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Digital leadership, high performance work systems and psychological contract fulfilment in hybrid work environment in India

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Abstract
Purpose: This study examines how high-performance work systems (HPWS) and digital leadership shape employee outcomes in hybrid work. It uses psychological contract fulfilment as the explanatory mechanism and digital communication quality as the boundary condition.
Design/methodology/approach: A three-wave, multi-source survey was conducted with 512 hybrid employees across five sectors in India. Measures were separated by four-week lags, supervisors rated innovative work behaviour, and the model was estimated using PLS-SEM with 5,000 bootstrap resamples.
Findings: HPWS ($\beta = .391$, $p < .001$) and digital leadership ($\beta = .318$, $p < .001$) had a positive effect on psychological contract fulfilment and the structural model accounted for 52.9% of the variance in psychological contract fulfilment ($R^2 = .529$). Bootstrapped indirect effects showed significant partial mediation across all four outcomes, with 95 per cent bias-corrected confidence intervals excluding zero. Digital communication was a positive moderator between digital leadership and psychological contract fulfilment ($\beta = .112$, $p = .002$).
Originality/value: Drawing on AMO, leader-member exchange, psychological contract and social exchange perspectives, the study connects formal HR systems with digitally enacted leadership in hybrid work. It shows how psychological contract fulfilment links these organisational signals to employee outcomes and how communication quality helps make leadership intentions clear and credible.

Keywords: Communication climate, digital leadership, employee turnover, Leader-Member Exchange Theory, Social Exchange Theory, telework

Introduction

Hybrid work has moved from a temporary response to an established work arrangement. It combines on-site and digitally mediated work, but the balance between locations, schedules and modes of interaction varies across organisations (Lauring & Jonasson, 2025) [28]. Employees therefore experience the organisation through HR practices, leader behaviour, digital systems and intermittent face-to-face contact. The question is whether these signals establish a stable employment relationship when it comes to the locations of work.

Hybrid arrangements can lead to an increase in satisfaction and retention while not negatively impacting performance, but they can also decrease visibility, informal learning, and belonging and support (Bloom *et al*., 2024; Handke *et al*., 2024) [7]. Previous research on telecommuting also identified positive impacts on autonomy, job satisfaction and employee turnover outcomes, and suggested that the type and level of telecommuting is important (Gajendran & Harrison, 2007) [16]. Hybrid working models create structural frictions, such as split physical/digital work, and unequal access to information, visibility and organisational resources. Coulston *et al*. (2025) [13] identify communication quality, trust, knowledge sharing and adaptive leadership as important resources for virtual and hybrid teams, but evidence on the combined influence of HR systems, leadership and communication remains limited.

HPWS include staffing, training, appraisal, participation, rewards and career practices, which are all used to develop ability, motivation and opportunity (Appelbaum *et al*., 2000; Boxall & Macky, 2009; Jiang *et al*., 2012) [1, 8, 25]. The evidence on HPWS is largely based on the premise of regular co-location, even though these systems are associated with positive attitudes and performance. Participation and visibility, as well as training and feedback, may not be the same in all locations with hybrid work and therefore may not be equally supportive for employees. In this study the system is measured as a whole and not by attempting to estimate the three dimensions separately, using an existing global construct of HPWS.

Digital leadership is the direction, support and coordination of technology use and digitally mediated relationships (Avolio *et al*., 2014; Tigre *et al*., 2025; Zeike *et al*., 2019) [2, 43, 44]. Digital leadership enables enacting and interpreting of the formal organisational promises made in HPWS in employees' everyday hybrid interactions. Psychological contract fulfilment is the evaluation of whether perceived promises have been fulfilled by the organisation (Rousseau, 1989, 1995) [36]. Fulfilment leads to greater engagement and commitment and less withdrawal (Bal *et al*., 2008; Zhao *et al*., 2007) [3, 45].

Ambiguity can be reduced and trust can be built through clear, timely, consistent and responsive communication, but fragmented communication can result in a lack of coordination and credibility (Chang *et al*., 2014; Henderson *et al*., 2016; Marlow *et al*., 2017) [10, 21, 29]. The quality of digital communication is viewed as a boundary condition of digital leadership as enacting leadership is dependent on

real-time interactive communication media and formal HR practices are communicated through standardised communication channels.

This study combines them all into a single model: HPWS and digital leadership as complementary organisational signals; psychological contract fulfilment as the explanatory mechanism; and digital communication quality as a moderator. The Indian context is relevant because hybrid working takes place in organisations with varying digital maturity and infrastructure, while employee voice and interaction with supervisors may be influenced by hierarchy and power-distance orientation (Budhwar & Varma, 2011; Cooke *et al*., 2020; Pavitra & Sarikwal, 2023) [9, 12, 32]. Recent evidence from Indian IT employees also shows that managerial trust and satisfaction with communication channels matter for remote-work productivity (Satija & Bakshi, 2026) [38]. The research question is: How do HPWS and digital leadership affect engagement, innovative behaviour, commitment and turnover intention through psychological contract fulfilment, and when is digital leadership most effective?

Theoretical Background and Hypothesis Development

1. Hybrid Work as a Relational and Organisational Context

Due to schedule differences, technology and access to information, there can be inequitable access to information, networks and managerial attention (Handke *et al*., 2024; Raghuram *et al*., 2019) [7, 34].

Four theories have distinct roles in the model rather than serving as overlapping explanations. Ability-Motivation-Opportunity (AMO) theory explains how HPWS develop ability, motivation and opportunity (Appelbaum *et al*., 2000) [1]. Leader-Member Exchange theory explains support and trust in digitally mediated leader-employee relationships (Graen & Uhl-Bien, 1995) [17]. Psychological contract theory explains how employees judge whether perceived promises are fulfilled (Rousseau, 1995) [37], while Social Exchange Theory explains how those judgements are reciprocated through attitudes and behaviour (Blau, 1964; Cropanzano & Mitchell, 2005) [6, 14]. Together, the sequence runs from system resources and leadership enactment to employee interpretation and reciprocal outcomes.

2. High-Performance Work Systems and Psychological Contract Fulfilment

HPWS are treated as an integrated system rather than as isolated practices. Staffing communicates standards, training develops capability, appraisal and rewards provide recognition, and participation creates opportunities for involvement (Boxall & Macky, 2009; Jiang *et al*., 2012) [8, 25]. These practices are associated with commitment, engagement and retention (Kehoe & Wright, 2013; Takeuchi *et al*., 2007) [26, 41]. Although the practices map onto ability-, motivation- and opportunity-enhancing dimensions, the present model evaluates employees' overall perception of system consistency rather than estimating the AMO subdimensions separately.

When these practices are equally accessible across work locations, employees are more likely to see them as evidence that commitments concerning development, participation and recognition are being met. HR practices are more likely to communicate the fulfilment of promises (Nishii *et al*., 2008) [31] provided that employees do not perceive that HPWS is about exploiting or controlling them. Therefore:

H1: High-performance work systems are positively related to psychological contract fulfilment.

3. Digital Leadership and Psychological Contract Fulfilment

Digital leadership is a combination of technologically competent behaviours and relational and change-oriented behaviours. It includes leveraging the right channels, prioritising, remaining accessible, allowing experimentation and keeping people physically and digitally included (Avolio *et al*., 2014; Bellis *et al*., 2024; Tigre *et al*., 2025) [2, 5, 43].

High-quality leader relationships convey information, support and obligation (Graen & Uhl-Bien, 1995) [17]. Responsive and inclusive leaders ensure that promises of flexibility and support are more likely to be fulfilled, whereas delays, inconsistent promises and unequal visibility make fulfilment more difficult (Bell *et al*., 2023; Hill & Bartol, 2016) [4, 23]. Thus:

H2: Digital leadership is positively related to psychological contract fulfilment.

4. Psychological Contract Fulfilment and Employee Outcomes

When the psychological contract is met, the employment relationship is reliable. Employees who believe that obligations have been satisfied will be more likely to work harder and be more committed, while employees who believe that obligations have not been satisfied will be more likely to leave (Cropanzano & Mitchell, 2005; Zhao *et al*., 2007) [14, 45].

Work engagement comprises vigour, dedication and absorption (Schaufeli *et al*., 2006) [39]. Trust, fairness and predictability through fulfilment underpin the investment of energy in hybrid working when there are fewer informal cues. Therefore:

H3: Psychological contract fulfilment is positively related to work engagement.

Innovative work behaviour is the process of generating, promoting and implementing useful ideas (Janssen, 2000) [24]. Supporting psychological contract fulfilment can help build psychological safety and lower perceived risk of innovation failure. Accordingly:

H4: Psychological contract fulfilment is positively related to innovative work behaviour.

Organisational commitment is an attitude or feeling towards the organisation (Meyer *et al*., 1993) [30]. Fulfilment validates the organisation as a trustworthy exchange partner and increases the willingness to stay. Thus:

H5: Psychological contract fulfilment is positively related to organisational commitment.

Once obligations are fulfilled, the value and predictability of remaining are enhanced, whereas breach results in withdrawal (Bal *et al*., 2008; Zhao *et al*., 2007) [3, 45]. Therefore:

H6: Psychological contract fulfilment is negatively related to turnover intention.

5. Mediating Role of Psychological Contract Fulfilment

HPWS offer formal opportunities and rewards, and digital leadership implements support in day-to-day hybrid working. Both lead to a psychological contract fulfilment judgement that in turn impacts effort, innovation, attachment and withdrawal (Jiang *et al*., 2012; Nishii *et al*., 2008) [25, 31].

H7a-H7d: Psychological contract fulfilment partially mediates the relationships between HPWS and (a) work engagement, (b) innovative work behaviour, (c) organisational commitment and (d) turnover intention.

H8a-H8d: Psychological contract fulfilment partially mediates the relationships between digital leadership and the four outcomes.

6. Digital Communication Quality as a Boundary Condition

Digital communication quality is the clarity, timeliness, consistency, sufficiency and responsiveness of digitally mediated communication. Informational friction and cognitive strain may occur due to fragmented or excessive electronic communication (Chang *et al*., 2014; Henderson *et al*., 2016; Marlow *et al*., 2017; Tarafdar *et al*., 2019) [10, 21, 29, 42].

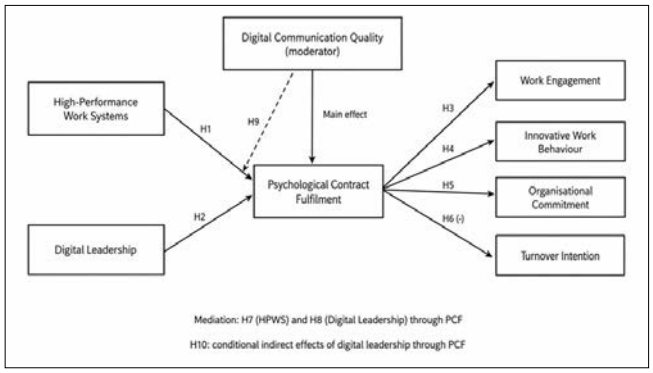
Digital leadership is enacted largely through communication, so leader intentions need to be clear and consistent if employees are to interpret them as credible promises. High-quality communication reduces ambiguity, records decisions and limits discrepancies between remote and office workers.

The moderator is placed on the digital leadership-fulfilment relationship because day-to-day leader support is directly linked to interaction, while formal HR processes can be more easily documented and standardised. Therefore:

H9: Digital communication quality positively moderates the relationship between digital leadership and psychological contract fulfilment such that the relationship is stronger as digital communication quality increases.

H10: The indirect effects of digital leadership on all four outcomes through psychological contract fulfilment are greater when digital communication quality is high.

7. Proposed Research Model



Note: PCF = psychological contract fulfilment.

Fig 1: Proposed research model

Method

1. Research Design and Setting

A three-wave, two-source design separated predictors, the mediator and outcomes over time, with supervisors rating innovative work behaviour. Eligible participants were Indian employees with at least six months' tenure who worked both remotely and on site each week and interacted digitally with a direct supervisor.

Twenty-six medium and large organisations from information technology, banking and financial services, consulting, education and healthcare were sampled across Bengaluru, Delhi-NCR, Hyderabad, Mumbai-Pune and Chennai, providing a multi-sector hybrid-work context.

2. Sampling and Data Collection

Of 732 eligible employees invited, Time 1 measured HPWS, digital leadership, communication quality and controls (n = 638); Time 2 measured fulfilment four weeks later (n = 574); and Time 3 measured engagement, commitment and turnover intention four weeks later (n = 529). A total of 204 supervisors rated innovative behaviour. Participation was voluntary, electronic informed consent was obtained, and waves and sources were linked by anonymous codes.

After excluding unmatched, incomplete and failed-attention records, 512 matched employee-supervisor cases remained (69.9 per cent of invitees). Missing data were below 0.7 per cent and were imputed using within-scale means when no more than one item was missing. Attrition tests found no major differences in participant characteristics. Power analysis indicated that 512 exceeded the minimum required sample of 172 (Faul *et al*., 2009) [15].

Table 1: Respondent profile (N = 512)

Characteristic	Category	n	%
Gender	Male	278	54.3
	Female	229	44.7
	Prefer not to state	5	1.0
Age	25 years or below	75	14.6
	26-35 years	236	46.1
	36-45 years	137	26.8
	46 years or above	64	12.5
Education	Bachelor's degree	276	53.9
	Master's degree	198	38.7
	Doctoral/professional degree	38	7.4
Sector	Information technology	145	28.3
	Banking and financial services	108	21.1
	Consulting/professional services	91	17.8
	Education	88	17.2
	Healthcare	80	15.6
Organisational tenure	6 months-2 years	141	27.5
	More than 2-5 years	191	37.3
	More than 5-10 years	121	23.6
	More than 10 years	59	11.5
Remote days per week	1 day	86	16.8
	2 days	218	42.6
	3 days	147	28.7
	4 or more days	61	11.9
Managerial status	Non-managerial	357	69.7
	Managerial	155	30.3

Note: Percentages may not add up to 100 due to rounding.

3. Measures

All constructs were measured using five-point agreement scales. Existing measures were adapted through minor wording changes to fit the hybrid-working context, reviewed by three HRM academics and four managers and piloted with 48 hybrid workers.

HPWS were evaluated using 15 employee-perception items covering staffing, training, appraisal, participation, rewards and career opportunity (Sun *et al*., 2007; Takeuchi *et al*., 2007; Kehoe & Wright, 2013) [26, 40, 41]. The items represented a global perceived-HPWS construct because the model concerns employees' overall experience of the HR system.

The six items from Zeike *et al*. (2019) [44] were adapted for employees' assessment of supervisors' digital leadership. Psychological contract fulfilment was assessed using five items from Robinson and Morrison (2000) [35].

Five items adapted from Chang *et al*. (2014) [10], Henderson *et al*. (2016) [21] and Marlow *et al*. (2017) [29] measured digital communication quality. The nine-item UWES (Schaufeli *et al*., 2006) [39] measured work engagement, nine items from Janssen's (2000) scale measured innovative work behaviour, six items from Meyer *et al*. (1993) [30] measured commitment and three items from Colarelli (1984) [11] measured turnover intention.

The control variables were age, gender, education, tenure, managerial position, sector and remote days.

Table 2: Constructs and measurement sources

Construct	Items	Primary source(s)	Example item
High-performance work systems	15	Sun *et al*. (2007) [40]; Takeuchi *et al*. (2007) [41]; Kehoe & Wright (2013) [26]	A broad range of opportunities for employees to develop.
Digital leadership	6	Zeike *et al*. (2019) [44]	My supervisor makes good use of digital tools to direct our work.
Psychological contract fulfilment	5	Robinson & Morrison (2000) [35]	The organisation has fulfilled the promises that it made to me.
Digital communication quality	5	Chang *et al*. (2014) [10]; Henderson *et al*. (2016) [21]; Marlow *et al*. (2017) [29]	My team has clear and timely communication.
Work engagement	9	Schaufeli *et al*. (2006) [39]	I'm really energised by my work.
Innovative work behaviour	9	Janssen (2000) [24]	This employee is able to galvanise support for new ideas.
Organisational commitment	6	Meyer *et al*. (1993) [30]	I have a sense of belonging to this organisation.
Turnover intention	3	Colarelli (1984) [11]	I have been thinking of quitting this organisation.

Note: Items were adapted for the hybrid-work context while keeping the meaning of the original constructs.

4. Analytical Strategy

Because the model emphasised prediction and included several endogenous constructs, mediation and moderation, PLS-SEM was conducted in SmartPLS 4 (Hair *et al*., 2022) [18]. Reflective measurement quality was assessed using loadings, alpha, rho_A, composite reliability, average variance extracted and HTMT, with a conservative HTMT threshold of .85 for discriminant validity (Henseler *et al*., 2015) [22].

The structural model was evaluated using collinearity, bootstrapped path coefficients, confidence intervals, effect sizes, explained variance and predictive relevance. Mediation was tested with 5,000 bootstrap resamples (Hayes, 2018) [20]. The standardised digital leadership × communication-quality interaction was estimated using the two-stage method, and simple slopes and conditional indirect effects were evaluated at one standard deviation below and above the moderator mean.

$$PCF_i = \beta_0 + \beta_1 HPWS_i + \beta_2 DL_i + \beta_3 DCQ_i + \beta_4 (DL_i \times DCQ_i) + \Sigma \beta_k Control_{ki} + \varepsilon_i \quad (1)$$

$$Y_{ji} = \alpha_{0j} + \alpha_{1j} PCF_i + \alpha_{2j} HPWS_i + \alpha_{3j} DL_i + \Sigma \alpha_{kj} Control_{ki} + \varepsilon_{ji} \quad (2)$$

$$\text{Conditional indirect effect } (DL \rightarrow Y_j)_i = (\beta_2 + \beta_4 DCQ_i) \times \alpha_{1j} \quad (3)$$

In equations (1-3), PCF represents psychological contract fulfilment, DL represents digital leadership, DCQ represents digital communication quality and Y represents work engagement, innovative work behaviour, organisational commitment or turnover intention for the individual respondent (i), and outcome of interest (j).

Common-method risk was minimised through temporal separation, supervisor-rated innovation, varied item order and confidentiality. Harman's test and full-collinearity VIFs were used only as supplementary diagnostics (Kock, 2015; Podsakoff *et al*., 2003) [27, 33].

Results

1. Preliminary Analysis and Descriptive Statistics

There was no significant non-normality in screening.

As expected, the variables were correlated. Fulfilment had the highest correlations with commitment (r = .65), HPWS (r = .62) and engagement (r = .61), and the strongest negative correlation was with turnover intention (r = -.58).

Table 3: Descriptive statistics and correlations

Construct	M	SD	1	2	3	4	5	6	7	8
1. HPWS	3.74	.63	1							
2. DL	3.81	.67	.56	1						
3. PCF	3.69	.71	.62	.59	1					
4. DCQ	3.88	.66	.44	.57	.52	1				
5. WE	3.82	.69	.51	.47	.61	.43	1			
6. IWB	3.67	.72	.42	.45	.48	.37	.46	1		
7. OC	3.76	.70	.54	.49	.65	.45	.58	.42	1	
8. TI	2.41	.88	-.46	-.42	-.58	-.39	-.52	-.34	-.61	1

Note: Correlations with absolute values of .11 or higher are significant at $p < .05$. DL = digital leadership; PCF = psychological contract fulfilment; DCQ = digital communication quality; WE = work engagement; IWB = innovative work behaviour; OC = organisational commitment; TI = turnover intention.

2. Measurement Model

All standardised loadings were significant, ranging from .708 to .899. Alpha (.886-.928), rho_A (.891-.931), composite reliability (.918-.940) and AVE (.568-.747) met accepted thresholds.

The range of HTMT was .361 to .835 and was below .85. The highest value was between fulfilment and commitment, but cross-loadings confirmed that the constructs were distinct.

Furthermore, the results of bootstrapped HTMT inference showed that the discriminant validity was met. The highest of the maximum HTMT values was in the range [.762, .848]

and the 95% bias corrected confidence interval between psychological contract fulfilment and organisational commitment. The upper confidence bound was still under the conservative .85 criterion, thus supporting the empirical distinctiveness of the two constructs.

Table 4: Reliability and convergent validity

Construct	Loading range	Alpha	rho_A	CR	AVE
HPWS	.708-.846	.928	.931	.940	.568
Digital leadership	.752-.874	.901	.906	.925	.674
Psychological contract fulfilment	.815-.892	.913	.916	.935	.742
Digital communication quality	.783-.861	.889	.894	.918	.691
Work engagement	.793-.883	.920	.923	.938	.716
Innovative work behaviour	.768-.872	.906	.911	.929	.686
Organisational commitment	.820-.887	.915	.919	.936	.744
Turnover intention	.823-.899	.886	.891	.922	.747

Note: Alpha = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted.

Table 5: Heterotrait-monotrait ratios

Construct	HPWS	DL	PCF	DCQ	WE	IWB	OC	TI
HPWS	-							
DL	.648	-						
PCF	.719	.694	-					
DCQ	.512	.681	.611	-				
WE	.594	.548	.728	.501	-			
IWB	.486	.523	.563	.421	.531	-		
OC	.632	.571	.835	.522	.688	.483	-	
TI	.518	.479	.704	.452	.621	.391	.731	-

Note: DL = digital leadership; PCF = psychological contract fulfilment; DCQ = digital communication quality; WE = work engagement; IWB = innovative work behaviour; OC = organisational commitment; TI = turnover intention.

3. Structural Model and Direct Effects

Inner VIFs ranged from 1.31 to 2.78. Model indices were acceptable (SRMR = .058; NFI = .912; RMS_theta = .109). The R^2 values for fulfilment, engagement, innovation, commitment and turnover intention were 52.9 per cent, 38.6 per cent, 29.2 per cent, 43.1 per cent and 35.4 per cent respectively, and all Q^2 values were positive.

HPWS ($\beta = .391$, $p < .001$) and digital leadership ($\beta = .318$, $p < .001$) positively predicted fulfilment, supporting H1 and H2. In addition, a positive main effect for communication quality ($\beta = .174$, $p < .001$) was found.

Fulfilment positively predicted engagement ($\beta = .554$), innovative behaviour ($\beta = .443$) and commitment ($\beta = .603$), and negatively predicted turnover intention ($\beta = -.536$); all p-values were below .001. H3-H6 were therefore supported.

Table 6: Structural model quality

Endogenous construct	R^2	Adjusted R^2	Q^2	Main f^2 range
Psychological contract fulfilment	.529	.521	.371	.122-.184
Work engagement	.386	.374	.271	.021-.443
Innovative work behaviour	.292	.278	.188	.017-.246
Organisational commitment	.431	.419	.309	.013-.552
Turnover intention	.354	.341	.246	.015-.405

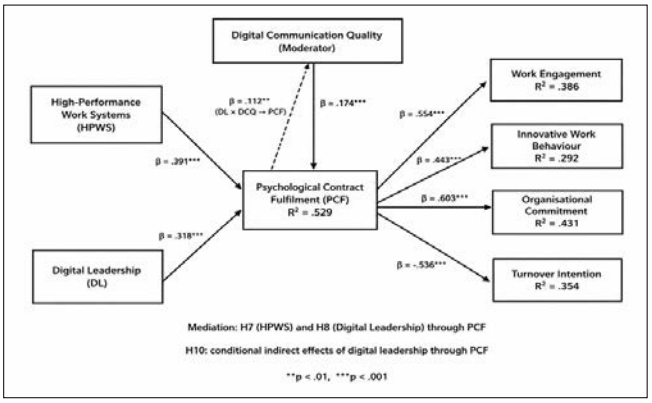
Note: Q^2 values above zero indicate predictive relevance. The f^2 ranges include focal direct predictors.

Table 7: Direct effects

Hypothesis/path	β	SE	t	p	95% CI	Decision
H1: HPWS -> PCF	.391	.040	9.84	<.001	[.313, .469]	Supported
H2: DL -> PCF	.318	.040	7.92	<.001	[.240, .397]	Supported
DCQ -> PCF	.174	.040	4.35	<.001	[.096, .252]	Main effect
H3: PCF -> WE	.554	.038	14.70	<.001	[.480, .627]	Supported
H4: PCF -> IWB	.443	.043	10.31	<.001	[.359, .527]	Supported
H5: PCF -> OC	.603	.035	17.02	<.001	[.534, .671]	Supported
H6: PCF -> TI	-.536	.038	14.13	<.001	[-.610, -.461]	Supported
HPWS -> WE	.169	.055	3.07	.002	[.062, .277]	Significant
HPWS -> IWB	.128	.052	2.44	.015	[.027, .230]	Significant
HPWS -> OC	.181	.054	3.35	.001	[.076, .287]	Significant
HPWS -> TI	-.146	.053	2.74	.006	[-.249, -.042]	Significant
DL -> WE	.118	.050	2.35	.019	[.020, .216]	Significant
DL -> IWB	.231	.049	4.71	<.001	[.135, .327]	Significant
DL -> OC	.094	.048	1.98	.048	[.001, .188]	Significant
DL -> TI	-.105	.049	2.16	.031	[-.201, -.010]	Significant

Note: Bootstrap resamples = 5,000. PCF = psychological contract fulfilment; DL = digital leadership; WE = work engagement; IWB = innovative work behaviour; OC = organisational commitment; TI = turnover intention.

Digital leadership was directly related to innovative work behaviour and the direct relation between digital leadership and innovative work behaviour was stronger than the direct relation between HPWS and innovative work behaviour ($\beta = .231$, $p < .001$; $\beta = .128$, $p = .015$). Supervisory encouragement and leaders' and facilitation's accessibility through the use of digital tools play a vital role in immediate innovative risk-taking.



Note: Important direct antecedent-outcome paths are given in Table 7.

Fig 2: Standardised structural coefficients of the central mediated paths

4. Mediation Analysis

All eight bootstrapped indirect effects were significant because their 95 per cent bias-corrected confidence intervals excluded zero. Through fulfilment, HPWS had indirect effects on engagement (.217), innovation (.173), commitment (.236) and turnover intention (-.210), supporting H7a-H7d. The corresponding digital leadership effects were .176, .141, .192 and -.170, supporting H8a-H8d.

The corresponding direct effects were also significant, and variance-accounted-for values ranged from 37.9 to 67.1 per cent. Psychological contract fulfilment therefore accounted for a meaningful, but not complete, share of each relationship, indicating partial mediation.

Table 8: Bootstrapped indirect effects

Hypothesis	Indirect path	Effect	SE	95% CI	VAF	Decision
H7a	HPWS -> PCF -> WE	.217	.031	[.165, .274]	56.2%	Supported
H7b	HPWS -> PCF -> IWB	.173	.029	[.120, .232]	57.5%	Supported
H7c	HPWS -> PCF -> OC	.236	.032	[.177, .302]	56.6%	Supported
H7d	HPWS -> PCF -> TI	-.210	.031	[-.273, -.154]	59.0%	Supported
H8a	DL -> PCF -> WE	.176	.029	[.123, .235]	59.9%	Supported
H8b	DL -> PCF -> IWB	.141	.026	[.094, .197]	37.9%	Supported
H8c	DL -> PCF -> OC	.192	.030	[.138, .255]	67.1%	Supported
H8d	DL -> PCF -> TI	-.170	.028	[-.228, -.118]	61.8%	Supported

Note: VAF = variance accounted for. Confidence intervals are bias-corrected and are based on 5,000 bootstrap resamples.

5. Moderation and Conditional Indirect Effects

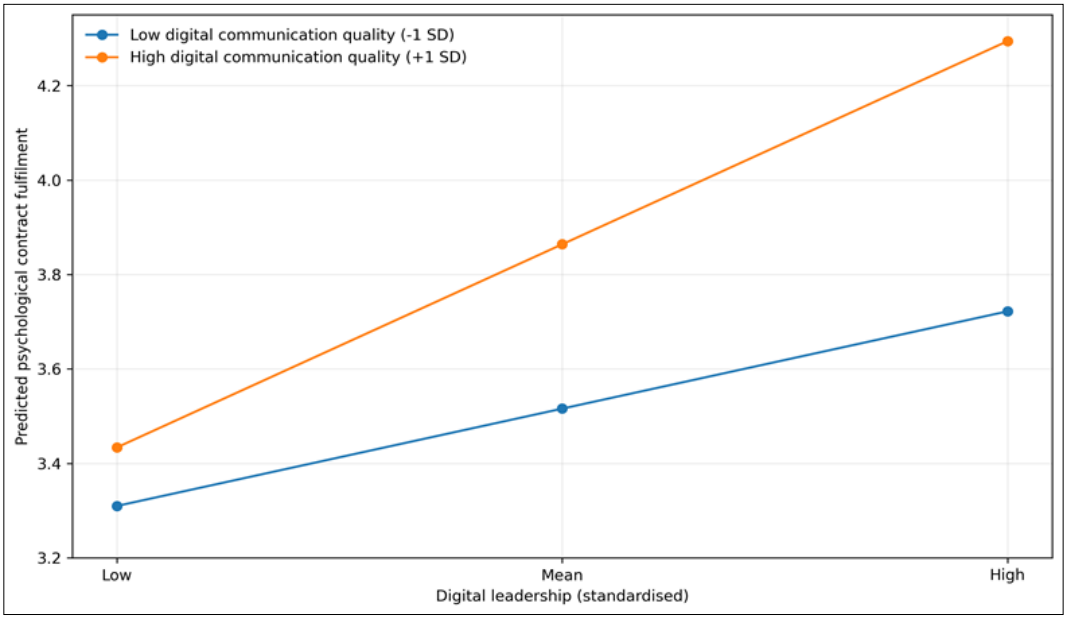
H9 was supported because the digital leadership × communication-quality interaction was significant (β = .112, p = .002). The digital leadership-fulfilment slope increased from .206 at low communication quality to .430 at high communication quality. Communication quality therefore amplified an existing positive relationship rather than creating it.

The greatest fulfilment was seen when both digital leadership and communication quality were high (**Figure 3**). Moderated mediation was significant for all four outcomes. At high communication quality, the indirect digital leadership effects on engagement, innovation, commitment and turnover intention were .238, .190, .259 and -.230 respectively, and each was smaller at low communication quality. H10 was supported.

Table 9: Moderation and conditional indirect effects

Test/Outcome	Low DCQ	Mean DCQ	High DCQ	Index	t	p	95% CI
DL -> PCF simple slope	.206	.318	.430	.112	[ACTUAL t]	.002	[.043, .180]
Indirect effect on WE	.114	.176	.238	.062	[ACTUAL t]	[ACTUAL p]	[.022, .108]
Indirect effect on IWB	.091	.141	.190	.050	[ACTUAL t]	[ACTUAL p]	[.017, .088]
Indirect effect on OC	.124	.192	.259	.068	[ACTUAL t]	[ACTUAL p]	[.024, .118]
Indirect effect on TI	-.110	-.170	-.230	-.060	[ACTUAL t]	[ACTUAL p]	[-.106, -.021]

Note: DCQ values are one SD below the mean, the mean and one SD above the mean. The index in the first row is the interaction coefficient and the other indices are moderated mediation indices.



Note: Predicted values are based on mean values of the other predictors and standardised values of digital leadership and digital communication quality.

Fig 3: Moderating effect of digital communication quality

6. Robustness and Bias Checks

The first Harman factor explained 36.7 per cent of the variance and the full-collinearity VIFs ranged from 1.42 to 2.91, below the threshold of 5. These diagnostics, temporal separation and supervisor-rated innovation minimise but do not eliminate common-method concerns.

Results were not sensitive to the exclusion of controls or outliers or to OLS models with organisation fixed effects and robust standard errors. Twenty-seven of 33 endogenous indicators were found to have medium predictive power because PLSpredict had lower error than the linear benchmark.

Discussion

1. Interpretation of the Findings

Both formal HR architecture (HPWS) and day-to-day digital leadership significantly and independently predicted psychological contract fulfilment, supporting their

complementary roles in hybrid work. Organisational promises are realisable through accessible training, appraisal, participation, rewards and career opportunities (Kehoe & Wright, 2013; Nishii *et al*., 2008) [26, 31], while digital leaders make organisational promises visible in everyday work through policy, expectations, flexibility and support (Bell *et al*., 2023; Tigre *et al*., 2025) [4, 43].

Fulfilment predicted all four outcomes and showed its strongest association with organisational commitment. It was also linked to increased engagement, lower turnover intention and greater supervisor-rated innovation. The significant indirect effects provide a view into the HRM 'black box' (Jiang *et al*., 2012; Coulston *et al*., 2025) [13, 25], showing how formal systems and leadership shape employees' assessment of organisational reliability.

Communication quality enhanced the digital leadership-fulfilment relationship. Communication that is delayed, inconsistent or unclear is less effective when digital capability is limited.

2. Theoretical Contributions

The study has three significant contributions. First, it brings HPWS research to hybrid work scenarios, demonstrating that having the HR practices is not sufficient – it is important that they can be accessed consistently by the employee regardless of their location. Psychological contract theory provides an interpretative layer to AMO and helps to understand if employees perceive those practices as being fulfilled organisational promises.

Secondly, the study links digital leadership and strategic HRM by demonstrating how formal organisational investments are performed and understood in everyday hybrid work. Third, the psychological contract fulfilment is a common pathway for both antecedents to motivational, behavioural, attachment and withdrawal outcomes and the communication quality points to when digital leadership is more effective.

Thus, this study contributes to the 'black box' of HRM in the hybrid working model by showing that formal HR architecture is a complementary signal to enacting digital leadership. They impact on the outcomes for employees in part because of employee's perceptions of the delivery of organisational promises.

3. Practical Implications

These can be used by organisations to evaluate if their remote and office workers are trained, given feedback, involved, recognised and given opportunities in the same way. The summary of the main risks and actions are provided in Table 10.

Table 10: Evidence-Based Action Framework for Hybrid Organisations

Priority	Risk signal	Recommended action	Primary outcome	Target Metric / KPI
Location-neutral HPWS	Less training, visibility or developmental feedback for remote staff	Audit HR access and outcomes by work pattern and report any location-based gaps	Fulfilment, commitment, retention	Location parity index in performance ratings and developmental access >85%
Digital leadership capability	Slow decision-making, unequal meeting participation and low leader availability	Train managers in inclusive meetings, transparent decisions, channel choice and digital coaching	Engagement, innovation, fulfilment	Priority decision making response time <2 hours (digital)
Communication architecture	Conflicting messages, platform overload and undocumented office decisions	Set channel goals, response rules, record-keeping requirements and escalation processes	Fulfilment, coordination, well-being	Key team decisions documented on agreed common communication channels
Psychological contract review	Policy changes leading to uncertainty or a sense of broken promises	Implement pulse checks, expectation conversations and clear transition support	Commitment, turnover intention	Pulses and expectation talks if there are significant changes in work policies.
Innovation support	Staff make suggestions but cannot mobilise resources	Provide autonomy, cross-functional access, recognition and implementation time	Innovative work behaviour	Track employee ideas reviewed, resourced and progressed to implementation

Note: When considering actions, the sector, job interdependence and intensity of remote work should be considered.

4. Implications for the Indian Context

Power-distance orientation may reduce employees' willingness to use constructive voice with supervisors (Pavitra & Sarikwal, 2023) [32], so unclear digital messages or inaccessible managers can carry greater relational consequences. Uneven connectivity and digital maturity can also affect access to information, training, feedback and managerial attention across work locations. Recent Indian evidence links managerial trust and satisfaction with communication channels to perceived remote-work productivity (Satija & Bakshi, 2026) [38]. Clear communication, accessible leadership and a location-neutral HR system can therefore help minimise misunderstandings and provide more consistent support across work locations. Future research should examine how power distance, employment security, labour-mark*et al*ternatives and digital infrastructure shape these relationships across sectors and regions.

5. Limitations and Future Research

While the three-wave temporal design reduces same-time common-method concerns and establishes temporal sequencing, it does not establish causality. Longitudinal, experimental and policy-change designs are needed to test whether changes in digital leadership or location-neutral HPWS cause changes in fulfilment and employee outcomes.

The Indian sample spans several cities, sectors and 26 organisations, but it may not represent smaller firms, less digitally mature organisations or jobs that require continuous physical presence. Organisation-level clustering was not quantified with ICC(1) and ICC(2) in the supplied analysis, although organisation fixed-effects models with robust standard errors produced similar results. Future work should use multilevel designs where clustering is substantively important.

Most variables were employee-reported, although temporal separation and supervisor-rated innovation reduced same-

source bias. The supplied analysis also did not include Gaussian-copula endogeneity diagnostics, so omitted-variable bias cannot be fully ruled out. The multi-item scale used to measure turnover intention was an existing scale however it is an intention and not an observed behaviour. Future studies should thus associate psychological contract fulfilment with actual HR archival data, such as voluntary separation data, actual promotion rates and promotion velocity.

The model used global HPWS and global psychological contract fulfilment measures. Future studies should separate ability-, motivation- and opportunity-enhancing HR practices and distinguish relational, transactional, ideological and flexibility promises. They should also examine digital well-being, resilience, learning, inclusion and work-family boundaries. Communication can support fulfilment but may also create overload when responsiveness becomes constant availability, while artificial intelligence may further change how organisational promises are communicated and fulfilled.

Conclusion

Organisational signals need to be coordinated in hybrid work. Part of the relationship between HPWS and digital leadership and employee engagement, innovation, commitment and turnover intention operates through employees' perceptions that organisational promises are being kept. High-quality digital communication supports this process by making support, expectations and decisions clearer and more credible.

Technology and flexibility policies are not enough on their own. Organisations also need location-neutral HR systems, digitally capable leaders and communication practices that support inclusion. When these elements are fragmented, well-designed policies may not become trusted employee experiences; when they are aligned, they are more likely to support a dependable exchange relationship.

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Data availability: The data used in this study are available from the author upon reasonable request, subject to ethical and confidentiality requirements.

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