DOI: https://doi.org/10.71317/kjard.2.8.2026.312
The Kashmir Journal of Academic Research and Development
Journal homepage: https://rjsaonline.org/index.php/KJARD

# Strategic Leadership for Adaptive Performance: The Roles of Learning Culture, Psychological Safety, and Self-Leadership

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**ARTICLE INFO**

**Received:**
June 20, 2026
**Revised:**
July 03, 2026
**Accepted:**
July 18, 2026
**Available Online:**
August 02, 2026

**Keywords:**
Paradoxical leadership; Learning culture; Psychological safety; Self-leadership; Adaptive performance

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**ABSTRACT**

The study investigated the effect of paradoxical leadership and learning culture on adaptive performance with psychological safety as a moderating variable and the moderating role of self-leadership. The model was tested based on paradox theory and social cognitive theory, with the techniques of PLS-SEM. It was found that the effects of paradoxical leadership and learning culture on psychological safety and adaptive performance were significant. The relationships were mediated by psychological safety, which was established as a central explaining factor. The relationship between psychological safety and adaptive performance was positively moderated by self-leadership, suggesting that those employees who have higher self-regulation could turn psychological safety into adaptive performance better. The model proved reliable, valid, explanatory and predictive. The results from this study continue the body of knowledge on leadership and learning and provide insights into how to enhance adaptability in knowledge-intensive service industries which have to deal with uncertainty and rapid change.

## Introduction

Organizations faced rapidly evolving customer expectations, economic instability, greater competition and frequent shifts in work processes, as well as technological disruptions. These conditions redirected managers' focus from traditional task performance to adaptive performance, defined as employees' ability to adjust their performance, acquire new techniques, handle uncertainty effectively, and maintain productivity when required tasks change. Adaptive performance was particularly relevant in emerging economies where the organizations were often faced with institutional uncertainty, scarcity of resources, and markets that were changing quickly. In Pakistan, simultaneous demands were placed on banking, telecommunication, software and other knowledge-intensive service firms to implement digital systems, to keep their operations efficient, to limit costs and to meet the new expectations of employees. A study on the software industry in Pakistan revealed that technical skills were not the only factor influencing adaptive performance; it also recognized that enabling team and leadership environments for employees to balance competing demands and flexibilities also play a role in adaptive performance (Ejaz et al., 2024).

In this context, paradoxical leadership became a more and more pertinent management model. Controlling and autonomous, consistent and individual, distant and near, disciplined and flexible—these are some of the paradoxical leadership traits that paradoxical leaders combine in a way that enables them to handle competing but interdependent demands. These leaders did not take sides in a managerial conflict; instead, they had a "both-and" approach that allowed workers to deal with the complexities. Recent reviews found that paradoxical leadership has emerged as an important stream in the field of organizational behavior because contemporary organizations were faced with conflicting demands on an ongoing basis. The paradoxical leadership effects, however, were not necessarily positive; for workers, the paradoxical behaviors of their leaders could be seen as either supportive flexibility or managerial inconsistency (Batool et al., 2023).

A second organizational resource, learning culture, could be used to enhance adaptive performance. Knowledge sharing, experimentation, constructive feedback, reflection on errors and continuous development of employee capability were promoted in a good learning culture. In organizations in Pakistan, the introduction of technology and service innovation, along with the development of the workforce, necessitated employees to constantly update their skills and knowledge, making such a cultural atmosphere especially valuable. Empirical studies showed that learning culture directly and indirectly contributed to increased adaptive performance and for employees to gain confidence to deal with change and uncertainty (Budhiraja & Rathi, 2022). Other evidence from the service sector also showed that learning culture had a positive impact on the increased engagement of employees and improved performance results, as learning was carried out as part of the daily activities of the organization (Biswakarma & Subedi, 2025).

However, adaptive performance was not achieved from leadership and learning systems unless employees felt psychologically safe at work. Psychological safety was defined as employees' perceptions that they are safe to ask questions, own up to mistakes, disagree with the status quo, or propose ideas without embarrassment, reprimand or rejection from others. New research further confirmed psychological safety as a key process linking leadership to employee performance, wellbeing, voice, and innovation. This mechanism would be especially significant in hierarchical organizational settings, where workers may not want to challenge their supervisors or report problems. The study identified a link between leadership behavior and subsequent psychological safety, with psychological safety also having a positive impact on employee performance and other work outcomes, as revealed by time-lagged evidence.

The framework thus suggested that leadership and learning culture with paradoxical attributes facilitated adaptive performance via psychological safety. It also suggested that self-leadership was a boundary condition that would help predict whether psychological safety would lead to adaptive action or not. Self-leadership was defined as the capacity for employees to self-manage their cognition, motivation and behavior by setting goals, self-monitoring, using positive thoughts and self-rewards. Self-leadership has been shown to be a more effective means for employees to translate their greater freedom and interpersonal security in the workplace into directed adaptive action. The link between self-leadership and adaptive performance in organizational crises has been mentioned in previous studies on the topic, and recent studies maintained that self-leadership is an important ability in human-resource-development (HRD) during a crisis (Marques-Quinteiro et al., 2019; Kim, 2024). The present research thus filled a gap and focused on leadership, along with culture, psychological climate and individual self-regulation in a moderated mediation framework in the context of Pakistan.

**Theoretical Underpinning**

The basic concepts of paradox theory and social cognitive theory were used in the proposed framework. Paradox theory was developed to describe the reactions to conflictual but interrelated demands that were required over time from individuals and groups. Paradox theory implied that the problem with effective management is not to solve the tension problem but rather to accept and/or balance the different requirements over time continually. This is a contradiction inherent to perceived leadership practice: leaders reported having control and autonomy over employees in their organization, standardizing and being flexible toward their employees, managing and being close to their employees. The initial definition of paradoxical leader behavior was set in the context of five complementary dimensions of managerial responses to structural and employee-related paradoxes ( Zhang et al., 2015). There are also concerns that the theory of paradoxical leadership could have a double-edged effect: The followers' understanding of contradictory behaviors may lead to flexibility or confusion (Batool et al., 2023).

The first part of the framework was found to be a result of the 'paradox theory' that assumes that contradictory leadership gave employees the opportunity to make a 'broader' interpretation of the demands placed on them. The Pakistani workers in Banking – Software and Telecommunications had to be compliant, innovative, rules and regulations-abiding, customer-centric, and responsive to new problems. However, a paradoxical leadership could equally help to keep the complex

expectations cognitively manageable through setting limits and providing scope for discretion. The results of experimental research and multi-wave research in recent years validated the positive relationship between paradoxical leadership and adaptive performance, because paradoxical leadership is conducive to the development of employees' paradoxical thinking and participation in role-related paradoxes (Tan et al., 2024).

Social cognitive theory was used to translate the contextual signals into employee cognition and behavior in tandem with the paradox theory. Staff had the opportunity to learn what is appropriate in the workplace through observation, understanding social cues, and assessing the potential benefits and/or risks in certain situations. Constructive leaders who encountered errors, different perceptions, and the unknown with a positive attitude communicated that it's okay to take risks with each other and experiment. Similarly, there were repeated reminders (social and organizational signals) that questioning practice and sharing knowledge and learning from failure were an accepted norm in a learning culture. Employees who were exposed to these kinds of signals were expected to feel more comfortable doing so in the future, given the expectation that such signals would not cause them trouble. Psychological safety was a direct mediator between PLE and proactive innovation-related behavior as it was first demonstrated through research (Yang et al., 2025).

The social cognitive theory was also used to explain the role of self-leadership as a moderator. The ability of employees' self-regulation is not independent from the external conditions of an organization; it determines behavior. Self-leaders set their personal targets, kept themselves on track with their own behavior, had positive self-talk and used encouraging self-talk and strategies to help them persist. Psychological safety – social license to act, self-leadership – internal capacity to act adaptively. Staff may be comfortable with suggesting another method of doing something, but not be engaged in behaviors of self-directed goals and monitoring. In contrast, self-led employees have more capabilities in using P.S. as an instrument for experimentation, learning and adaptation. Self-leadership was shown to improve adaptive performance in organizational crises when it helped to promote employees' proactive management of the crises and the maintenance of purposeful behavior (Marques-Quinteiro et al., 2019).

Combining both theories thus resulted in a cross-level adaptive performance explanation. The paradox theory explained how leadership handled the competing organizational demands and the social cognitive theory explained how leadership and culture influenced psychological safety, and how self-regulation influenced the subsequent behavior. Psychological safety was the psychological mechanism involved in mediating the cognitive-affective mechanism and self-leadership was the psychological mechanism involved in mediating between psychological safety and adaptive performance. This was particularly relevant in Pakistan where the work environment was hierarchical and could potentially result in interpersonal risk, while the environment was uncertain and required flexibility, initiative and learning.

**Hypotheses Development**

**Paradoxical Leadership and Psychological Safety**

Paradoxical leaders indicated that their competing expectations did not have to be mutually exclusive for employees. These leaders, who structured with control and autonomy, set performance limits and let employees choose methods. They developed interpersonal closeness without sacrificing authority, which helped them to eliminate the interpersonal gap that sometimes hindered employees from articulating concerns. This was behaviour that was expected to engender an environment in which employees would be able to make mistakes, raise questions about procedures, and try things out without fear that what they did was interpreted as disobedience. Psychological safety thus arose when employees felt a mix of challenge and encouragement from their managers.

The hierarchical norm and emphasis on relational harmony could be an important aspect, particularly in Pakistan, where workers may not feel free to express their disagreement directly with their supervisor. This is where paradoxical leadership can help tame this ambivalence by maintaining the legitimacy of the leader's power and at the same time being open and flexible. Recent evidence suggested that paradoxical leadership fostered psychological safety and that being psychologically safe had a cascading effect on innovative employee behaviour. It was more pronounced when employees felt the leader was trustworthy (Yang et al., 2025), suggesting that followers' understanding of contradictory actions plays a role.

**H1: Paradoxical leadership will have a positive effect on psychological safety.**

**Learning Culture and Psychological Safety**

A learning culture was established, and it was expected that staff would learn new skills, share issues, review failed actions and enhance current practices. By rewarding errors with analysis instead of reprimands, staff members were more willing to admit problems and ask for help. Continuous learning also normalised uncertainty, as uncertainty was recognised as a starting point for collective improvement rather than a personal failing. Learning culture thus made it easier to "perceive" a lower social cost in asking questions or challenging existing practices.

Organizational policies, supervisors and peers consistently fostering learning are likely to increase psychological safety. But if employees feared that admitting ignorance might hurt their careers, this wouldn't be enough. A genuine learning culture integrated the following: rewards, communication, feedback, managerial responses and continuous development. Qualitative studies in recent years showed that staff who believed the school had a great learning culture were more likely to feel comfortable challenging leaders with new ideas and to take intellectual risks (Clarke et al., 2025). This relationship can be especially impactful in the knowledge-oriented service sectors of Pakistan, where staff members were encountering novel digital platforms, fluctuating customer demands, and ever-adapting compliance protocols.

**H2: Learning culture will have a positive effect on psychological safety.**

**Psychological Safety and Adaptive Performance**

Adaptive performance was where workers recognized that what they knew or did would not be enough. In situations that employees faced for which they didn't have information, they had to try new things, ask for feedback, and coordinate with others. All of the behaviours involved interpersonal risk. Staff who believed that they were at risk of being blamed or embarrassed for making mistakes were likely to hide errors or wait for specific instructions – or to use ineffective routines. Psychologically safe workers, on the other hand, might respond to uncertainty in an open way, through learning and constructive problem solving.

Psychological safety not only created comfort, it also allowed disciplined learning and action. The core evidence indicated that psychological safety led to learning behaviour between members of a work team, and a recent review indicated that psychological safety correlated with performance, empowerment and adaptation within the workplace (Edmondson, 1999; Edmondson & Bransby, 2023). In high-demand hierarchical contexts, researchers also identified that psychological safety as a form of leadership effected self-reported performance and wellbeing (Clarke et al., 2025). In Pakistan, psychological safety might allow staff to report issues, like service failures, technological problems, and shifting customer requirements, before they become serious.

**H3: Psychological safety will have a positive effect on adaptive performance.**

**Paradoxical Leadership and Adaptive Performance**

**Mediating Role of Psychological Safety**

Paradoxical leadership could give them some flexibility, and a learning culture could give them a learning resource, but they may not utilize that resource with interpersonal risks still high. Psychological safety captured the meaning of psychological safety for the employees in terms of leadership and culture. Paradoxical leaders set boundaries of behaviour that were safe by modelling disciplined performance and employee autonomy. This made it easier to know that they could stand out as a voice of reason, try something new or put forward an alternative idea and it would be understood. Psychological safety then facilitated employees to exercise discretion granted through paradoxical leadership.

The same process was put into place for the learning culture. If employees felt they would be exposed as lacking in skills, they might not be able to achieve deeper learning by attending training or seeking organizational knowledge. If learning culture resulted in psychological safety, then employees were more likely to share what they didn't know, ask for feedback and challenge assumptions. These behaviours reinforced their ability to meet unexpected challenges. Recently, psychological safety was found to link with leadership, with positive impacts on innovation and voice, as well as on performance and wellbeing, whilst for Pakistan, psychological and team conditions were found to matter for adaptive performance (Yang et al., 2025; Clarke et al., 2025; Ejaz et al., 2024).

**H4: Psychological safety will mediate the positive relationship between paradoxical leadership and adaptive performance.**

**H5: Psychological safety will mediate the positive relationship between learning culture and adaptive performance.**

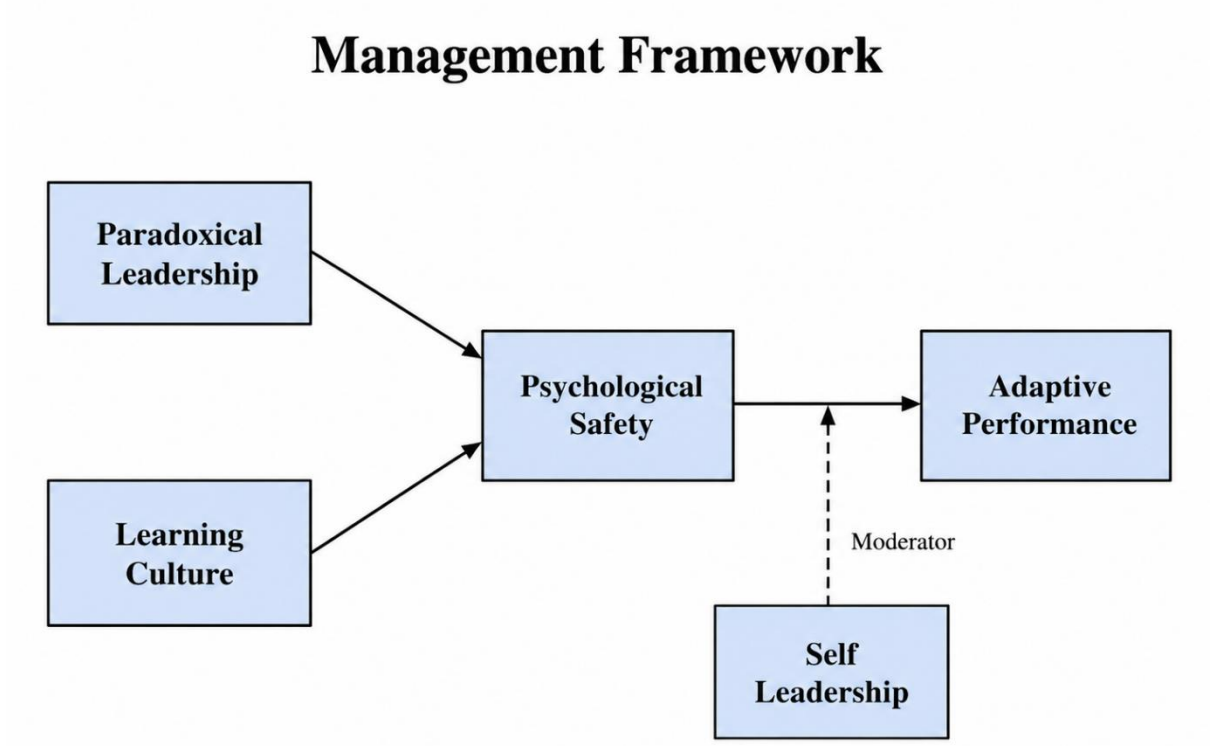
**Moderating Role of Self-Leadership**

Employees had different abilities to take advantage of the opportunity for adaptive behaviour that was created through psychological safety. The self-leadership consisted of behaviour-focused strategies, natural reward strategies and constructive thought-pattern strategies. Staff who demonstrated good self-leadership set ambitious targets, monitored their own progress, recognised when something wasn't working and encouraged themselves to persevere when times were uncertain. Thus, in conditions of high psychological safety, employees were more inclined to take the initiative in learning, explore alternatives and adjust their behaviour without receiving thorough instructions from supervisors.

The psychological safety for employees with low SELF LEADERSHIP may not be accompanied by adaptive performance due to a lack of self-direction, persistence or self-behaviour monitoring. Employees with high self-leadership, on the other hand, were able to integrate personal agency and interpersonal security. The studies conducted demonstrated a positive relationship between self-leadership and adaptivity during crisis situations in the organization, while a recent systematic review and meta-analysis revealed that leadership and self-regulatory processes were significant precursors of adaptivity (Marques-Quinteiro et al., 2019). Further evidence was also found to link self-leadership to adaptive performance in proactive and motivational ways.

Self-leadership may play a significant role in Pakistan as workers can be provided with psychological support without them having to leave the organizational structures. Their self-leadership would allow them to be responsible agents who would not transgress organizational boundaries by taking initiatives. The impact of psychological safety on adaptability ought to grow in strength at higher levels of self-leadership. Self-leadership was found to be moderating the second part of the mediation process; hence, such an outcome would also boost the indirect pathway of paradoxical leadership and learning culture to adaptive performance via psychological safety.

**H6: Self-leadership will positively moderate the relationship between psychological safety and adaptive performance, such that the relationship will be stronger when self-leadership is high.**



## Methodology

### Research Design

The proposed study will utilize a quantitative, explanatory and time-lagged research design. A quantitative approach would allow for the simultaneous analysis of direct, mediating, moderating and conditional indirect effects of the five latent variables. A three-wave design is recommended to minimize common method issues and maximize temporal separation between the predictors, mediator and outcome. At TIME 1, employees would report on paradoxical leadership, learning culture and demographic characteristics. About three weeks later, at Time 2, the same workers would express feelings of psychological safety and self-leadership. After three weeks, at Time 3, immediate supervisors would evaluate their employees' adaptive performance. Recent research in the fields of leadership and psychological safety and adaptive performance (Clarke et al., 2025; Ejaz et al., 2024; Tan et al., 2024) has utilized similar time-lagged and multi-source designs.

The research would be deductive since the hypotheses are based on the theories of Paradox theory and social cognitive theory. The unit of analysis would be the individual employee, but the employees would be nested within sector and within organization. The study would examine real-world conditions of organizations, not artificially created ones, nor those that change the day-to-day leadership or culture. The sector and organization identifiers would thus be kept to explore clustering and unobserved heterogeneities.

### Population, Sample Size and Sampling Framework

The target population would include all the full-time employees of knowledge-intensive service sector organisations, especially commercial banks, telecommunication companies, software or information-technology organisations in Pakistan. These sectors were chosen as there was frequent change due to digital transformation, pressure from customers, procedural control, and changing knowledge requirements for employees. To support this finding, the relevance of leadership and team processes and adaptive performance in software organizations had been previously established by research in Pakistan (Ejaz et al., 2024; Maqsoom et al., 2025), making these areas a suitable setting to provide contextual evidence for this study.

Data would be collected from organizations in Karachi, Lahore and the Islamabad–Rawalpindi area as there were significant concentrations of employment in the banking, telecommunications and technology sectors in these cities. The sampling frame would consist of sector directories and lists of employees from human-resource departments of participating organizations made available through public access outlets. A multistage stratified sampling procedure would be followed. First, organisations would be segmented by sector. Secondly, the participating organizations in each sector would be chosen. Thirdly, staff members who have worked for the organization for six months or more and have a clearly defined immediate supervisor would be taken from available HR lists at random. To avoid having one sector dominating the sample, the weights of the sectors would be determined proportionately.

The number of observations was determined a priori using five predictors, a medium effect size (0.15) and a level of significance (0.05) and statistical power (0.95), which resulted in a minimum sample of about 138 observations. It would, however, be too liberal for a complex moderated mediation model, higher-order constructs, data screening, and sectoral comparisons, not to mention the possibility of attrition across the three waves of the survey. The study would then seek responses from a minimum of 400 complete employee–supervisor matched responses. At Time 1, about 600 employee questionnaires would be sent out, so that there is a chance that some employees would not return the questionnaires and some employees would return questionnaires twice. The larger sample would enhance statistical power and estimate stability and the assessment of measurement invariance and unobserved heterogeneity.

### Measurement Instrument

Structured questionnaires with previously validated scales will be utilized for collecting data. All constructs would be measured on a seven-point Likert scale ranging from 1, “strongly disagree,” to 7, “strongly agree.” The scale used to measure paradoxical leadership would be that developed by Zhang et al. (2015). Five dimensions were captured by the instrument: other-centeredness combined with self-centeredness, distance combined with closeness, uniform treatment combined with individualization, enforcing of requirements and flexibilities, and decision control combined with autonomy. This construct was multidimensional, so it would be modelled as a higher-order construct following a two-stage PLS-SEM approach.

The indicators of learning culture would be measured by the modified items of the Dimensions of the Learning Organization Questionnaire, which includes continuous learning, dialogue, team learning, knowledge system, empowerment and strategic

learning support. Psychological safety would be defined using Edmondson's 7 item scale for psychological safety that included feelings of being safe to take interpersonal risks, talk about mistakes and ask for help (Edmondson, 1999). Self-leadership would be assessed using the nine-item self-leadership questionnaire abbreviated by Houghton et al. (2012) that measured aspects of self-leadership including task motivation and constructive cognition, behavioural awareness and volition.

Adaptive performance would be evaluated by the multidimensional instrument developed by Charbonnier-Voirin and Roussel (2012) that assessed adaptability during emergencies, uncertainty, learning, interpersonal situations and workplace stressors. This measure would be filled by supervisors and not by employees in order to lower same-source inflation. Age, gender, level of education, organizational tenure, organizational size and job level would also be obtained as control variables from the questionnaire.

Management academics and HR practitioners will review the questionnaire to ensure its content validity and appropriateness. About 40 employees would be asked to participate in a pilot study to test wording and the time it takes to complete it, as well as to test the preliminary reliability. If employees feel at ease using English for their professional life in the workplace, they will do so. A professional Urdu translation would also be done using translation and back-translation. Before the datasets were combined, the measurement invariance of English and Urdu responses would be determined.

**Data Collection**

Participating organisations and the appropriate institutional ethics committee will be contacted formally for permission. Survey links or confidential questionnaires would be sent to designated employees in HR departments or by the HR department or a designated coordinator. Everybody would develop a private identification code that would allow them to get a response from the same individual over time waves without gathering names. The supervisors would be given their own adaptive performance forms that contained only participant codes.

They would also be told about confidentiality and the right to withdraw from the study, as well as the fact that the data would be used only for academic purposes. The reminder messages would be sent once in every wave. Participating organisations would not be provided with any results at the individual level. Rush jobs and/or a high percentage of missing data or a high percentage of invariant answer patterns would be excluded during data screening.

**Data Analysis Techniques**

Data will first be analyzed in SPSS for missing values, out-of-range data, response patterns, descriptive statistics and demographic distributions. If values were missing, they would be checked for randomness; if the completion times were very short or straight-lined, or the identification codes were not consistent, these would be investigated before analysis. If the non-response bias is to be evaluated, it would be done by comparing early and late respondents. Variance inflation factors would be examined to see if there was problematic collinearity.

Partial Least Squares Structural Equation Modelling in SmartPLS 4 will be used to test the hypotheses. Given these features, the model used was PLS-SEM, suitable for the presence of mediation, moderation, higher-order constructs, prediction-oriented goals and the potential for non-normal survey data. Separate evaluation of the measurement and structural models was recommended in the existing methodological guidance (Hair et al., 2022).

In the reflective measurement models, indicator loadings, Cronbach's alpha, rho_A, composite reliability and average variance extracted would be analyzed. Any values between 0.7 and 0.9 for the internal consistency and average variance extracted greater than 0.50 would be acceptable. The heterotrait–monotrait ratio would be used to assess the discriminant validity. The two-stage approach would be considered as an estimation of higher-order constructs of paradoxical leadership and adaptive performance. The significance and relevance of the weights of the higher-order dimensions would be evaluated after determining if the higher-order dimensions are collinear.

Inner variance inflation factors, standardized path coefficients, coefficient of determination, effect size, predictive relevance and out-of-sample prediction would be used to evaluate the structural model. The significance of the statistics will be assessed by using 10,000 bootstrap samples. It will test the indirect pathway of paradoxical leadership and learning culture to adaptive performance through psychological safety without only relying on the significance of the direct pathway. The moderating role of self-leadership would be explored by the interaction between psychological safety and self-leadership. Simple-slope analysis for low, mean and high levels of self-leadership would be used to interpret significant interactions.

Conditional indirect effects and the moderated mediation index would be used to test the moderated mediation hypotheses. Confidence intervals that do not contain the null value would provide support for the proposed conditional indirect relationships. Measurement-invariance assessment and multigroup analysis would be used to test for sector differences, and PLSpredict would be used for predictive assessment. Finally, finite-mixture or prediction-oriented procedures of segmentation can be used to investigate whether there are meaningfully different structural relationships for unobserved employee groups.

## Finding and Analysis

### Measurement Model

The measurement model is satisfactory for indicator reliability, internal consistency, convergent validity and collinearity diagnostics for each of the five constructs. Indicator loadings are between 0.783 and 0.894, which is higher than the 0.70 threshold and indicates that all of the indicators load sufficiently on each latent construct. LC4 has the highest loading (0.894), while PL4 has the lowest loading (0.783), but this is still over the recommended loading and is not a cause for concern. Cronbach's alpha for items ranges from 0.936 to 0.952, and the composite reliability values range from 0.948 to 0.958. The results showed that the items in the instruments were internally consistent and had a high level of reliability in measuring the constructs. The composite reliability values for AP, PL, and SL are slightly above 0.95, suggesting some item similarity or redundancy. This could be the subject of refinements in the future, examining the potential for conceptual overlap without compromising coverage of the construct.

Convergent validity is also robust, as the average variance extracted values are from 0.698 to 0.737, well above the suggested minimum 0.50. This means that more than half of the variance in the indicators of every construct is explained by each construct. The indicators for PS have the highest AVE (0.737), followed by AP (0.723) and LC (0.721), which shows that there is a very high shared variance among the indicators of this subscale. Finally, all VIF values are between 2.193 and 3.871, which is below the conservative limit of 5.00. Thus, multicollinearity is not an issue. In general, the measurement model has good psychometric properties and can be used for the further evaluation of the structural model, which includes the testing of hypotheses, explaining, predicting, and assessing the effects.

Table 1: Reliability and Validity

| Construct | Item | Factor Loading | Cronbach's Alpha | Composite Reliability (CR) | AVE | VIF |
|---|---|---|---|---|---|---|
| AP | AP1 | 0.870 | 0.945 | 0.954 | 0.723 | 3.209 |
| AP | AP2 | 0.857 | | | | 2.921 |
| AP | AP3 | 0.877 | | | | 3.330 |
| AP | AP4 | 0.808 | | | | 2.409 |
| AP | AP5 | 0.846 | | | | 2.695 |
| AP | AP6 | 0.885 | | | | 3.522 |
| AP | AP7 | 0.826 | | | | 2.590 |
| AP | AP8 | 0.828 | | | | 2.550 |
| LC | LC1 | 0.863 | 0.936 | 0.948 | 0.721 | 2.853 |
| LC | LC2 | 0.854 | | | | 2.758 |
| LC | LC3 | 0.828 | | | | 2.464 |

| Construct | Item | Factor Loading | Cronbach's Alpha | Composite Reliability (CR) | AVE | VIF |
|---|---|---|---|---|---|---|
| LC | LC4 | 0.894 | | | | 3.568 |
| LC | LC5 | 0.808 | | | | 2.324 |
| LC | LC6 | 0.852 | | | | 2.697 |
| LC | LC7 | 0.845 | | | | 2.640 |
| PL | PL1 | 0.820 | 0.952 | 0.958 | 0.698 | 2.594 |
| PL | PL2 | 0.808 | | | | 2.406 |
| PL | PL3 | 0.861 | | | | 3.137 |
| PL | PL4 | 0.783 | | | | 2.193 |
| PL | PL5 | 0.890 | | | | 3.871 |
| PL | PL6 | 0.840 | | | | 2.867 |
| PL | PL7 | 0.846 | | | | 2.899 |
| PL | PL8 | 0.791 | | | | 2.272 |
| PL | PL9 | 0.836 | | | | 2.762 |
| PL | PL10 | 0.872 | | | | 3.393 |
| PS | PS1 | 0.881 | 0.941 | 0.952 | 0.737 | 3.350 |
| PS | PS2 | 0.869 | | | | 3.000 |
| PS | PS3 | 0.842 | | | | 2.549 |
| PS | PS4 | 0.869 | | | | 3.101 |
| PS | PS5 | 0.874 | | | | 3.202 |
| PS | PS6 | 0.854 | | | | 2.790 |
| PS | PS7 | 0.821 | | | | 2.425 |
| SL | SL1 | 0.836 | 0.948 | 0.956 | 0.708 | 2.614 |
| SL | SL2 | 0.854 | | | | 2.950 |
| SL | SL3 | 0.819 | | | | 2.482 |

| Construct | Item | Factor Loading | Cronbach's Alpha | Composite Reliability (CR) | AVE | VIF |
|---|---|---|---|---|---|---|
| SL | SL4 | 0.871 | | | | 3.381 |
| SL | SL5 | 0.847 | | | | 2.829 |
| SL | SL6 | 0.840 | | | | 2.727 |
| SL | SL7 | 0.850 | | | | 3.039 |
| SL | SL8 | 0.807 | | | | 2.310 |
| SL | SL9 | 0.847 | | | | 2.934 |

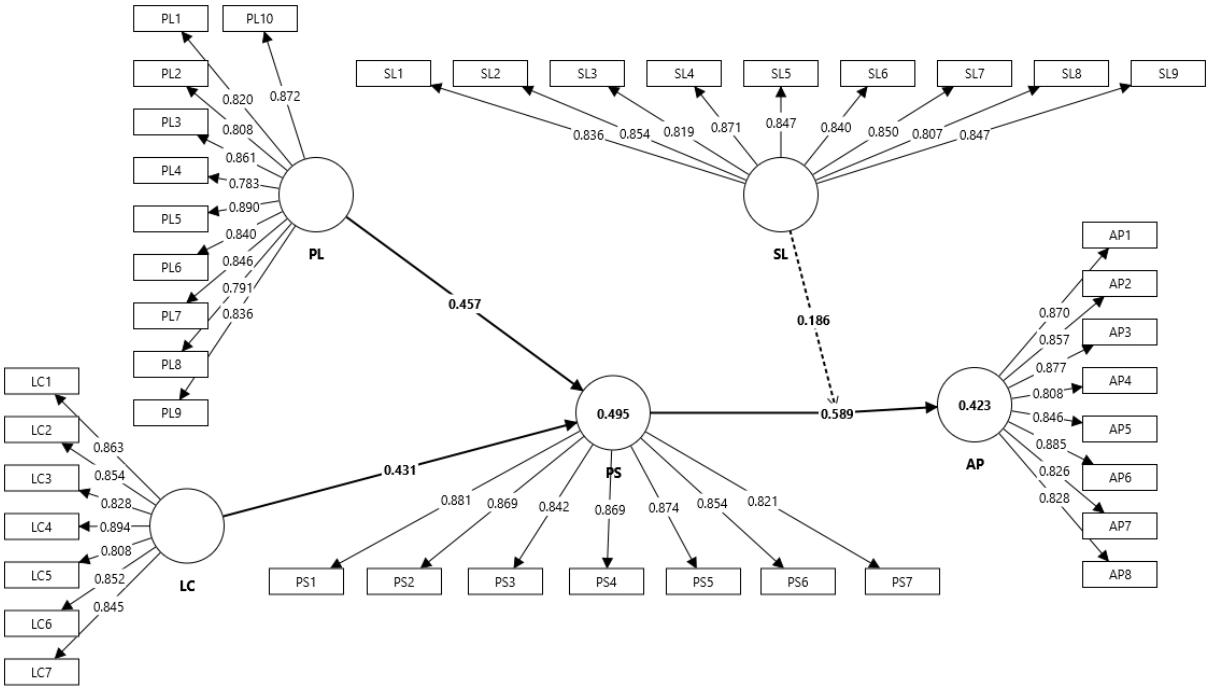



**Figure 2: Measurement Model**

**Discriminant validity**

Discriminant validity results show that good discriminative relationships exist among the five constructs. The inter-construct correlation values are between 0.121 and 0.624, which are still lower than the conservative limit of 0.85. The highest correlation is between AP and PS (0.624), followed by PL and PS (0.595) and LC and PS (0.580), where there is conceptual overlap but not necessarily a strong relationship. The smallest correlation is found between PL and SL (0.121), indicating significant construct independence. The results as a whole support the theoretical distinctions of AP, LC, PL, PS, and SL. Thus, the discriminant validity of the measurement model is confirmed, which indicates the validity of the measurement model for further structural-path and hypothesis testing.

Table 2: HTMT Criteria

| Construct | AP | LC | PL | PS | SL |
|---|---|---|---|---|---|
| **AP** | — | | | | |
| **LC** | 0.499 | — | | | |
| **PL** | 0.474 | 0.265 | — | | |
| **PS** | 0.624 | 0.580 | 0.595 | — | |
| **SL** | 0.277 | 0.191 | 0.121 | 0.126 | — |

**Structural Model**

All hypothesized relationships are supported well by the results of the structural model. LC significantly influences PS (β = 0.431, t = 12.648), while PL exerts a slightly stronger effect on PS (β = 0.457, t = 13.916). PS has the largest direct impact on AP (β = 0.589, t = 18.233), which indicates the central role of PS in explaining AP. SL is significantly moderating AP, based on the positive interaction with PS (β = 0.186, t = 4.664). Furthermore, PS plays a significant role in mediating the LC–AP relationship (β = 0.254) and PL–AP relationship (β = 0.269). All effects are significant at p< .001.

Table 3: Path coefficient

| Hypothesized Relationship | Beta (β) | STDEV | T Value | P Value |
|---|---|---|---|---|
| LC → PS | 0.431 | 0.034 | 12.648 | 0.000 |
| PL → PS | 0.457 | 0.033 | 13.916 | 0.000 |
| PS → AP | 0.589 | 0.032 | 18.233 | 0.000 |
| SL × PS → AP | 0.186 | 0.040 | 4.664 | 0.000 |
| LC → PS → AP | 0.254 | 0.026 | 9.778 | 0.000 |
| PL → PS → AP | 0.269 | 0.025 | 10.555 | 0.000 |

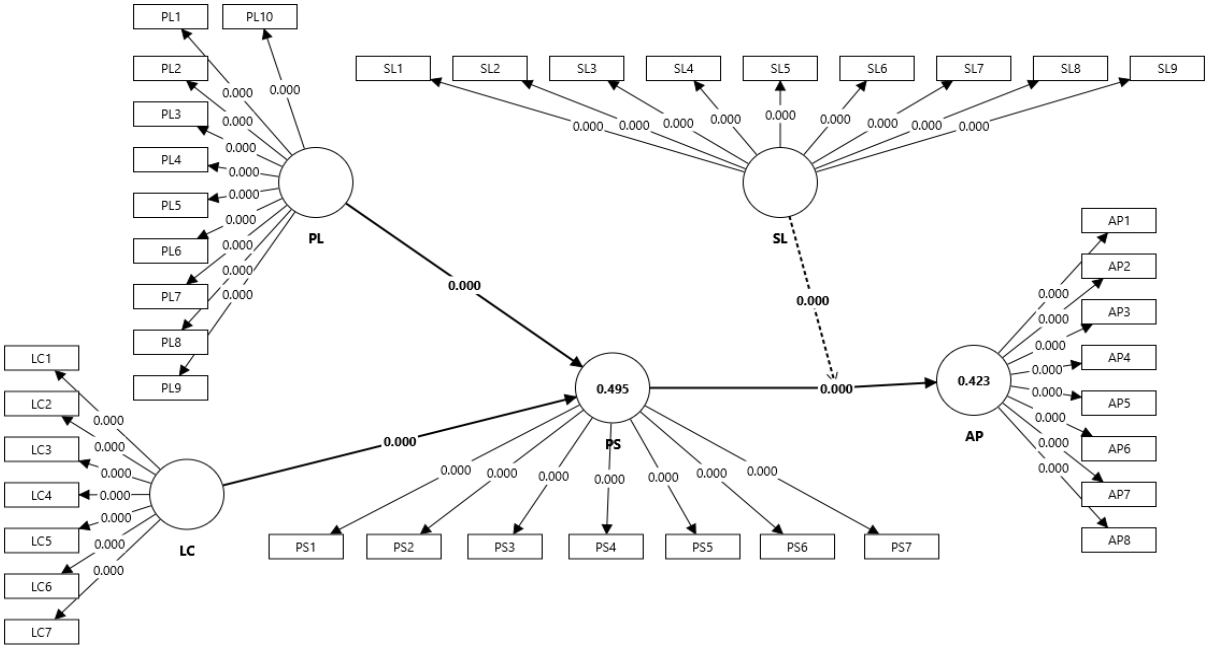



**Figure 3: Structural Model**

**Variance, effect size and Predictive relevance**

Structural model has good explanatory and predictive performance. The $R^2$ values show that LC and PL explain 49.5% of the variance in PS, whereas PS and SL explain 42.3% of the variance in AP. The adjusted R2 values are also similar, suggesting that there is not a lot of overfitting and that the model is stable. The results of the effect size show that the effect of PS on AP is large (f2 = 0.585) and the effect of PL on PS is large (f2 = 0.386) and the effect of LC on PS is large (f2 = 0.344). SL produces a small effect on AP ($f^2$ = 0.061). Finally, meaningful predictive relevance is confirmed by respectively $Q^2$ values of 0.301 and 0.361 for AP and PS.

Table 4: R- Square, f- Square, Q- Square

| Construct/Relationship | R-square | R-square Adjusted | f-square | SSO | SSE | $Q^2$ (= 1 – SSE/SSO) |
|---|---|---|---|---|---|---|
| AP | 0.423 | 0.419 | | 3200.000 | 2237.429 | 0.301 |
| PS | 0.495 | 0.492 | | 2800.000 | 1789.479 | 0.361 |
| LC → PS | | | 0.344 | | | |
| PL → PS | | | 0.386 | | | |
| PS → AP | | | 0.585 | | | |
| SL → AP | | | 0.061 | | | |

## Discussion

The results suggest strong empirical support for the moderated mediation model proposed. Paradoxical leadership positively affected psychological safety (β = 0.457), and paradoxical leaders who engage in both control and autonomy, consistency and flexibility, and authority and relational closeness enable employees to feel safe in expressing concerns, admitting to mistakes, and trying out new ideas. The result confirms paradox theory, which posits that adopting a “both-and” leadership style allows

employees to handle conflicting organizational demands positively (Zhang et al., 2015; Batool et al., 2023). The impact of learning culture is also large and positive (+0.431), which means that continuous learning, feedback, discussion, and responding positively to failure each have a positive effect on lowering the interpersonal risks when challenging traditional ways of doing things.

The most prominent mechanism that contributed to adaptive performance was psychological safety, which explained the highest direct relationship in the model ($\beta = 0.589$; $f^2 = 0.585$). The discovery further solidifies the idea that psychological safety is not only a comfort for employees, but also a performance-enabling environment that enables information sharing, experimentation, error reporting, and behavioural changes (Edmondson & Bransby, 2023). In addition, psychological safety was a powerful mediator between the relationship of paradoxical leadership ($\beta = 0.269$) and learning culture ($\beta = 0.254$) with adaptive performance. This indicates that leadership and culture of learning resources become effective when converted into the perception of the employees about psychological safety in the workplace.

The relationship between psychologically safe employees and adaptive performance was positively reinforced by self-leadership ($\beta = 0.186$), showing that a high level of self-leadership positively enhances the adaptive performance of psychologically safe employees. Psychological safety was explained by the model by 49.5%, and adaptive performance was explained 42.3%, with positive $Q^2$ values indicating that the model had meaningful predictive relevance. In sum, these findings establish a key explanatory bridge, in the form of psychological safety, and a critical boundary condition, in the form of self-leadership, in the knowledge-intensive service organizations of Pakistan.

**Theoretical Implications**

This study adds to the theoretical body of knowledge by combining the theories of paradox theory and social cognitive theory into one explanation of adaptive performance. First, it takes the theory of paradox to the level of the direct consequences of paradoxical leadership behavior and adds in the cognitive-affective process of psychological safety. Second, the results add to the literature on learning culture by showing that organizational learning systems have an impact on performance beyond knowledge acquisition; they also reduce perceived costs of experimentation and error disclosure within the interpersonal learning system. Thirdly, the important mediation effects make psychological safety a common explanatory pathway between leadership and organizational culture and adaptive performance. Lastly, the moderating effect of self-leadership extends the social cognitive theory by demonstrating that a supportive context is not always guaranteed to lead to employee actions. Permission to act is psychological safety, but self-leadership is the personal agency, motivation, and behavioral regulation that turns psychological safety into adaptation. The framework thus links mechanisms at the organizational, psychological and individual levels into a coherent theoretical model.

**Practical Implications**

Organizations should create leadership practices that focus on the needs of the organization as a whole, instead of just one or the other of manager control or employee autonomy. Leadership-development programs should help managers to be clear about what good performance looks like, give them some flexibility, preserve their authority, ensure that employees have a say and recognize failure as a learning opportunity. Additionally, it is important that organizations build in systems for learning on a regular basis, for example, through feedback sessions, knowledge-sharing meetings, after-action reviews, mentoring, and through non-punitive discussions of operational failures. These can help foster a sense of psychological safety and help staff openly discuss the issues that are starting to occur, before they get expensive.

Human-resource departments should also include interventions to develop self-leadership as part of training. Individual employees can be trained to set their own goals, be aware of their own behavior, engage in positive self-talk, motivate themselves to improve their own behavior, and adjust their behavior. This is especially true if employees are not self-regulating or lack initiative, as it is possible for them to have a safe place to operate without adapting. Therefore, managers should create psychologically safe work environments and employee empowerment, employee coaching, and personal accountability. These interventions can enhance the reactions to technological disruptions, changing customer needs, and changes in processes in Pakistan's banking, telecommunication, and software industries.

**Limitations and recommendations for future improvements**

The research was conducted in the domains of knowledge-intensive service organizations in Pakistan, thus limiting the generalizability of the findings to manufacturing firms or public institutions or other national cultures. The model showed the explanation and prediction relevance to be satisfactory but there are other variables, like leader trustworthiness, employee

resilience, Digital competence and organizational hierarchy, that can affect adaptive performance. Longitudinal or experimental designs should be used in the future to enhance causal inferences and assess how the relationships vary across time. The following is recommended: Cross-country and sectoral comparisons. Further research is needed on the potential for nonlinear effects, as too much or too little paradoxical behavior or psychological safety may create confusion, complacency or lack of accountability when specific organizational factors are at play.

## Conclusion

The study proved that there is a significant strengthening of psychological safety through paradoxical leadership and learning culture, which further raises adaptive performance. The mediation model results supported both relationships, as psychological safety translated into organizational resources, creating behavioral meaning for both speaking up and learning from mistakes and experimenting with new approaches. In addition, self-leadership reinforced the link between psychological safety and adaptive performance by providing personal regulation for responsible initiative. The model had a good level of explanatory power and predictive relevance. Adaptive performance is more a function of the synergistic effect of balanced leadership, an embedded learning culture, interpersonal security and employee self-regulation than of any single organizational practice.

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