan a sector characterized by expedited growth, intense international rivalry and a young, dreamy workforce is urgently required, despite the fact that the personal impact of these methods are under investigation. In order to inform successful efforts in leadership development and organization planning in this critical economic sector, quantitative explanation of the relative power of different leadership styles in predicting the multifaceted performance of Pakistani IT employees is required.

Methodology

Research Design

A quantitative, Ex post facto, non-experimental research approach was used in this study. Without using any modification or intervention, this approach is suitable for analyzing the kind and strength of connections between variables (Creswell & Creswell, 2018). Numerical data from a sample of IT workers was gathered at one point in time using a cross-sectional survey approach. The data were then statistically analyzed to evaluate the hypotheses.

IT specialists employed by different Pakistani firms, such as software developers, engineers, systems analysts, and project managers, were the study's target audience. Participants were recruited using a non-probability, convenience sampling method. There were 150 responders in

the final sample. A sample size of 150 is suitable for performing correlation and multiple regression studies since it offers enough statistical power to identify significant associations, according to Hair et al. (2010).

Instrumentation

Data were collected using a self-administered online questionnaire with three sections:

Section A: Demographic Information. Collected data on age, gender, education, and job tenure.

Section B: Multifactor Leadership Questionnaire (MLQ 5X-Short). This 18-item scale, developed by Bass and Avolio (1995), is a well-validated and reliable instrument. It uses a 5-point Likert scale (0=Not at all, 4=frequently, if not always) to measure:

- Transformational Leadership (12 items)
- Transactional Leadership (6 items for Contingent Reward & Active MBE) Participants rated their immediate supervisor.

Section C: Employee Performance Scale. A 10-item self-report scale was developed based on established performance dimensions (e.g., "I consistently meet my project deadlines," "The quality of my work is high"). It was a 5-point Likert scale (1=Strongly Disagree, 5=Strongly Agree). It piloted this scale to good reliability (Cronbachs Alpha > 0.80).

This newly developed scale was subjected to a two-step process that ensured its validity and reliability.

Content validity

The initial set of the items was tested by three professionals who were experts in the field of organizational psychology and human resource management. They checked the relevancy, clarity, and comprehensiveness of the items. To better understand and ensure that the scale reflected the best concept of employee performance in the IT environment, some of the questions were paraphrased with respect to their feedback.

Pilot Testing and Reliability

Thirty IT professionals not involved in the main study took part in a pilot

test of the new scale. The data of the pilot test were analyzed using SPSS. Cronbach alpha coefficient of 0.89 showed excellent internal consistency of the results and this indicates that the scale was reliable and could be used in the primary data collection.

Data Analysis

The questionnaire was sent online through Google Forms. A cover letter guaranteed anonymity and confidentiality to the respondents. It was a data collection of four weeks. The response rate was 83.3, which was achieved by filling out 180 distributed questionnaires out of 150 forms received and sent. Plan data gathered was compared in the SPSS software (Version 28). Calculation of means and standard deviations was done on all variables. To test hypothesis H1 and H2 by considering the direction and strength of the relationships among the variables Pearson correlation test was used and regression analysis was used to test hypothesis H3 and establish the predictive ability of each independent variable (leadership styles) to the dependent variable (employee performance).

Ethical Considerations

Strict ethical guidelines were followed in this investigation. The University of Sargodha's Departmental Research Ethics Committee granted ethical permission prior to data collection. A thorough informed consent form was presented on the first page of the online survey. Before moving on to the questionnaire, participants had to attest that they had read and comprehended the material and that they would willingly agree to participate.

It was made clear that participation in the study was fully voluntary, and that participants might withdraw at any moment without explanation or penalties. There was no collection of personally identifiable data. The data was stored on a password-protected computer that only the study team could access. All results are provided in an aggregate manner to ensure that no individual may be identified. The questionnaire was designed to be non-invasive in order to prevent any psychological suffering.

Results

Descriptive Statistics and Reliability

Table 1: Demographic Profile of Respondents (N=150)

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	96	64.0
	Female	54	36.0
Age	20-30	68	45.3
	31-40	62	41.3
	41+	20	13.4
	Bachelor's Degree	105	70.0
Education	Master's Degree/Higher	45	30.0
	1-3 years	45	30.0
Job Tenure	3-5 years	75	50.0
	5+ years	30	20.0

Table 1 presents the demographic features of the 150 participants in the research study. The sample was primarily male (64%). Maximum respondents (86.6%) come within 20 to 40-years of age bracket that reflects youth and energetic manpower model of the IT sector.

The academic profile was elevated, with 70% of respondents having at least a bachelor's degree, combining with the top academic needs of the field. An important part of the sample (50%) had 3 to 5 years of job duration, indicates that most participants of the study had high experience and they were well- educated with their current work atmosphere and leadership.

Table 2: Mean, Standard Deviation, and Reliability of Variables

Variables	No. of Items	Mean (M)	SD	Cronbach's Alpha
Transformational Leadership	12	3.45	0.78	0.91
Transactional Leadership	6	2.88	0.82	0.79
Employee Performance	10	3.92	0.69	0.87

Note: Scales ranged from 0-4 for MLQ and 1-5 for performance.

Table 2 indicates the descriptive quantity (mean and standard deviation) and reliability multiplier (Cronbach's Alpha) for the leading factors of study. The average points for Transformational Leadership ($M=3.45$, $SD=0.78$) was elevated than that for Transactional Leadership ($M=2.88$, $SD=0.82$), which provides an early sign that participants think their leaders should adopt transformational attitude more often. The average score for Employee

Performance ($M=3.92$, $SD=0.69$) was high from the scale's middle point (3), it suggests that, on average, respondents showed a high level of efficiency. Cronbach's Alpha values for all Scales were above the allowable doorstep of 0.70, which confirms that the instruments they have used for measurement were highly authentic and reveals splendid internal reliability.

Table 3: Pearson Correlation Matrix of Variables

Variables	1	2	3
Transformational Leadership	1		
Transactional Leadership	.412**	1	
Employee Performance	.720**	.345**	1

* $p < 0.01$ (2-tailed)

Table 3 confers the mutual relationship between the study variables using Pearson's correlation coefficient. The results of the study indicate a powerful, constructive, and statistically important association among Transformational Leadership and Employee Performance ($r = 0.72$, $p < 0.01$). This shows that the transformational leadership attitude increase performance of employees.

A modest, constructive, and statistically important link was also found among Employees' performance and Transactional Leadership. ($r = 0.35$, $p < 0.01$), which suggests that this leadership style have also positive connection with performance, though to a comparatively lower degree.

Furthermore, an important constructive correlation exists among the two leadership styles themselves ($r = 0.41$, $p < 0.01$), it implies that leaders frequently employ a mixture of both the leadership behaviors called transformational and transactional. One style itself is not considered sufficient according to study results.

Table 4: Summary of Multiple Regression Analysis for Variables Predicting Employee Performance

Predictor Variables	Unstandardized Coefficient (B)	Standard Error	Standardized Coefficient (B)	t-value	p-value
(Constant)	1.12	0.24		4.67	<.001
Transformational Leadership	0.58	0.06	0.65	9.67	<.001
Transactional Leadership	0.17	0.05	0.20	3.40	<.05

Model Summary: $R^2 = .54$, Adjusted $R^2 = .53$, $F(2, 147) = 85.22$, $p < .001$

Table 4 sums up the results of the quality of different regression analysis conducted to estimate Employee Performance from the two above-mentioned leadership styles. The regression model was statistically important, $F(2, 147) = 85.22$, $p < .001$, and detailed 54% of the variance in Employee Performance ($R^2 = .54$). This indicates that the combination of Transformational and Transactional leadership styles is a strong predictor of employee performance.

An examination of the individual predictors shows that:

- Transformational Leadership ($\beta = 0.65$, $p < .001$) made a larger unique, statistically significant contribution to predicting performance. The positive beta value indicates that for everyone standard deviation increase in transformational leadership, employee performance increases by 0.65 standard deviations, holding all other variables constant.
- Transactional Leadership ($\beta = 0.20$, $p < .05$) also made a significant, but comparatively smaller, unique contribution to the prediction of performance.

These results confirm that while both leadership styles are valuable, Transformational Leadership is a far stronger and more dominant predictor of Employee Performance in the IT sector.

Discussion

As a study conducted in global tech companies by Lee et al. (2021), the transformational leadership style enhanced the employee performance by dealing with their psychological stipulations, which ultimately increased their creativity level and enhance the skill of problem solving which is necessary to live in IT industry. Our work from Pakistan prop up this international trend, by showing that the motivating strategies that

transformational leadership opt are successful in diverse cultural point of view, particularly in professions which have value, knowledge and innovation.

Transactional leadership has important but feeble connection ($\beta = 0.20$) indicates its work as an important procedure rather than a stimulating one. The clarity shown by Contingent Reward is necessary for developing basic dependence and achievement of functional objectives. Pakistani scenario of development in IT sector, where different professions are growing their activity management plans.

The finding of regression analysis, however, shows that its efficiency to develop higher-ranked activity reduced after this basic framework is developed. This advances acceptance to the Substitution for Leadership Theory (Kerr & Jermier, 1978), which discussed that the impact of leader is not always important. Extrinsic motives may be considered more powerful indicators of transactional leadership than the intrinsic motives for most qualified IT professionals. According to Nauman et al. (2022), an over dependence on transactional agreements in work-knowledge conditions might even choke internal motivation, which elaborates its reduced capability to predict the innovation and non-compulsory attempt that specify top performance.

The results strongly proved that transformational leadership is considered as more effective and active style of leadership when talking about high performance for achievement of goals in IT industry among full range of leadership models. The work shows that in fast speed T sector working in Pakistan, the leadership that basically organizes and rewards (transactional) is considered less effective than the leadership that authorizes and motivates (transformational).

The study indicates the specific challenges of directing knowledge-based personnel and put doubt on the practicality of more dictatorial, hierarchical leadership strategies that are still not common in other local professions.

The well-built, pragmatic relationship between the transmuting leadership and the performance of employees. ($r = 0.72$, $p < 0.01$) which is ordered connected with the already internationally available literature about leadership (Bass & Riggio, 2006; Judge & Piccolo, 2004). Specifically in Pakistan's view of IT industry advised that the leader who has a captivating vision, seems more ethical who ideally influences others.

This type of leader arouses curiosity among subordinates and provides individualized support to employees that have direct, remarkable effect on their potential. This leadership style developed an atmosphere of respect, confidence, creativity and arouse internal motivation, which is necessary to deal with the difficult, activity based and quickly change nature of IT work.

The accurately important, but comparatively productive, association for transactional leadership ($r = 0.35$, $p < 0.01$) shows that this style of leadership is more applicable. The transparent formation, explicit goals, fortuitous rewards, and the characteristics of transactional leadership gives fundamental base for solidity, and it ensure that short-term objectives are achieved. This result may differ that transactional leadership is completely

outdated, especially when we talk about Pakistani IT market which is in growing condition where the clarity in procedures is required for efficiency. However, its weaker relationship considered it inadequate to work alone to drive voluntary effort, innovation and to engage for longer term to meet the challenges of innovation.

The retrogression analysis ($\beta = 0.65$ for transformational vs. $\beta = 0.20$ for transactional) harden this explanation. Keeping in view the performance of employees, transformational leadership is not only related to it but also a prominent divider for plenty of detailed variance (54%) present in the model.

Recommendations

The recommendations of the study were as follows:

1. When independent and dependent variables are measured using the same questionnaire, there is a chance that correlations will be falsely exaggerated because of the measurement technique rather than the underlying structures. Future research may include multi-source data, such as comparing employee self-reports of leadership with supervisor performance evaluations or objective measures like lines of code, project completion rates, or invention patents, even while procedural remedies were implemented (e.g., assuring anonymity).
2. Since this study is correlational, causation cannot be deduced. A third element, such a good company culture, may have an impact on both leadership behavior and performance, or high-performing teams may lead their leaders to adopt a more transformative approach. To determine causal direction and comprehend the long-term impacts of various leadership styles on performance trajectories, longitudinal or experimental methods are required.
3. Effective leadership frequently involves a combination of actions, but this study focused only on leadership styles. Future studies could use qualitative techniques, including in-depth interviews or ethnography, to investigate how Pakistani IT executives effectively blend transactional and transformational strategies in their day-to-day interactions and how this hybrid approach affects team relationships.
4. 54% of the performance variance was explained by the model, indicating that other factors account for 46% of the variance. Mediating and moderating variables should be included in future research. Transformational leadership style affects performance of employees in different ways for instance nonphysical safety for the group or to build up confidence in the leader. The question is that the potency of transformational leadership depends upon the size of the group or on the personality of the employees that include willingness to welcome new experiences?

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