

TRANSFORMATIONAL DIGITAL LEADERSHIP AND EMPLOYEE AGILITY IN HYBRID WORK SYSTEMS: EXAMINING ORGANIZATIONAL RESILIENCE IN PAKISTAN'S PUBLIC AND PRIVATE SECTORS

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Abstract

The rapid shift toward hybrid work systems has intensified the need for effective leadership models that can ensure employee adaptability and organizational resilience. This study examines the impact of transformational digital leadership on employee agility and organizational resilience in hybrid work environments across Pakistan's public and private sectors. A quantitative, cross-sectional research design was employed using survey data collected from employees with hybrid work experience. Structural Equation Modeling (SEM) was used to test direct and mediating relationships among the variables. The findings reveal that transformational digital leadership significantly enhances employee agility, which in turn strongly predicts organizational resilience. Employee agility was found to partially mediate the relationship between leadership and resilience, indicating that leadership effectiveness is strengthened when employees demonstrate adaptability and responsiveness to digital work demands. Furthermore, comparative analysis showed that private sector organizations exhibit higher levels of leadership effectiveness and agility compared to public sector institutions.

The study concludes that transformational digital leadership is a key driver of organizational resilience in hybrid work systems, primarily through its influence on employee agility. The findings contribute to leadership theory by integrating digital transformation perspectives and provide practical insights for improving workforce adaptability in developing economies.

INTRODUCTION

The rapid adoption of digital technologies and hybrid work systems has fundamentally reshaped organizational structures and workforce dynamics worldwide. In this evolving environment, transformational digital leadership has emerged as a critical determinant of employee performance, adaptability, and organizational resilience. Leaders who demonstrate vision, innovation, and digital competence are better positioned to guide organizations disruption (Bass & Riggio, 2006; Avolio et al., 2014).

Employee agility has become equally important in hybrid work systems, where employees are required to rapidly adjust to shifting job demands, digital platforms, and remote collaboration tools. Agile employees demonstrate flexibility, proactive learning behavior, and responsiveness to change, which are essential for maintaining productivity in dynamic work environments (Joiner, 2019).

In Pakistan, both public and private sector organizations are undergoing digital

transformation; however, disparities in infrastructure, leadership capacity, and organizational culture influence the effectiveness of hybrid work adoption. Understanding how transformational digital leadership influences employee agility and organizational resilience is therefore critical in this context.

Problem Statement

Despite increasing adoption of hybrid work systems in Pakistan's public and private sectors, many organizations continue to struggle with low employee adaptability and weak organizational resilience. Leadership practices in many institutions remain traditionally hierarchical, limiting responsiveness to digital transformation demands.

Existing literature has extensively explored transformational leadership in conventional settings; however, limited research has examined its digital extension in hybrid work environments, particularly in developing countries like Pakistan. Furthermore, the mechanisms through which transformational digital leadership influences employee agility and organizational resilience remain underexplored. This creates a significant theoretical and practical gap in understanding how leadership can effectively support workforce adaptability in digitally enabled hybrid systems.

Research Questions

- How does transformational digital leadership influence employee agility in hybrid work systems?
- What is the impact of employee agility on organizational resilience in public and private sector organizations?
- Does employee agility mediate the relationship between transformational digital leadership and organizational resilience?
- Are there significant differences between public and private sector organizations in terms of leadership effectiveness and agility outcomes?
- How do digital work environments shape the relationship between leadership and employee performance?

Research Objectives

- To examine the impact of transformational digital leadership on employee agility in hybrid work systems.
- To analyze the effect of employee agility on organizational resilience.
- To investigate the mediating role of employee agility between leadership and organizational resilience.
- To compare public and private sector organizations in Pakistan regarding leadership effectiveness and agility.
- To explore how hybrid digital work environments influence organizational adaptability.

Significance of the Study

This study contributes to leadership and organizational behavior literature by extending transformational leadership theory into the digital and hybrid work context. It provides empirical insights into how leadership practices influence employee agility, which is essential for organizational resilience in uncertain and rapidly changing environments.

Practically, the study offers valuable guidance for policymakers and organizational leaders in Pakistan's public and private sectors. It highlights the importance of adopting digital leadership competencies, fostering agile work cultures, and implementing flexible organizational structures to enhance resilience.

From a strategic perspective, the findings can help organizations improve workforce adaptability, optimize hybrid work performance, and strengthen long-term sustainability in the face of technological disruption and global uncertainties.

Literature Review

The rapid digital transformation of organizations has reshaped leadership practices, workforce expectations, and organizational structures, particularly in hybrid work environments. In this context, transformational digital leadership has emerged as a critical factor in enabling employee adaptability, innovation, and resilience. Transformational leaders provide vision,

intellectual stimulation, and individualized support, which collectively enhance employees' ability to cope with technological and environmental uncertainty (Bass & Riggio, 2006; Avolio et al., 2014).

Recent literature extends transformational leadership into the digital domain, emphasizing the role of leaders in guiding organizations through technology-driven change. Digital leaders are expected not only to manage people but also to understand digital ecosystems, data-driven decision-making, and remote collaboration systems. Studies suggest that leadership agility and digital competence significantly influence organizational adaptability in hybrid work settings (Cortellazzo et al., 2019; Uhl-Bien & Arena, 2018).

Employee agility has become a key construct in contemporary organizational behavior research. Agile employees demonstrate flexibility, proactive learning, and responsiveness to change, which are essential in hybrid work systems characterized by remote collaboration and digital dependency. Empirical studies indicate that agile employees contribute directly to organizational performance by enhancing innovation and reducing response time to environmental changes (Joiner, 2019).

Organizational resilience, defined as the ability of organizations to anticipate, respond to, and recover from disruptions, has gained increasing attention in post-pandemic research. Hybrid work systems have introduced both opportunities and challenges for resilience, particularly in developing economies where digital infrastructure and leadership capacity vary significantly. Research indicates that resilience is strongly influenced by leadership quality and employee adaptability, especially in uncertain and volatile environments (Bennett & Lemoine, 2014).

In developing countries such as Pakistan, public and private sector organizations face structural and cultural barriers to effective hybrid work implementation. Public sector institutions often exhibit rigid hierarchical structures, while private sector organizations demonstrate greater flexibility but inconsistent leadership practices. Limited empirical research exists on how

transformational digital leadership influences employee agility and organizational resilience in such dual-sector contexts, highlighting a significant research gap.

Overall, existing literature confirms that transformational leadership is essential for fostering agile workforces and resilient organizations; however, its digital adaptation within hybrid work systems remains underexplored, particularly in developing economies.

Underpinning Theory

Transformational Leadership Theory

This study is grounded in Transformational Leadership Theory, originally developed by Burns (1978) and expanded by Bass (1985). The theory posits that transformational leaders inspire and motivate followers to exceed expectations by transforming their attitudes, values, and behaviors through four key dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration.

In the context of hybrid work systems, transformational digital leadership extends this framework by incorporating digital competence, virtual communication effectiveness, and technology-enabled decision-making. Such leaders play a critical role in fostering employee agility by encouraging learning, adaptability, and proactive problem-solving in digitally mediated environments.

The theory also explains organizational resilience by suggesting that transformational leaders create a shared vision and adaptive culture that enables organizations to respond effectively to disruptions. In Pakistan's public and private sectors, where hybrid work systems are still evolving, transformational leadership provides a strong explanatory lens for understanding how leadership behavior influences employee agility and long-term organizational resilience.

Hypotheses

H1: Transformational digital leadership has a positive effect on employee agility in hybrid work systems.

H2: Employee agility has a positive effect on organizational resilience.

H3: Transformational digital leadership has a positive effect on organizational resilience.

H4: Employee agility mediates the relationship between transformational digital leadership and organizational resilience.

H5: There are significant differences between public and private sector organizations in the relationship between transformational digital leadership and employee agility.

Methodology

Research Design

The study employed a quantitative, cross-sectional, and explanatory research design to examine the relationships among transformational digital leadership, employee agility, and organizational resilience in hybrid work systems. The design was selected to test hypothesized relationships and mediation effects using statistical techniques, particularly Structural Equation Modeling (SEM). A survey method was adopted to collect standardized responses from organizational employees across public and private sectors in Pakistan.

Population

The target population consisted of employees working in hybrid or digitally enabled work environments in both public and private sector organizations in Pakistan. This included managerial, administrative, and operational staff who had experience with remote or hybrid work arrangements supported by digital technologies.

Sampling Technique

A stratified random sampling technique was employed to ensure proportional representation of both public and private sector organizations. Within each stratum, participants were selected based on their exposure to hybrid work systems and digital communication tools. This approach ensured diversity in organizational type while maintaining comparability across groups.

Sample Size

A total of 400 valid responses were collected and included in the final analysis. The sample was equally distributed between public and private sector employees to support meaningful comparative and structural analysis. This sample size was considered adequate for SEM requirements and met recommended thresholds for multivariate statistical modeling.

Data Collection Procedures

Data were collected using a structured questionnaire distributed electronically through email, organizational networks, and professional platforms. Respondents were briefed on the purpose of the study, and informed consent was obtained prior to participation. Data collection was conducted over a defined period, and only fully completed questionnaires were retained for analysis.

A pilot study involving a small group of respondents was conducted to refine the questionnaire and ensure clarity, relevance, and contextual appropriateness for hybrid work environments in Pakistan.

Instruments / Measures

The research instrument was based on a five-point Likert scale ranging from strongly disagree to strongly agree. The measurement items were adapted from established and validated scales in previous studies.

- Transformational Digital Leadership was measured using indicators of inspirational motivation, intellectual stimulation, individualized consideration, and digital leadership competence.

- Employee Agility was measured through adaptability, responsiveness to change, learning agility, and proactive behavior in hybrid work settings.

- Organizational Resilience was assessed using dimensions of adaptability, recovery capability, and continuity of operations during disruptions.

All constructs were operationalized using previously validated measurement scales to ensure theoretical consistency.

Reliability and Validity

Reliability was assessed using Cronbach's alpha and composite reliability. All constructs exceeded the acceptable threshold of 0.70, indicating strong internal consistency among items.

Validity was established through multiple procedures. Content validity was ensured through expert review by academic specialists in organizational behavior and human resource management. Construct validity was evaluated using confirmatory factor analysis (CFA), where factor loadings exceeded 0.50 and Average Variance Extracted (AVE) values were above 0.50, confirming convergent validity.

Discriminant validity was assessed by comparing inter-construct correlations, confirming that each construct was distinct from others. Overall, the measurement model demonstrated strong reliability and validity, making it suitable for structural analysis using SEM.

Data Analysis**Data Analysis Procedure**

The collected data were analyzed using SPSS and Structural Equation Modeling (SEM) to examine the relationships among transformational digital leadership, employee agility, and organizational resilience. The analysis began with descriptive statistics to summarize respondents' perceptions, followed by reliability and validity testing to confirm measurement quality. Inferential analysis was conducted using SEM to test direct, indirect (mediating), and comparative (public vs. private sector) effects.

Mediation analysis was performed using bootstrapping procedures, while multi-group analysis was applied to assess sectoral differences. A significance level of $p < 0.05$ was used for hypothesis testing.

Table 1: Reliability and Validity Analysis

Construct	Cronbach's Alpha	Composite Reliability	AVE
Transformational Digital Leadership	0.89	0.91	0.66
Employee Agility	0.88	0.90	0.64
Organizational Resilience	0.90	0.92	0.68

The results confirmed strong internal consistency across all constructs, with Cronbach's alpha values exceeding the recommended threshold of 0.70. Composite reliability values further supported measurement stability, while AVE values indicated adequate convergent validity. These results confirmed that the measurement model was statistically robust and suitable for structural analysis.

Table 2: Descriptive Statistics

Variable	Mean	Standard Deviation
Transformational Digital Leadership	3.76	0.82
Employee Agility	3.68	0.79
Organizational Resilience	3.81	0.75

The descriptive results indicated moderately high perceptions of transformational digital leadership and organizational resilience. Employee agility also showed a positive mean score, suggesting

that employees generally perceived themselves as adaptable in hybrid work environments. The relatively low standard deviations indicated consistency in responses across participants.

Table 3: Structural Model Results (Hypotheses Testing)

Hypothesis	Relationship	Beta (β)	t-value	p-value	Result
H1	TDL $\rightarrow$ Employee Agility	0.63	8.21	<0.001	Supported
H2	Employee Agility $\rightarrow$ Resilience	0.69	9.34	<0.001	Supported
H3	TDL $\rightarrow$ Resilience	0.41	5.78	<0.001	Supported
H4	Mediation Effect	0.43	6.12	<0.001	Supported

The structural model results confirmed that transformational digital leadership significantly enhances employee agility. The strongest relationship was observed between employee agility and organizational resilience, indicating that agile employees are critical drivers of

organizational adaptability in hybrid work systems. The direct effect of leadership on resilience remained significant, confirming partial mediation. This suggests that employee agility partially explains how leadership translates into organizational resilience.

Table 4: Multi-Group Analysis (Public vs. Private Sector)

Path	Public Sector (β)	Private Sector (β)	Difference
TDL $\rightarrow$ Employee Agility	0.58	0.67	Higher in Private Sector
Employee Agility $\rightarrow$ Resilience	0.65	0.72	Higher in Private Sector

The multi-group analysis revealed notable differences between public and private sector organizations. The influence of transformational digital leadership on employee agility was stronger in the private sector, suggesting that private organizations are more responsive to leadership-driven digital transformation. Similarly, the impact of employee agility on organizational resilience was also higher in the private sector, indicating greater flexibility and adaptability compared to public institutions.

The findings confirmed that transformational digital leadership plays a crucial role in enhancing employee agility and organizational resilience in hybrid work systems. Employee agility emerged as the most significant predictor of resilience, highlighting its central role in ensuring organizational sustainability in dynamic environments.

The mediation results demonstrated that leadership influences resilience both directly and indirectly through employee agility. This indicates that leadership alone is insufficient unless it fosters an agile workforce capable of responding effectively to digital and operational disruptions.

Cross-sector analysis further revealed that private sector organizations outperform public sector institutions in both leadership effectiveness and agility outcomes. This suggests that organizational structure, flexibility, and innovation culture significantly influence the effectiveness of digital leadership practices.

Overall, the results support the integrated theoretical framework and confirm that transformational digital leadership is a key enabler of organizational resilience in hybrid work systems.

Discussion

The findings of this study demonstrate that transformational digital leadership significantly influences employee agility, which in turn enhances organizational resilience in hybrid work systems. This aligns with prior research emphasizing that transformational leadership fosters adaptability, innovation, and positive behavioral change in dynamic organizational environments (Bass & Riggio, 2006; Avolio et al., 2014).

Employee agility emerged as the strongest predictor of organizational resilience, indicating that organizations relying on hybrid work

structures depend heavily on employees' ability to rapidly adapt to digital tools, shifting workflows, and remote collaboration demands. This supports the argument that agility is a critical intermediary capability in translating leadership practices into organizational performance outcomes (Joiner, 2019).

The mediation effect confirms that transformational digital leadership does not operate in isolation; rather, its impact on resilience is significantly strengthened through employee agility. Furthermore, the observed differences between public and private sector organizations highlight structural and cultural disparities. Private sector organizations demonstrated stronger leadership effectiveness and agility outcomes, likely due to more flexible structures and faster adoption of digital transformation practices.

Conclusion

The study concludes that transformational digital leadership is a critical driver of employee agility and organizational resilience in hybrid work environments. Employee agility partially mediates the relationship between leadership and resilience, indicating that leadership effectiveness is enhanced when employees are adaptable and responsive to change. Additionally, organizational context significantly influences these relationships, with private sector organizations showing stronger outcomes compared to public sector institutions in Pakistan.

Implications of the Study

Theoretically, this study extends transformational leadership theory by integrating digital leadership dimensions and applying it within hybrid work systems. It also contributes to organizational behavior literature by positioning employee agility as a key mediating mechanism in the leadership-resilience relationship.

Practically, the findings provide actionable insights for organizational leaders in both public and private sectors. Leaders must adopt digital competencies, foster innovation-oriented cultures, and encourage continuous learning to enhance employee agility. Organizations should

also invest in digital infrastructure and training programs to support hybrid work efficiency.

From a policy perspective, the results highlight the need for public sector reforms in Pakistan aimed at improving digital governance, leadership development programs, and workforce modernization strategies to enhance organizational resilience.

Recommendations

Organizations should implement structured leadership development programs focused on digital transformation, innovation management, and hybrid work leadership skills.

Employees should be provided with continuous training and upskilling opportunities to strengthen adaptability and responsiveness in digital work environments.

Public sector organizations should adopt more flexible HR policies to reduce bureaucratic constraints and improve responsiveness to technological change.

Investment in digital infrastructure, collaboration tools, and cybersecurity systems should be prioritized to support hybrid work effectiveness.

Organizations should promote a culture of innovation, knowledge sharing, and psychological safety to enhance employee agility and resilience.

Limitations and Future Directions

This study was limited by its cross-sectional design, which restricted the ability to assess changes in leadership effectiveness and organizational resilience over time. Future research should adopt longitudinal designs to capture dynamic behavioral changes in hybrid work environments.

The study relied on self-reported data, which may introduce response bias and limit objectivity. Future studies should incorporate objective performance metrics and multi-source data collection methods.

The research focused on Pakistan's public and private sectors, which may limit generalizability to other countries or organizational contexts. Future research should expand the scope to include cross-country comparisons.

Future studies should also explore additional variables such as digital culture, emotional intelligence, and technological readiness to provide a more comprehensive understanding of organizational resilience in hybrid work systems.

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