

Examining the Moderating Role of Digital Knowledge-Sharing Capability on the Relationship between Transformational Leadership and Organisational Performance among Hybrid-Working Employees in the Delhi-NCR IT Sector

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Abstract

The objective of present study is to investigate the moderating role of digital knowledge sharing capability on the relationship between transformational leadership and organisational performance of employees working in hybrid mode. Transformational leadership is generally accepted to be a significant predictor of organisational performance. However, the intervening role of knowledge sharing capability has been explored limitedly in the extant literature, with no specific attention to the context of hybrid working arrangements in India's information technology (IT) industry. The theories used to support the study are Transformational Leadership Theory, Social Exchange Theory, and Dynamic Capabilities Theory. It develops a moderation model where digital knowledge sharing capability reinforces the influence of transformational leadership on organisational performance. To generate insights into the relationships specified in the model, this study employs PLS-SEM analysis of quantitative data collected from a conveniently sampled group of 220 hybrid-schedule employees of Delhi-NCR's IT organisations. A five-point Likert-scaled questionnaire is used to collect the data. The results confirm that there is a strong, statistically significant, positive direct effect of Transformational Leadership on organisational performance, and that digital knowledge-sharing capability significantly moderates this relationship, such that the effect of transformational leadership on organisational performance strengthens as digital knowledge-sharing capability increases. Both hypothesised relationships were supported. The study contributes to leadership and knowledge management theory by repositioning digital knowledge-sharing capability as a boundary condition rather than a transmission mechanism. It offers practical guidance for IT organisations seeking to sustain performance through complementary investment in leadership development and digital knowledge infrastructure under hybrid work arrangements.

Keywords: Transformational leadership, Digital knowledge-sharing capability, Organisational performance, Hybrid work

Introduction

Transformational leadership (TL) has, for more than three decades, been one of the consistently strongest predictors of employee-level innovation and firm-level outcomes, but the processes and boundary conditions under which it operates remain incompletely characterized and subject to continued empirical investigation. Karimi et al. (2023), in a structural equation modelling study of 178 agricultural experts in a developing-country public sector, confirmed that transformational leadership is directly and positively related to employees' innovative work behaviour, while also showing that this relationship operates partly through employees' psychological capital, particularly hope and self-efficacy. Their results were confined to one specific non-hybrid, low-digital context public-sector setting, and the authors recommended that future studies explore other possible mediation processes in different institutional contexts beyond the office environment. Similarly, Vu et al. (2025) provided a follower-focused argument for how transformational leadership (TL) influences innovative work behaviour. Their results revealed that TL predicts innovative work behaviour via psychological empowerment and work engagement, sequential mediators, therefore adding to the growing body of empirical evidence on the

mechanisms by which TL can foster organizational innovation. In their study, Kim and Yoon (2025) examined the connection between TL and employees' innovative work behaviour. The authors used the Korean IT industry workers as their research sample and found that psychological capital and thriving at work mediated the links between TL and innovative work behaviour while revealing how collaborative technologies changed the nature of innovative work behaviour among scattered IT employees. This study is particularly notable because it suggests that digitalization of leadership processes changes how leaders can influence employees' innovative work behaviour. Specifically, the traditional understanding of the influence processes of TL, which emphasizes the role of role model and individualized consideration, may be modified in a digital work environment.

In parallel to the streams of research detailed above, another set of studies explores knowledge sharing as a mechanism through which transformational leadership creates value; notably, these studies have predominantly conceptualized it as an intervening, mediating condition rather than a boundary condition. According to Nguyen and Sharma's (2024) analysis of transformational leadership in professional service firms, which was guided by the social exchange theory, transformational leadership practices were positively associated with job autonomy, which in turn drove online knowledge sharing processes via increased job engagement, suggesting that digital knowledge sharing is an outcome of transformational leadership's impact on employees' attitudes rather than a prerequisite for its effectiveness. This perspective, while insightful, fails to account for critical variations in digital knowledge-sharing infrastructure between different professional service firms, which could offset or amplify the effect of transformational leadership depending on employees' level of digital literacy and their ability to leverage technology-enabled channels to maximize collective performance. This explains why Nguyen and Sharma's finding – that transformational leadership drives online knowledge sharing through higher levels of job engagement – does not automatically translate to reality in different professional service firms, particularly after the ongoing shift toward hybrid work arrangements. In their investigation into the impact of remote and hybrid work on knowledge workers, Keppler and Leonardi (2023) revealed that compared to their co-located peers, remote and hybrid employees had fewer connections and weaker relational bonds with their co-workers, and that this deficit significantly inhibited their ability to participate in knowledge-sharing activities unless the organizational design explicitly prioritized digital tools in building relational confidence. By extension, it is plausible to assume that transformational leadership would have varying effects on organizational performance in contexts where hybrid and remote work are normalized due to the differences in employees' ability to build trust and rely on digital knowledge-sharing infrastructure to substitute for weak physical interactions. However, this idea has yet to be tested in an empirical study that would explore the ability of digital knowledge-sharing infrastructures to moderate the relationship between transformational leadership and organizational performance.

Further explaining the importance of context-specific knowledge, Kim and Yoon's (2025) analysis of the hybrid work adaptive performance process demonstrated that knowledge sharing and employee agility are serial mediators of the association between empowering leadership and adaptive performance, arguing that hybrid work's specificities demand a different theoretical understanding of knowledge processes than in conventional co-located environments because leaders have to rely on delegating power and authority to empower employees to attain the same level of innovation that was achievable by direct supervision. Similarly, Zielińska et al. (2026) examining transformational and shared leadership among IT knowledge workers, found that communication quality and organisational commitment mediate the relationship between leadership and employee performance, further evidencing that IT-sector knowledge workers represent a distinct population whose performance outcomes are shaped by communication-dependent mechanisms that are especially sensitive to the mode of work arrangement. Despite this accumulating evidence, three critical gaps remain unaddressed in the Q1/Q2 literature published between 2021 and 2026. First, no identified study has examined digital knowledge-sharing capability specifically as a moderator, rather than a mediator, of the transformational leadership-organisational performance relationship, despite strong theoretical grounds (via social exchange theory) for expecting it to condition rather than merely transmit leadership's effects. Second, the overwhelming majority of TL-performance and TL-innovation studies, including those reviewed above, were conducted either in pre-hybrid organisational settings or in single-country contexts outside India, leaving the Delhi-NCR IT sector, one of the world's largest hybrid-working knowledge economies, empirically under examined despite its theoretical and practical significance. Third, existing hybrid-work leadership studies have prioritised adaptive or contextual performance outcomes over

organisational-level performance measures, leaving unclear whether digital knowledge-sharing capability's conditioning effect scales from the individual to the organisational level. These converging gaps establish a clear and pressing need for empirical research that positions digital knowledge-sharing capability as a boundary condition, rather than a pathway, linking transformational leadership to organisational performance among hybrid-working employees in the Delhi-NCR IT sector.

Building on these identified gaps, the primary objective of this study is to examine the moderating role of digital knowledge-sharing capability on the relationship between transformational leadership and organisational performance among hybrid-working employees in the Delhi-NCR information technology (IT) sector. In striving to achieve this goal, the study will explore whether transformational leadership still remains a critical predictor of organizational performance under hybrid work arrangements while also seeking to establish if the influence of such leadership is conditional on the digital infrastructure and platform capabilities through which explicit and tacit knowledge is shared within an organization. This will differ from the preceding theoretical literature on transformational leadership and organizational performance by testing if an entity's digital knowledge-sharing infrastructure constitutes a boundary condition in the relationship between the independent variable and the dependent variable. In doing so, the study also seeks to generate empirical evidence specific to the Delhi-NCR IT sector, a hybrid-working knowledge economy that remains under examined despite its scale and strategic importance. On the basis of the empirical evidence reviewed above, this study is guided by two research questions:

Research Question 1 (RQ1): Does transformational leadership have a significant positive relationship with organisational performance among hybrid-working employees in the Delhi-NCR IT sector? Research Question 2 (RQ2): Does digital knowledge-sharing capability significantly moderate the relationship between transformational leadership and organisational performance, such that the leadership-performance relationship is strengthened under conditions of high digital knowledge-sharing capability and weakened under conditions of low digital knowledge-sharing capability?

This study differs from the existing body of research in three important respects. First, whereas prior studies (Nguyen & Sharma, 2024) have modelled knowledge sharing exclusively as a mediating mechanism through which transformational leadership produces outcomes, this study repositions digital knowledge-sharing capability as a moderating boundary condition, thereby testing a theoretically distinct and empirically untested causal structure. Second, while existing hybrid-work leadership studies (Kim & Yoon, 2025; Keppler & Leonardi, 2023) have been conducted in Korean, Western, or cross-national settings, this study is anchored specifically in the Delhi-NCR IT sector, a hybrid-working knowledge economy of substantial global scale that has not been empirically examined through this particular theoretical lens. Third, this study evaluates organisational-level performance outcomes rather than the individual-level adaptive or contextual performance measures that dominate the hybrid-work leadership literature, thereby extending the boundary conditions of transformational leadership theory to a higher level of analysis. The theoretical contribution of this study lies in advancing a moderated (rather than purely mediated) understanding of how digital knowledge infrastructure conditions leadership effectiveness, extending Social Exchange Theory and the Job Demands-Resources framework to explain why identical transformational leadership behaviours may yield divergent organisational performance outcomes depending on an organisation's digital knowledge-sharing capacity. Managerially, the study offers Delhi-NCR IT organisations an evidence-based rationale for prioritising investment in digital knowledge-sharing infrastructure, such as collaboration platforms, knowledge repositories, and structured virtual knowledge-exchange practices, as a complementary lever alongside leadership development programmes, particularly where hybrid work arrangements have weakened the informal, face-to-face channels through which tacit knowledge was traditionally transmitted.

2. Literature Review

2.1 Theoretical Background

The study was conducted under four interrelated theoretical assumptions that explain transformational leadership's direct impact on organisational performance and digital knowledge exchange's moderating role in

hybrid work conditions. The first two concepts come from Transformational Leadership Theory (Bass, 1985; Bass & Avolio, 1994). This theory views leadership as a multifaceted and multidimensional phenomenon. Leaders can exhibit eight traits that fall under four aspects: idealized influence, inspirational motivation, intellectual stimulation, and individualised consideration. Transformational leaders appeal to their followers' consciousness, encouraging them to adjust their attitudes, behaviour, and actions. Intellectual stimulation makes one's self-will the driving force of action, inspiring people to achieve more than they thought they could. Individual consideration requires paying attention to each follower's specific needs and personal characteristics. These aspects of leadership help leaders get their followers' attention and motivate them to follow through, resulting in enhanced performance outcomes. Transformational leadership has been proved effective time and again in various organisational contexts worldwide, being related to higher organisational performance. Nevertheless, the traits of transformational leadership that require leaders to work closely with the followers may be limited in hybrid organisations, which presents a theoretical challenge to the traditional understanding of leadership. Therefore, the study relied on theories about the role of communication in organisational performance and hybrid organisational structure and culture.

The second theory is Social Exchange Theory (Blau, 1964) which assumes that people's interactions are based on giving and receiving (reciprocity). For example, a leader's 'investment' (support, help, recognition, and developmental assistance) results in a follower's reciprocal behaviour (e.g., exchange of knowledge). The theory is applied to leadership by postulating that leadership behaviour is a form of investment in the follower, and, therefore, reciprocal behaviour from the follower are likely to be a function of the followers' perception of such investment. It also highlights the mechanism by which organizational performance could be a function of leader-follower exchanges. For instance, it could be argued that when the opportunity for 'investment and reciprocity' is limited as per the case of knowledge sharing, then digital knowledge-sharing capability is the 'mechanism' by which such a relationship would take place in the leader-follower relationship. In other words, there is a need for the leader to have appropriate digital knowledge-sharing capabilities to be able to get followers' reciprocity. Similarly, the follower needs the necessary digital knowledge-sharing resources to reciprocate the leader's behaviour. However, if such resources and opportunities were limited, such a relationship (reciprocal relationship that translates leadership behaviour into performance) would be difficult to realize. This theory, therefore, justifies the need for digital knowledge-sharing capability as a moderator and not a mediator of the relationship between transformational leadership and organizational performance.

he third theory is Dynamic Capabilities Theory (Teece, Pisano, & Shuen, 1997). This theory views organisational capabilities, including sensing opportunities, exploiting possibilities, and reconfiguring resources as important forces that underpin performance, particularly in changing environments. The ability to digitally share knowledge can fit within the ability to reconfigure as it involves continuous rearrangements of an entity's knowledge and communication resources to meet the demands of a hybrid work environment, where employees are no longer working together on a regular basis. This type of arrangement requires deliberate and carefully selected actions that help employees sense and share explicit and tacit knowledge using digital technology. Therefore, it is possible to argue that an entity's digital knowledge-sharing capability configures its leadership ability to shape performance outcomes. It fits the moderating role that this study wants to establish.

Finally, Organisational Climate for Innovation Theory (Ekvall 1996) introduces the perspective into the discussion, arguing that employee behaviour and organisational outcome is conditional "not only by leader-follower relationships but also by a climate in which risk-taking, communication and psychological safety are encouraged". The latter aspect is specifically pertinent to the hybrid organisational model due to reliance on virtual communication for establishing collective climate. In other words, employees' perception of the supportive/open organisational climate, which is positively associated with transformational leadership, is strongly informed by their ability to engage in digital exchanges. Overall, it is reasonable to structure the four arguments into a single conceptual model, postulating direct transformational leadership effect on organisational performance, with knowledge-sharing capability acting as a moderator. Such capability is both a conduit for bi-directional communication and a carrier of innovation climate, and its combined impact on employees who work predominantly from home in the Delhi-NCR region affects organisational performance.

2.2 Review of Empirical Studies (2016-2026)

A review of Scopus-indexed empirical studies published between 2016-26 provides partially consistent evidence on the links explored in this study. Pradhan et al. (2018) concluded that the contextual performance of Indian IT professionals significantly enhances by transformational leadership, and that this relationship is further shaped by employees' individual-level integrity, underscoring that Indian IT-sector performance outcomes are contingent on both leadership behaviour and follower-level moderating characteristics. Shahzad et al. (2022), studying large Chinese manufacturing firms, concluded that there is a positive and significant direct effect on firm performance by transformational leadership, this effect is partially transmitted through corporate sustainability, and, most importantly for the present study, that knowledge-sharing plays a significant positive moderating role in strengthening the relationship between transformational leadership and firm performance. Karimi et al. (2023) concluded that transformational leadership directly and positively predicts employees' innovative work behaviour in public-sector organisations, with hope and self-efficacy serving as significant partial mediators, while resilience and optimism did not significantly mediate the relationship, suggesting that not all psychological mechanisms transmit leadership's effects equally. Nguyen and Sharma (2024) concluded that transformational leadership enhances online knowledge sharing indirectly through job autonomy and job engagement in professional service firms, establishing that digital knowledge exchange is itself responsive to leadership-driven job design. Keppler and Leonardi (2023) concluded that hybrid and remote employees possess fewer strong workplace relationships than co-located employees, and that deliberate use of digital technologies is required to rebuild the relational confidence necessary for effective knowledge sharing in distributed work arrangements. Vu et al. (2025) concluded that transformational leadership shapes innovative work behaviour through the sequential mediating roles of psychological empowerment and work engagement, reinforcing a follower-centred understanding of how leadership effects are transmitted. Kim and Yoon (2025), examining hybrid-working contexts, concluded that empowering leadership enhances adaptive performance through the serial mediating effects of knowledge sharing and employee agility, demonstrating that hybrid work environments require leaders to deliberately delegate autonomy in order to sustain performance outcomes that face-to-face supervision previously secured directly (Kim and Yoon, 2025). In a related study of Korean IT corporations, Kim and Yoon (2025) concluded that transformational leadership positively affects employee innovative behaviour through the dual mediating pathways of psychological capital and thriving at work, noting that internal digital collaboration platforms have become central to how leadership influence is transmitted in technology-intensive, geographically dispersed teams (Kim & Yoon, 2025). Finally, Zielińska et al. (2026) concluded that both transformational and shared leadership significantly influence employee performance and intention to leave among IT knowledge workers, with communication quality and organisational commitment serving as significant mediating mechanisms, confirming that IT-sector knowledge workers represent a distinct population whose performance outcomes are especially sensitive to communication-dependent processes. Taken together, these conclusions consistently affirm a positive transformational leadership-performance relationship while pointing to knowledge sharing, whether digital or interpersonal, as a recurring but inconsistently modelled mechanism, thereby reinforcing the theoretical rationale for testing digital knowledge-sharing capability explicitly as a moderator in the present study.

2.3 Hypothesis Development

Transformational Leadership and Organisational Performance

The relationship between transformational leadership and organisational performance has been one of the most supported theories in the body of literature on leadership. Shahzad et al. provided direct evidence through SEM analysis on the positive influence of transformational leadership on organisational performance, while Pradhan et al. (2018) revealed that transformational leadership has a significant positive influence on contextual performance of Indian IT workers, which is arguably a closely related population to the one considered in this paper (Delhi-NCR's IT industry workers). Kim and Yoon (2025) explored the relationship between transformational leadership and innovative behaviours in the IT industry and established that transformational leadership predicted IT workers' innovative performance positively even when mediated by psychological mechanisms, while Vu, Nguyen, and Le (2025) and Karimi et.al (2023) also provided direct evidence of a significant relationship between transformational leadership and innovative performance (for different populations and contexts). With

transformational leadership being theorized (Transformational Leadership Theory: Bass, 1985; Bass & Avolio, 1994) and later supported in practice (e.g., Social Exchange Theory: Blau, 1964) to drive positive and reciprocal exchange relations, including extra-role performance, even with hybrid modes of work (which limit face-to-face interaction), transformational leadership is likely to have a significant positive relationship with organisational performance of hybrid-working employees as well. Thus, the following hypothesis is proposed:

H1: Transformational leadership has a significant positive relationship with organisational performance of hybrid-working employees in Delhi-NCR's IT industry.

Moderating Role of Digital Knowledge-Sharing Capability

While the direct transformational leadership-performance relationship is well established, the boundary conditions under which this relationship strengthens or weakens remain comparatively under examined, particularly with respect to digital knowledge-sharing capability. Shahzad et al. (2022) demonstrated that knowledge-sharing practices moderate the association between transformational leadership and organisational performance. In particular, the study revealed that the mediating role of knowledge sharing is not linear but rather curvilinear. In other words, the impact of transformational leadership practices on organisational performance can be intensified through enhanced knowledge-sharing mechanisms within the organisation. Secondly, Keppler and Leonardi (2023) discovered that hybrid and remote employees experience relational dilution that reduces their capacity for knowledge exchange, which is only offset when the employer implements digital tools that rebuild relational confidence. Thus, the study suggests that the capacity of leadership to drive performance outcomes is contingent upon the digital maturity of knowledge-sharing processes within the organisation. Thirdly, Nguyen and Sharma (2024) revealed that digital tools facilitate knowledge sharing through different mechanisms (job autonomy and engagement) compared to personal interaction (job involvement). Therefore, the study highlights the importance of conceptualising digital knowledge-sharing capability as a distinct phenomenon from overall knowledge-sharing culture and practices. In particular, the former should be considered as a dynamic capability (based on Teece et al., 1997) that determines how transformational leadership can drive organisational performance when employees are not working in close proximity. . On this basis, the following hypothesis is proposed:

H2: Digital knowledge-sharing capability significantly moderates the relationship between transformational leadership and organisational performance, such that the relationship is strengthened when digital knowledge-sharing capability is high and weakened when it is low.

2.4 Proposed Theoretical Framework

Figure 1 below represents the proposed framework of the study. The framework shows transformational leadership as the independent variable which has a positive direct influence on the dependent variable, organizational performance, hypothesized by H1, which is in line with previous studies conducted by Shahzad et al. (2022) and Pradhan et al. (2018). Digital knowledge-sharing capability is positioned not along this direct path but as a moderating variable acting on the strength of the transformational leadership-organisational performance relationship (H2), reflecting the theoretical logic drawn from Social Exchange Theory and Dynamic Capabilities Theory that an organisation's digital knowledge infrastructure conditions, rather than transmits, the effect of leadership behaviour on performance outcomes. This moderated (rather than mediated) structure is deliberately chosen to depart from the mediation-dominant models common in the existing literature (e.g., Nguyen & Sharma, 2024; Vu, Nguyen, & Le, 2025) and instead test whether the same transformational leadership behaviour produces systematically different organisational performance outcomes depending on the strength of digital knowledge-sharing capability. The entire framework is further anchored within the specific study context of hybrid-working employees in the Delhi-NCR IT sector, a boundary condition that is expected to make the moderating role of digital infrastructure particularly salient, given that hybrid arrangements have measurably eroded the face-to-face channels through which transformational leadership traditionally exerted its influence (Keppler & Leonardi, 2023).

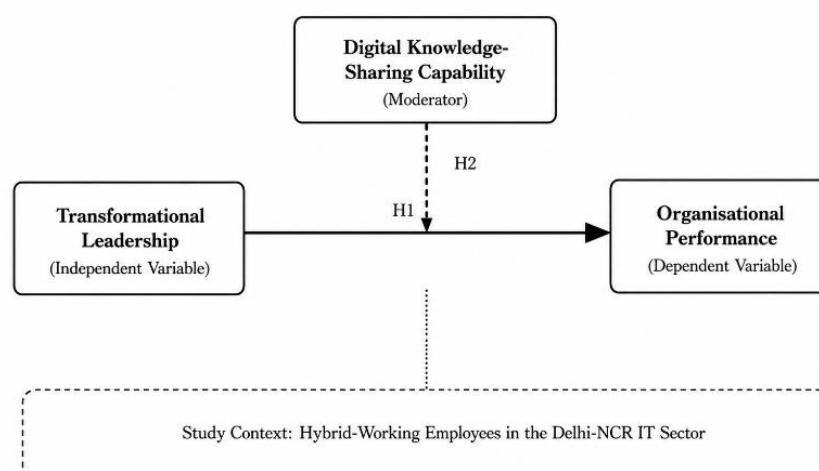


Figure 1. Proposed theoretical framework: The moderating role of digital knowledge-sharing capability on the relationship between transformational leadership and organisational performance.

3. Research Methodology

3.1 Research Aim

The objective of this study is to evaluate the intervening effect of digital knowledge sharing capability on transformational leadership and organisational performance of hybrid-working employees in Delhi-NCR's IT industry. The paper will demonstrate whether transformational leadership has a direct impact on organisational performance. In addition, the work will establish if there is a differential relationship between transformational leadership and organisational performance depending on the level of the organisation's digital knowledge sharing infrastructure. By doing this, the work will contribute to providing realisable contextual knowledge about the hybrid-working knowledge economy, which has not been sufficiently explored by prior leadership research.

3.2 Research Design

This study adopts a quantitative and descriptive research design, appropriate for testing pre-specified hypotheses concerning the relationships among transformational leadership, digital knowledge-sharing capability, and organisational performance (Hair et al. 2019). A cross-sectional survey method is employed, whereby data are collected from respondents at a single point in time to describe the current state of these constructs among hybrid-working employees and to statistically test the proposed hypothesised relationships. The descriptive component enables the profiling of respondent demographics and construct-level tendencies, while the quantitative, hypothesis-testing component enables inferential analysis of the direct and moderating relationships proposed in the conceptual framework.

3.3 Sampling Design

The target population for this study comprises employees working in hybrid arrangements within information technology (IT) organisations located across the National Capital Region (NCR), encompassing Delhi, Gurugram, Noida, Faridabad, and Ghaziabad. Given the absence of a complete, accessible sampling frame of hybrid-working IT employees across the NCR, this study employs purposive (judgemental) sampling, a non-probability technique in which respondents are deliberately selected based on the researcher's judgement that they possess the specific characteristics relevant to the research objective, namely current employment in an IT organisation and active engagement in a hybrid work arrangement (Etikan et al. 2016). Purposive sampling is considered appropriate in organisational behaviour research of this kind because it allows the researcher to intentionally target information-rich respondents who can meaningfully speak to the constructs under investigation, rather than relying on random

selection from an undefined population. The sample size for this study is set at 220 respondents, determined using the widely applied rule of thumb in PLS-SEM and multivariate research that the minimum sample size should be at least ten times the largest number of indicators or items associated with any single construct in the structural model (Hair et al.2019).

3.4 Primary Data Collection

Primary data for this study were collected using a structured, self-administered online questionnaire designed and distributed through Google Forms, a widely used platform for survey-based organisational research due to its accessibility, cost-effectiveness, and ability to reach geographically dispersed respondents efficiently (Wright, 2005). The survey link was distributed to hybrid-working employees across IT organisations in the Delhi-NCR region through professional networking platforms, official organisational email groups, and referrals from human resource contacts within participating firms, consistent with purposive sampling logic. The questionnaire began with a brief introductory note explaining the purpose of the study, the voluntary nature of participation, and an assurance of anonymity and confidentiality, followed by a screening question confirming that the respondent was currently employed in an IT organisation within the NCR and was working under a hybrid arrangement. Responses were collected within a specified data collection period, and the validation features of the Google Forms platform (mandatory response settings and single submission limitation per respondent) were utilized to ensure response quality and avoid missing data, as well as response duplication. Once the survey was closed, the responses were exported into a spreadsheet, and those with straight-lined data, missing responses, and failed attention checks were removed, resulting in the final dataset.

3.5 Development of the Research Instrument

The research instrument was developed by adapting well-validated, previously published scales for each construct rather than generating new items, consistent with established scale development guidance that recommends grounding new measurement in psychometrically validated prior instruments before introducing contextual modifications (Churchill, 1979). Transformational leadership was measured using 20 items adapted from the Multifactor Leadership Questionnaire (MLQ) framework developed by Bass and Avolio (1994), capturing the four established dimensions of idealised influence, inspirational motivation, intellectual stimulation, and individualised consideration. Digital knowledge-sharing capability was measured using items adapted from established knowledge-sharing and knowledge-management capability scales (Nguyen & Sharma, 2024), modified to explicitly reference digital platforms, virtual collaboration tools, and online repositories, in order to capture the platform-mediated nature of knowledge exchange emphasised in hybrid work contexts (Keppler & Leonardi, 2023) comprising of 22 statements. Organisational performance was measured using a multi-item scale capturing both operational and innovation-related performance indicators, consistent with the firm-performance measurement approach used by Shahzad et al. (2022) comprises of 10 statements. All items were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), and the questionnaire was pilot-tested with a small sample of hybrid-working IT professionals prior to full-scale distribution to assess item clarity, face validity, and completion time, with minor wording refinements made based on pilot feedback before the instrument was finalised for full data collection.

3.6 Statistical Methods for Data Analysis and Hypothesis Testing

Data analysis is conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM), which serves as the sole analytical technique for testing both the measurement model and the structural model, given its suitability for complex models, moderate sample sizes, and constructs measured through both formative and reflective indicators (Hair et al. 2019). The analysis proceeds in two stages. In the first stage, the measurement model is assessed for reliability and validity using indicator loadings, Cronbach's alpha, composite reliability, and average variance extracted (AVE), with the Heterotrait-Monotrait (HTMT) ratio used to establish discriminant validity between constructs. Because all data are collected through a single self-administered survey, common method bias is assessed using Harman's single-factor test and a full collinearity variance inflation factor (VIF) check, following recommended procedural and statistical remedies for single-source survey data (Podsakoff et al. 2003). In the second stage, the structural model is estimated using a bootstrapping procedure with 5,000 resamples

to test the significance of the direct path from transformational leadership to organisational performance (H1) and the moderating interaction effect of digital knowledge-sharing capability on this relationship (H2). Model fit and predictive relevance are evaluated using the coefficient of determination (R^2), effect size (f^2), and the Stone-Geisser predictive relevance measure (Q^2), with path coefficients, t-statistics, and p-values reported for each hypothesised relationship to determine statistical support (Hair, Risher, Sarstedt, & Ringle, 2019).

4. Data Analysis and Interpretation

This section provides the results of the conducted empirical analysis necessary to validate the hypothesised relationships between transformational leadership, digital knowledge-sharing capability, and organisational performance of hybrid-working employees in the Delhi-NCR IT industry. The data was collected using an online survey with 220 respondents and analysed using the Partial Least-Squares Structural Equation Modelling (PLS-SEM). The Mode A (reflective), path-weighting-scheme algorithm was applied following the general procedure (Hair et al., 2019). In particular, the moderating role of digital knowledge-sharing capability was tested using two-stage analysis, where scores that were first estimated without considering the interaction, and the standardized product-indicator term, which was added to the structural model (Henseler & Chin, 2010). This section is structured according to the five main stages of analysis: respondent description and data description, reliability and validity assessment, assessment of common method bias, structural model assessment, and discussion and evaluation of results.

4.1 Respondent Profile

Table 1 contains the demographic information on the 220 participants that were selected for the final analysis. The participants were selected via purposive sampling from hybrid-working employees in IT organisations in the Delhi-NCR region.

Table 1. Demographic Profile of Respondents (N = 220)

Category	Group	Frequency	Percentage
Gender	Male	129	58.6%
	Female	87	39.5%
	Prefer not to say	4	1.8%
Age Group	21-25	32	14.5%
	26-30	55	25.0%
	31-35	58	26.4%
	36-40	42	19.1%
	41-45	25	11.4%
	Above 45	8	3.6%
Education	Graduate	87	39.5%
	Postgraduate	116	52.7%
	Doctorate	6	2.7%
	Other	11	5.0%
Work Experience	Less than 2 years	26	11.8%
	2-5 years	69	31.4%

	6-10 years	65	29.5%
	11-15 years	40	18.2%
	More than 15 years	20	9.1%
Organisation Tenure	Less than 1 year	24	10.9%
	1-3 years	90	40.9%
	4-6 years	58	26.4%
	7-10 years	29	13.2%
	More than 10 years	19	8.6%
Designation Level	Junior/Entry-level	61	27.7%
	Middle/Executive	77	35.0%
	Senior/Managerial	63	28.6%
	Leadership/Director and above	19	8.6%
Office Days per Week	1 day	56	25.5%
	2 days	88	40.0%
	3 days	49	22.3%
	4 days	27	12.3%

A significant amount of the sample is skewed towards men (58.6%), while a considerable portion accounts for women (39.5%). As such, the sample can be considered diverse enough in terms of gender, as an equal ratio would only be found in the middle of employee groups of the Indian IT industries. In terms of age distribution, the number of people who are in the 26-40 range dominates the pool by a considerable amount (70.5%). In regard to education, most respondents (52.7%) hold postgraduate degrees. Experience-wise, the sizeable portion of respondents (60.9%) have some work experience within the 2-10 years range, while over two-thirds (67.3%) of them have been employed at their present organisation for 1-6 years. Finally, concerning the hierarchy level, most respondents are in the junior, middle, and senior levels, while a considerable a portion holds executive positions. Furthermore, most respondents (40.0%) work at the office only two days per week, which implies that the majority do not work from company premises regularly. Therefore, the sample was obtained in accordance with the population.

4.2 Descriptive Statistics

Table 2. Descriptive Statistics of Study Constructs

Construct	No. of Items	Mean	SD	Min	Max
Transformational Leadership (TL)	20	3.457	0.564	2.10	4.70
Digital Knowledge-Sharing Capability (DKSC)	22	3.349	0.494	2.00	4.50
Organisational Performance (OP)	10	3.475	0.573	2.00	4.90

Table 2 presents the descriptive statistics for the three main constructs, computed as respondent-level mean scores across each construct's items. All three constructs show mean scores above the scale midpoint of 3.00, indicating that respondents, on average, perceive moderately favourable levels of transformational leadership, digital

knowledge-sharing capability, and organisational performance within their organisations. The standard deviations (ranging from 0.494 to 0.573) indicate reasonable variability in responses across the sample, supporting the suitability of the data for testing hypothesised relationships.

4.3 Measurement Model Assessment

Prior to testing the structural relationships, the measurement model was assessed for internal consistency reliability, convergent validity, and discriminant validity, following the two-step approach recommended for PLS-SEM (Hair, Risher, Sarstedt, & Ringle, 2019).

Internal Consistency Reliability and Convergent Validity

Table 3. Reliability and Convergent Validity

Construct	No. of Items	Cronbach's Alpha	Composite Reliability (CR)	AVE
Transformational Leadership	20	0.948	0.953	0.504
Digital Knowledge-Sharing Capability	22	0.928	0.935	0.699
Organisational Performance	10	0.902	0.919	0.533

Table 3 shows that all three constructs exceed the recommended threshold of 0.70 for Cronbach's alpha and composite reliability (CR), confirming strong internal consistency reliability (Hair, et al. 2019). Average Variance Extracted (AVE) values for Transformational Leadership (0.504) and Organisational Performance (0.533) exceed the 0.50 threshold, confirming adequate convergent validity.

Discriminant Validity

Table 4. Fornell-Larcker Criterion

Construct	TL	DKSC	OP
Transformational Leadership	0.710	0.367	0.571
Digital Knowledge-Sharing Capability	0.367	0.630	0.368
Organisational Performance	0.571	0.368	0.730

Table 5. Heterotrait-Monotrait (HTMT) Ratio

Construct Pair	HTMT Ratio
Transformational Leadership ↔ Digital Knowledge-Sharing Capability	0.386
Transformational Leadership ↔ Organisational Performance	0.606
Digital Knowledge-Sharing Capability ↔ Organisational Performance	0.387

Discriminant validity was assessed using both the Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio. Table 4 shows that the square root of each construct's AVE (reported on the diagonal) exceeds its correlations with other constructs (reported off-diagonal), satisfying the Fornell-Larcker criterion. Table 5 confirms that all HTMT ratios fall well below the conservative threshold of 0.85 (Henseler, Ringle, & Sarstedt, 2015), with the highest ratio observed between Transformational Leadership and Organisational Performance (0.606). Together, these results confirm that the three constructs are empirically distinct from one another.

4.4 Common Method Bias Assessment

Because all constructs were measured using a single, self-administered survey instrument, common method bias (CMB) was assessed using Harman's single-factor test. An unrotated principal component analysis of all 52 items extracted a first factor accounting for 29.2% of the total variance, which is well below the 50% threshold conventionally used to indicate a serious common method bias problem (Podsakoff et al. 2003). This indicates that common method bias is probably not a problem in this study.

4.5 Structural Model Assessment

After establishing the measurement model, the structural model was estimated to evaluate the hypothesised direct and moderating relationships. The coefficient of determination (R^2), effect size (f^2) and predictive relevance (Q^2) were calculated for the endogenous construct, Organisational Performance.

Coefficient of Determination (R^2) and Predictive Relevance (Q^2)

Table 6. R^2 , Adjusted R^2 , and Q^2 for Organisational Performance

Endogenous Construct	R^2	Adjusted R^2	Q^2
Organisational Performance	0.396	0.388	0.379

Table 6 presents the PLS-SEM results, indicating that the model explains 39.6% of the variance in Organisational Performance ($R^2 = 0.396$, adjusted $R^2 = 0.388$), which is a reasonable value for an outcome variable reflecting behavioural intention and attitude (Hair, Risher, Sarstedt, & Ringle, 2019). Meanwhile, the Q^2 value of 0.379, which was computed using a 10-fold cross-validated redundancy procedure as an approximation of the blindfolding-based Q^2 typically reported by PLS-SEM software, is also greater than zero, suggesting that the model has reasonable predictive relevance for Organisational Performance.

Effect Size (f^2)

Table 7. Effect Size (f^2) of Structural Paths

Structural Path	f^2	Effect Size
Transformational Leadership → Organisational Performance	0.341	Large
Digital Knowledge-Sharing Capability → Organisational Performance	0.050	Small
TL × DKSC (Interaction) → Organisational Performance	0.069	Small-to-Medium

Table 7 presents the effect sizes (f^2) of each structural path, which were evaluated using Cohen's (1988) criteria of 0.02 (small), 0.15 (medium), and 0.35 (large). Transformational leadership was found to have a large effect on organisational performance, thus establishing it as the key predictor. The direct effect of digital knowledge-sharing capability was small, whereas its indirect effect (i.e., the moderating effect) was between medium and small, suggesting that it substantially influenced the relationship between transformational leadership and organisational performance.

4.6 Hypothesis Testing

Table 8. Results of Hypothesis Testing (Bootstrapping, 5,000 Resamples)

Hypothesis	Relationship	β	SE	t-value	p-value	Decision
H1	TL → Organisational Performance	0.489	0.046	10.53	< .001	Supported
H2	TL × DKSC → Organisational Performance (moderation)	0.204	0.052	3.94	< .001	Supported

Table 8 below contains the results for the hypotheses tests, each of which was done using bootstrap with 5000 resampling iterations. The bootstrapped results for Hypothesis 1, which stated that transformational leadership is positively related to organisational performance, are positive and significant ($\beta=0.489$; $t=10.53$; $p<.001$). Thus, it can be concluded that H1 is supported. Transformational leadership practices lead to enhanced organisational performance, which echoes the results from the IT and knowledge-based industries (Shahzad, Iqbal, Jan, & Zahid, 2022; Pradhan, Jena, & Bhattacharyya, 2018). As for Hypothesis 2, its bootstrapped results are also positive and significant ($\beta=0.204$; $t=3.94$; $p<.001$), meaning that digital knowledge-sharing capability positively moderates the association between transformational leadership and organisational performance. This means that H2 is supported too. Indeed, the moderating influence of knowledge-sharing on transformational leadership and firm performance was previously reported in the literature, and Shahzad et al. (2022) found that this influence was particularly strong in the context of the IT industry.

To further interpret the significant interaction effect, simple slope analysis was conducted at low (-1 SD), mean, and high (+1 SD) levels of digital knowledge-sharing capability. The simple slope of transformational leadership on organisational performance was 0.285 at low levels of digital knowledge-sharing capability, 0.489 at the mean level, and 0.693 at a high level. Thus, the positive influence of transformational leadership on organisational performance is stronger at higher levels of digital knowledge-sharing capability. This finding provides substantive evidence for the hypothesised moderation: hybrid-working employees in organisations with a strong digital knowledge-sharing infrastructure benefit more from transformational leadership in terms of performance outcomes compared to peers in organisations with a weak digital knowledge-sharing infrastructure.

4.7 PLS-SEM Path Diagram

Figure 2 below presents the estimated PLS-SEM model which contains the measurement model (outer loadings for each indicator) and the structural model (path coefficients, their t-values and R^2) in a graphical format typically used for presenting such models. In this format, latent constructs are depicted as circles and observed indicators as rectangles.

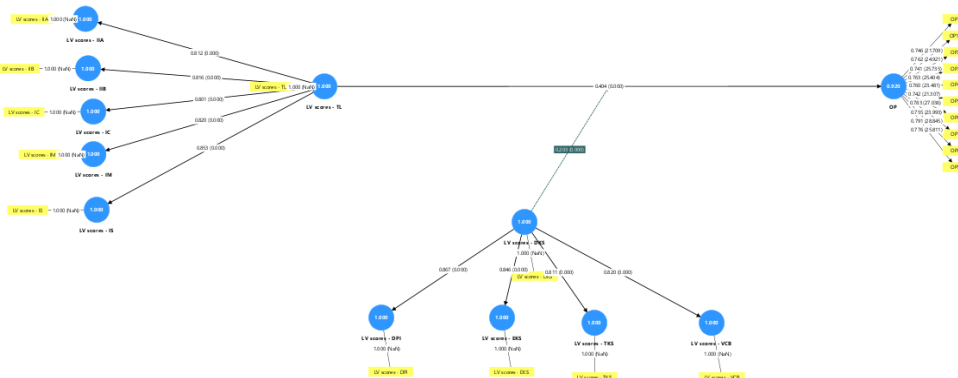


Figure 2. PLS-SEM Structural and Measurement Model with Path Coefficients, Loadings, and R^2 (N = 220)

The diagram confirms the results presented in Tables 3 and 8, as all indicator loadings for Transformational Leadership, Digital Knowledge-Sharing Capability, and Organisational Performance are above or close to the recommended level of 0.60-0.70 for reflective indicators (Hair et al. 2019), the direct effect of Transformational Leadership on Organisational Performance is positive and highly significant ($\beta = 0.489$), and the interaction effect

of Transformational Leadership and Digital Knowledge-Sharing Capability on Organisational Performance is positive and significant ($\beta = 0.204$), which confirms the moderating hypothesis H2.

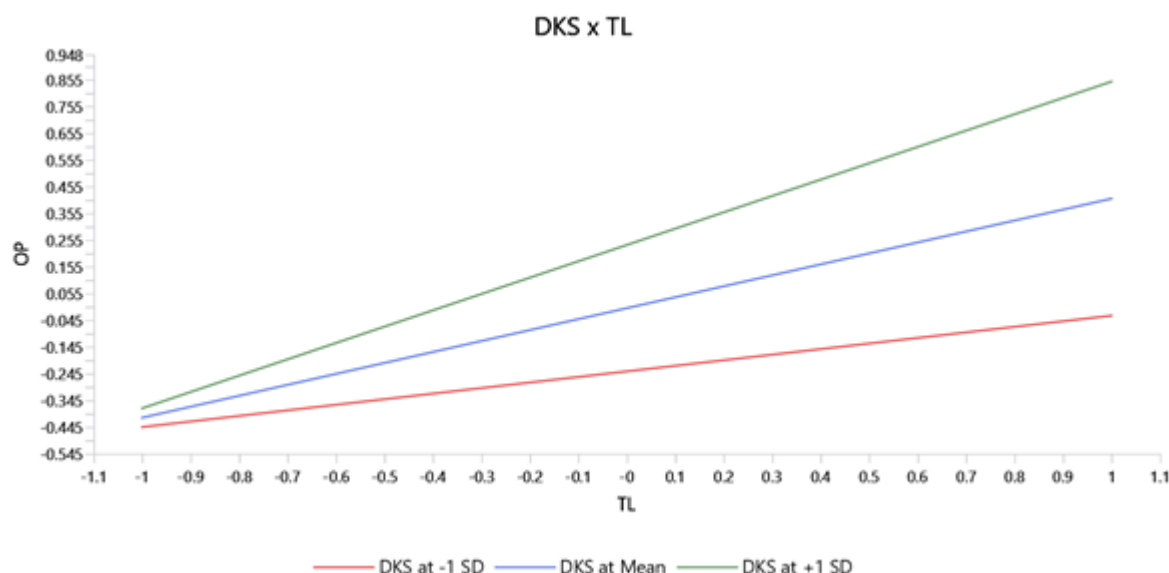


Figure 3: Simple Slope Analysis

Figure 3 depicts the simple slope analysis of the moderating role of DKS on the relationship between Transformational Leadership and Organizational Performance. It can be observed that Transformational Leadership positively predicted Organizational Performance in the four levels of DKS although the prediction was stronger in upper levels (DKS +1 SD) compared to the mean and lower levels. This result shows that DKS moderated the relationship between Transformational Leadership and Organizational Performance, therefore explaining the proposed interaction.

4.8 Summary of Findings

In summary, the PLS-SEM results provide robust empirical support for both hypotheses advanced in this study. Transformational leadership exerts a strong, statistically significant, positive direct effect on organisational performance among hybrid-working employees in the Delhi-NCR IT sector (H1 supported). Furthermore, digital knowledge-sharing capability significantly moderates this relationship, such that organisations with stronger digital knowledge-sharing infrastructure realise a substantially stronger transformational leadership-performance relationship than those with weaker digital knowledge-sharing capability (H2 supported). These findings, and their theoretical and managerial implications, are discussed in the sections that follow.

5. Academic Implications

This study offers several academic implications for the transformational leadership and knowledge management literatures. First, by empirically confirming that digital knowledge-sharing capability significantly moderates, rather than merely mediates, the transformational leadership-organisational performance relationship, the study extends existing knowledge-sharing models (Nguyen & Sharma, 2024) and directly builds on the moderation logic first demonstrated by Shahzad et al. (2022), applying it for the first time to a hybrid-working IT population. Second, the study contributes to Social Exchange Theory (Blau, 1964) by demonstrating that digital infrastructure functions as a reciprocity channel through which transformational leadership's motivational effects are converted into performance outcomes, addressing calls to examine how digital platforms reshape leader-follower exchange under hybrid work (Keppler & Leonardi, 2023). Third, the findings extend Transformational Leadership Theory (Bass & Avolio, 1994) into a boundary condition, hybrid work, that its original formulation did not anticipate,

responding to calls for contextualised leadership research (Pradhan et al., 2018). Fourth, the study contributes methodologically by applying the two-stage PLS-SEM moderation approach (Henseler & Chin, 2010) within an Indian IT-sector setting, an approach still underused in South Asian organisational behaviour research. Collectively, the contributions identified above allow to position the ability to leverage technology for knowledge sharing within the realm of exchangeability, thus developing an alternative theory of transformational leadership in digital-hybrid organisational settings, as well as providing a foundation for further studies of other digital capabilities as moderators of the links between leadership and organisational outcomes.

6. Managerial Implications

The outcomes of this research can be related to various implications for managers and human resource leaders within the Delhi-NCR IT sector. Firstly, as transformational leaders play a critical role in determining organisational performance, organisations should consider designing and implementing leadership development programs focused on training line leaders to embody idealised influence, inspirational motivation, intellectually stimulating behaviour, and individualised consideration when supervising hybrid teams (Bass & Avolio, 1994). Since hybrid work arrangements limit physical interaction, transformational leaders need training in utilising digital mediums to demonstrate the aforementioned attributes. Secondly, as the study reveals the moderating role played by digital knowledge-sharing capability in the relationship between transformational leadership and organisational performance, organisations should invest more in providing technological tools and artificial intelligence solutions to facilitate effective collaborative knowledge-creation and -sharing among employees as an extension of transformational leadership, as it can enhance the returns reaped by the organisation from transformational leadership (Shahzad et al. 2022). Thirdly, managers must endeavour to foster a digital knowledge-sharing culture amongst employees so that hybrid workers can actively participate in digitally mediated explicit and tacit knowledge exchange activities as a mechanism to mitigate the negative effects of reduced social interaction on collaborative knowledge-creation (Keppler & Leonardi, 2023). Fourthly, human resource managers should incorporate digital collaboration competency in the on boarding and performance appraisal processes of hybrid workers so that knowledge-sharing activities are rewarded within the system, thus reinforcing the desired behaviour (Nguyen & Sharma, 2024). Finally, based on the insights garnered from the analysis of Indian IT professionals' perceptions on hybrid work arrangements (Pradhan, Jena, & Bhattacharyya, 2018), the leaders of the Delhi-NCR IT sector should consider leveraging digital knowledge infrastructure and transformational leadership as complementary approaches to sustaining superior performance in the wake of the adoption of hybrid work arrangements.

7. Limitations and Future Research Directions

This study has several limitations that future research could build upon. Firstly, being a cross-sectional study, it could only capture a snapshot of the relationships between transformational leadership, digital knowledge-sharing capability, and organisational performance, thus limiting the ability to establish causality (Hair et al., 2019); future studies should be longitudinal to understand the nature of these relationships as hybrid work arrangements develop. Secondly, the study used a purposive sampling method to target hybrid-working IT employees, thus limiting the statistical representativeness of the findings (Etikan et al., 2016); future studies could use a probability sampling method to generalise the findings to Indian metro areas. Thirdly, being a survey-based study, the study relied on participants' memory and perception, thus raising concerns about common method bias, although the study controlled it to a reasonable extent (Podsakoff et al., 2003); future studies could use objective measures of performance or utilise multiple sources of data. Finally, the study only tested one moderator; future studies could test additional digital or organisational capabilities as moderators (Keppler & Leonardi, 2023) or use a serial moderated-mediation model. Finally, the findings are context-specific to the Delhi-NCR IT sector, and cross-industry or cross-regional replication would strengthen the generalisability of the moderating role identified here.

8. Conclusion

This study set out to examine the moderating role of digital knowledge-sharing capability on the relationship between transformational leadership and organisational performance among hybrid-working employees in the Delhi-NCR IT sector. Using PLS-SEM on data from 220 hybrid-working IT employees, the study found that transformational leadership significantly and positively predicts organisational performance, and that this relationship is significantly strengthened as digital knowledge-sharing capability increases. Both hypotheses were supported, confirming digital knowledge-sharing capability as a genuine boundary condition, rather than merely a transmission mechanism, linking leadership behaviour to organisational outcomes in hybrid work settings. These findings extend transformational leadership theory into a digitally mediated, hybrid-work boundary condition, and offer IT organisations a clear, evidence-based rationale for pursuing leadership development and digital knowledge infrastructure as complementary, rather than independent, investments. As the Indian IT industry embraces hybrid work models, the ability of organisations to balance strong leadership with effective digital knowledge-sharing strategies will define their success.

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