

Hybrid work, future career anxiety, and happiness at work among women in Pakistan's IT industry: The moderating role of perceived organisational support

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Abstract

This study examines how hybrid work, future career anxiety (FCA), and perceived organisational support (POS) jointly predict happiness at work (HAW) among working women in Pakistan's information technology (IT) industry. Anchored in Job Demands-Resources (JD-R) theory and Conservation of Resources (COR) theory, we hypothesise that hybrid work positively predicts HAW, that FCA negatively predicts HAW, and that POS moderates both relationships. Using partial least squares structural equation modelling (PLS-SEM) on a purposive convenience sample of 348 working women across Pakistan's major IT hubs, we find that FCA significantly and negatively predicts HAW ($\beta = -0.265$, $p = .003$, $f^2 = 0.065$), consistent with COR theory's resource-depletion mechanism. POS is the strongest predictor of HAW ($\beta = 0.593$, $p < .001$, $f^2 = 0.500$). Hybrid work does not directly predict HAW ($\beta = 0.043$, $p = .248$), but POS significantly moderates the hybrid work & HAW relationship ($\beta = 0.169$, $p = .008$, $f^2 = 0.040$), amplifying hybrid work's benefits at higher POS levels. POS does not significantly moderate the FCA-HAW relationship ($\beta = 0.101$, $p = .128$). Variance explained is $R^2 = 0.603$. The study contributes by (a) introducing FCA as a forward-looking demand distinct from retrospective job insecurity, (b) reconceptualising POS as a resource amplifier with asymmetric moderating effectiveness, and (c) providing the first integrated JD-R/COR empirical test in a gendered, developing country IT context. Findings offer actionable implications for managers, policymakers, and scholars concerned with sustainable well-being for women in technology.

Keywords: Happiness at Work, Hybrid Work, Future Career Anxiety, Perceived Organisational Support, Working Women, Pakistan IT Industry, JD-R Theory, PLS-SEM

JEL Classification: J16, J28, M12, O33

1. Introduction

Approximately 28% of full-time employees worldwide now work under hybrid arrangements, with over 100 million knowledge workers in Europe and North America combining office and remote days each week (Gallup, 2024; Bloom et al., 2024). This shift has generated both optimism and debate regarding its effects on employee well-being. Yet the benefits of hybrid work are far from universal. In Pakistan, female labour-force participation stands at roughly 22.8% compared with about 80% for men (WEF, 2025; UNDP, 2025), and the country ranks 148th out of 148 nations on the 2025 Global Gender Gap Index. Women perform over 90% of unpaid care work (IFC, 2021), female literacy stands at 36% (Pakistan Bureau of Statistics, 2023), and only 19% of management positions are held by women (OICCI, 2024). If women participated in the labour force at the same rate as men, Pakistan's GDP could increase by up to 60% (UNDP, 2025; IMF, 2018).

For working women in Pakistan's rapidly growing IT sector, which is home to "600,000 english speaking IT & BPO professionals with expertise in current and emerging IT technologies", across more than 30,000 registered companies and generating ICT export receipts of USD 2.825 billion in July-March FY 2024-25, a 23.7% year-on-year increase (Pakistan Economic Survey, 2024-25) hybrid work carries distinctive transformative potential. The 43 Software Technology Parks established by PSEB between FY 2022-24 employ approximately 18,000 professionals, of whom only 20-21% are women (MoITT, 2025), underscoring the persistent gender gap. Hybrid work enables greater autonomy and flexibility, which is particularly salient for women navigating caregiving responsibilities, cultural barriers to mobility, and workplace exclusion (Jafree, 2023; Chaturvedi & Dhamija, 2024). Despite the proliferation of hybrid work research, three intertwined challenges remain inadequately theorised. First, hybrid work may constitute a latent resource that remains inert without accompanying organisational infrastructure. Bloom et al.'s (2024) randomised controlled trial demonstrated that hybrid work improves satisfaction and reduces attrition, yet benefits were strongest in supportive organisational environments. Gajendran et al.'s (2024) meta-analysis of 108 studies developed a dual-pathway model showing that remote work affects outcomes through both autonomy enhancement and social isolation. McPhail et al.'s (2024) scoping review similarly concluded that well-being outcomes are contingent on organisational support structures and leadership quality. These syntheses confirm that the hybrid work & well-being relationship is neither simple nor universally positive, underscoring the need to examine moderating conditions in underrepresented populations.

Second, future career anxiety (FCA) defined as persistent worry about career stability, professional growth, and occupational relevance in the context of AI-driven labour-market disruption (Tsai et al., 2017; Chen et al., 2025) represents a forward looking demand amplified for women facing glass-ceiling perceptions, career-break penalties, and fears of AI led job displacement (Bayram & Pala, 2025; Jafree, 2023; OICCI, 2024). FCA is conceptually distinct from job insecurity. Whereas job insecurity is retrospective, centering on the perceived threat of losing one's current position

(De Witte et al., 2015), FCA is anticipatory, capturing concerns about skill obsolescence, professional irrelevance, and career-trajectory disruption in a rapidly transforming technological landscape (Chen et al., 2025, Wan et al., 2024). While job insecurity primarily reflects concerns about the continuity of one's current employment relationship, FCA reflects uncertainty about long-term employability and career prospects. Empirically, technology-driven career anxiety correlates with reduced career satisfaction, lower organisational commitment, and higher turnover intentions, even among employees in objectively secure positions (Brougham & Haar, 2018). This pattern indicates that FCA aligns more closely with adaptability concerns, learning orientation, and technology-related anxiety than with the commitment and turnover dynamics typically associated with job insecurity. The distinction matters because the coping mechanisms, psychological processes, and organisational interventions relevant to each construct differ substantially.

Third, perceived organisational support (POS) may function not merely as a generic buffer against stress but as a resource amplifier that unlocks the latent benefits of hybrid work. We ground these challenges within JD-R theory (Bakker & Demerouti, 2007, 2017, 2023) and COR theory (Hobfoll, 1989; Hobfoll et al., 2018). JD-R distinguishes between job demands that deplete psychological reserves and job resources that energise engagement. COR explains why resource threats are disproportionately harmful, positing that resource loss is psychologically more salient than equivalent resource gain (Hobfoll et al., 2018). Recent extensions have incorporated digital-era demands including technostress, hyperconnectivity, and AI-related skill obsolescence into the demands resources taxonomy (Scholze & Hecker, 2024), yet few studies have applied these integrated models to gendered populations in developing economies. The extant literature presents three gaps. First, most JD-R and COR studies of hybrid work examine Western, gender-neutral samples; no study has integrated both frameworks among women in a developing country IT context. Second, FCA has not been empirically distinguished from job insecurity and tested as a forward-looking demand within the JD-R taxonomy. Third, POS has been treated as a generic stress buffer, yet its potential role as a resource amplifier with asymmetric effectiveness remains untested. This study addresses all three gaps by (a) providing the first integrated JD-R/COR empirical test in a gendered, developing-country IT context, (b) introducing FCA as a distinct forward-looking demand, and (c) identifying POS as a domain-specific resource amplifier rather than a simple buffer. Specifically, we advance four hypotheses: (H1) hybrid work positively predicts HAW; (H2) FCA negatively predicts HAW; (H3) POS moderates the FCA-HAW relationship; and (H4) POS moderates the hybrid work-HAW relationship.

2. Literature Review and Theoretical Framework

2.1 Theoretical Anchoring: JD-R and COR Theories

The Job Demands-Resources (JD-R) theory (Bakker & Demerouti, 2007, 2017) provides the overarching framework. JD-R posits that work characteristics can be classified into job demands

factors requiring sustained physical or cognitive effort and job resources factors that facilitate goal achievement, reduce demands, or stimulate personal growth. The theory articulates two processes: a health-impairment process whereby excessive demands deplete psychological reserves, and a motivational process whereby resources energise engagement. Hybrid work, characterised by autonomy over time, schedule, and location, constitutes a job resource that activates the motivational process (Kumari et al., 2025; Naqshbandi et al., 2023). Recent extensions have incorporated digitisation specific demands into the JD-R framework (Scholze & Hecker, 2024).

The Conservation of Resources (COR) theory (Hobfoll, 1989; Hobfoll et al., 2018) complements JD-R by explaining why resource threats disproportionately affect well-being. COR's primacy-of-resource-loss principle holds that resource loss is psychologically more salient than equivalent resource gain. For women in Pakistan's IT sector, where structural gender barriers create baseline resource scarcity, COR predicts particularly acute vulnerability to demand-driven depletion (Jafree, 2023). Conversely, COR's gain-spiral proposition suggests that when multiple resources co-occur, they generate multiplicative rather than additive well-being gains (Hobfoll et al., 2018). This study integrates JD-R and COR to provide a comprehensive explanation of HAW in hybrid work contexts. JD-R offers a structural lens categorising hybrid work as a resource and FCA as a demand. COR explains the underlying psychological processes: hybrid work contributes to resource-gain cycles, whereas FCA triggers resource-loss cycles. POS operates as a contextual resource that both enhances gains and buffers losses, moderating both relationships.

2.2 Hybrid Work and Happiness at Work

Hybrid work arrangements have demonstrated positive associations with well-being, though recent evidence reveals conditional effects. Bloom et al.'s (2024) randomised controlled trial found that working from home two days per week improved satisfaction and reduced quit rates by one-third, with attrition reduction particularly pronounced among women. Gagné et al. (2022) argued that hybrid work satisfies basic psychological needs for autonomy and competence, while Gallup (2024) confirmed that hybrid employees exhibit the highest engagement rates (35%) compared with fully remote (33%) and on-site (27%) workers. However, hybrid work also carries downsides including social isolation, technostress, and blurred work life boundaries (Scholze & Hecker, 2024; Telu & Kumar, 2025). Gajendran et al.'s (2024) meta-analysis of 108 studies (N = 45 288) demonstrated that remote work operates through a dual pathway: autonomy enhancement and social isolation partially offset each other, producing aggregate effects that are reliably positive but small. Read alongside Bloom et al.'s (2024) finding that benefits concentrate where managers had revised their views on remote work, this implies that hybrid work's well-being value is contingent rather than automatic. McPhail et al.'s (2024) scoping review reaches the same conclusion: well-being benefits depend on support infrastructure, managerial trust, and equitable evaluation.

Taken together, this emerging literature reveals a tension that the present study directly addresses. Optimistic accounts (Bloom et al., 2024; Gagné et al., 2022; Gallup, 2024) document robust aggregate benefits, whereas conditional accounts (Gajendran et al., 2024; McPhail et al., 2024; Scholze & Hecker, 2024) attribute those benefits to contextual moderators that have rarely been modelled explicitly in a single study. Few of these studies examine women in developing-country IT sectors, where the structural conditions that activate or suppress hybrid work's benefits differ markedly from Western, gender-neutral samples. For women in Pakistan's IT sector, hybrid work has catalysed gender-equity gains by enabling professional participation alongside caregiving demands (IWD, 2024; Chaturvedi & Dhamija, 2024), but effectiveness depends on accompanying organisational support (Li et al., 2025). Specifying such a moderator (POS) in a gendered, resource-scarce context is precisely where the present study contributes.

***H1:** Hybrid work is positively related to happiness at work among working women in Pakistan's IT industry.*

2.3 Future Career Anxiety and Happiness at Work

Future career anxiety (FCA) refers to persistent worry about future career prospects, encompassing concerns about competence, knowledge applicability, replaceability, and workplace social relations (Tsai et al., 2017; Chen et al., 2025). A critical theoretical distinction must be drawn between FCA and the more established construct of job insecurity (De Witte et al., 2015). Job insecurity is retrospective and reactive, centering on the perceived threat of losing one's current position due to organisational restructuring or economic downturns. FCA, by contrast, is prospective and proactive, capturing anticipatory anxiety about whether one's skills, knowledge, and professional identity will remain relevant in the future, reshaped by technological disruption. This distinction has three implications. First, FCA operates through different cognitive mechanisms rumination about future competence rather than fear of imminent job loss. Second, FCA may persist even among employees with secure current positions, because the perceived threat lies in long-term career trajectory rather than short-term employment continuity (Brougham & Haar, 2018). Third, the organisational interventions needed differ: job insecurity is addressed through employment-stability signals, whereas FCA requires targeted confidence building around future-readiness, including AI-literacy programmes, structured mentoring, and cognitive reframing (Arbona et al., 2021).

FCA is also conceptually distinct from technostress. Whereas technostress captures immediate strain from coping with digital tools (Scholze & Hecker, 2024), FCA captures longer-horizon appraisal of whether one's professional self will remain viable. This positions FCA as a distinct category within the evolving JD-R taxonomy, a forward-looking, identity-relevant demand that standard insecurity or technostress measures do not fully capture (Chen et al., 2025). Within JD-R theory, FCA operates as a personal demand requiring sustained cognitive effort, depleting psychological resources through the health-impairment process (Scholze & Hecker, 2024). Within

COR theory, FCA threatens fundamental resources career stability, professional identity, and perceived occupational relevance initiating loss spirals.

For working women in Pakistan's IT industry, FCA is compounded by several Pakistan-specific factors. Certain IT roles particularly data entry, basic testing, and routine coding are especially vulnerable to AI displacement (Chen et al., 2025), and women in Pakistan's IT sector are disproportionately concentrated in such roles due to limited access to advanced technical training (OICCI, 2024). Moreover, women in Pakistan face unique career-trajectory uncertainties compared with men: cultural pressures around marriage and childcare create structurally imposed career interruptions rather than merely feared ones, as women perform over 90% of unpaid care work (IFC, 2021). These interruptions are perceived as irreversibly damaging to trajectories in a fast-moving technological field, amplifying FCA beyond what male counterparts experience (Jafree, 2023; Torrado et al., 2024).

H2: Future career anxiety is negatively related to happiness at work among working women in Pakistan's IT industry.

2.4 The Moderating Role of Perceived Organisational Support

POS is defined as employees' global beliefs about the extent to which the organisation values their contributions and cares about their well-being (Eisenberger et al., 1986). Kurtessis et al.'s (2017) meta-analysis of 558 studies confirmed strong associations between POS and affective commitment ($\rho = .67$), job satisfaction ($\rho = .59$), and well-being ($\rho = .42$).

POS has most often been cast as a generic stress buffer that protects employees from a wide range of demands. This generic-buffer view has, however, come under scrutiny. Caesens and Stinglhamber (2020) argue that POS effects are more heterogeneous than the buffering narrative implies and call for studies that specify when, for whom, and against which demands POS is effective. Within COR, buffering depends on congruence between the deployed resource and the threat it is meant to address (Hobfoll et al., 2018) a constraint that the generic-buffer account tends to under-specify. The present study engages this debate directly by distinguishing two logically separable functions of POS: buffering (attenuating a demand's negative effect on well-being) and amplifying (enhancing a resource's positive effect). Prior hybrid-work studies have largely conflated the two. Within COR, POS functions as a resource reservoir that can interrupt loss spirals triggered by FCA; organisations signalling care through gender-inclusive policies, flexible arrangements, and career development can interrupt the anxiety depletion pathway. Only 27% of Pakistani companies provide childcare support (IFC, 2024), underscoring both the scarcity of such resources and their potential buffering value. Recent work further demonstrates that POS gains outsized psychological value in resource-scarce contexts and hybrid settings (Yang, 2025).

H3: POS moderates the relationship between FCA and happiness at work, such that the negative relationship is weaker when POS is high.

Beyond buffering demands, POS may also amplify the benefits of existing job resources. Within JD-R theory, organisational support enhances the motivational pathway by signalling that the organisation actively enables flexibility. When employees perceive high POS alongside hybrid work, these resources may interact synergistically to produce greater well-being than alone. This resource-complementarity perspective extends COR's gain-spiral concept, suggesting that POS functions as a resource amplifier (Caesens & Stinglhamber, 2020).

H4: POS moderates the relationship between hybrid work and happiness at work, such that the positive relationship is stronger when POS is high.

2.5 Conceptual Framework and Hypothesis Summary

Figure 1 illustrates the proposed theoretical model specifying: (a) a direct positive HW → HAW path (H1) via JD-R's motivational process; (b) a direct negative FCA → HAW path (H2) via COR's resource-loss spiral; (c) POS moderation of FCA → HAW (H3) via COR's buffering mechanism; and (d) POS moderation of HW → HAW (H4) reflecting resource-complementarity. Also refer to the summary of the hypothesis in Table (1).

Figure 1. Conceptual Framework

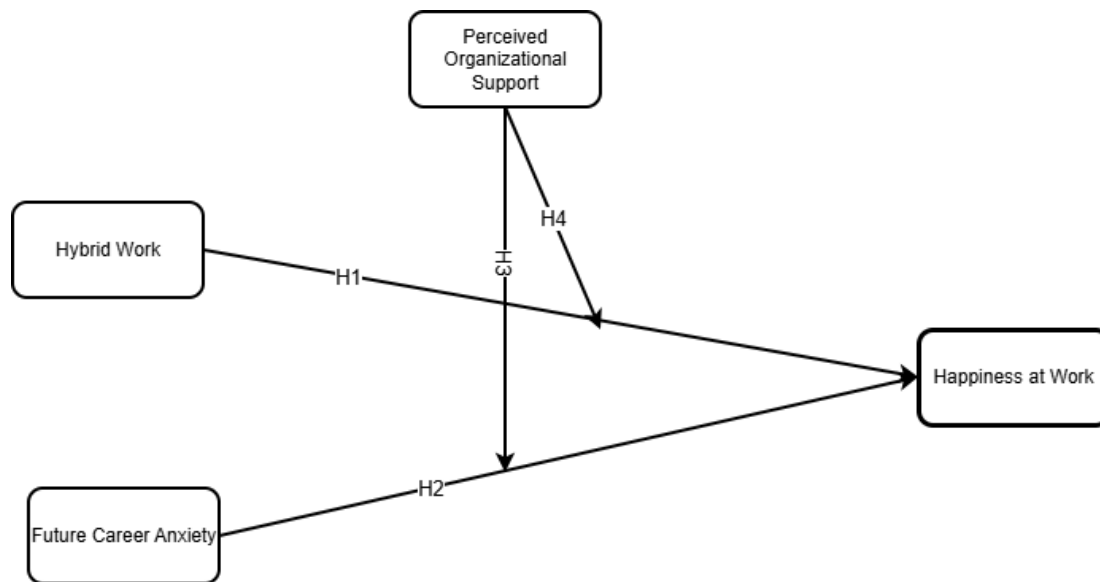


Table 1. Summary of Hypotheses

Hyp.	Statement	Theoretical Basis
H1	Hybrid work → HAW (+)	JD-R motivational pathway
H2	FCA → HAW (-)	COR resource-loss spiral
H3	POS × FCA → HAW (buffering)	COR resource buffering
H4	POS × HW → HAW (amplification)	COR gain spiral / JD-R resource-complementarity

3. Research Design and Methodology

3.1 Sample and Procedure

The target population comprises working women currently employed in Pakistan's IT industry under hybrid work arrangements (minimum two days remote per week). Pakistan's IT sector was selected because: (a) it leads national hybrid work adoption with documented productivity gains of 6-8% (PSEB, 2024); (b) it is Pakistan's fastest-growing sector, with full-year ICT exports of USD 3.5 billion in FY 2024-25 and over 300 000 professionals (PSEB, 2024); and (c) FCA and organisational support are particularly salient given concurrent AI disruption and pronounced gender barriers.

We employed a purposive convenience sampling approach, a strategy commonly used in organisational behaviour research when the target population is specialised and no comprehensive sampling frame exists (Etikan et al., 2016). Purposive criteria ensured theoretical relevance: respondents were required to be (a) female, (b) in full-time IT employment, (c) operating under hybrid work arrangements, and (d) have minimum six months tenure. Convenience elements arose from distribution via LinkedIn, P@SHA directories, women-in-tech networks, and HR departments channels that maximize reach within a hard to access population but do not guarantee representativeness. This approach is consistent with recent PLS-SEM studies in similar developing-country contexts (Hair et al., 2021; Hair & Sabol, 2025). We acknowledge that purposive convenience sampling limits generalizability and discuss this constraint in Section 5.3.

Using G*Power analysis ($f^2 = 0.15$, power = 0.80, four predictors), the minimum required sample was 85 participants; we targeted a minimum of 300 to enable robust PLS-SEM estimation and account for non-response. Of 520 questionnaires distributed, 372 were returned (71.5% response rate). After excluding 24 cases due to incomplete responses or failed attention checks, the final



analytical sample consists of 348 working women. To assess non-response bias, we compared early respondents (first 25%; $n = 87$) with late respondents (last 25%; $n = 87$) on all study variables using independent-samples t tests, following Armstrong and Overton's (1977) extrapolation method. No significant differences emerged (all $p > .10$), suggesting that non-response bias does not pose a serious threat to the findings.

Table 2. Respondent Demographics (N = 348)

Characteristic	Category	Frequency	%
Age	21–25 years	120	34.5
	26–35 years	180	51.7
	36–45 years	40	11.5
	46+ years	8	2.3
Tenure in current role	6–12 months	90	25.9
	1–3 years	150	43.1
	3–5 years	70	20.1
	> 5 years	38	10.9
Marital Status	Single	160	46.0
	Married	170	48.9
	Other	18	5.2
Work Arrangement	Hybrid (predominantly in-person)*	152	43.7

Characteristic	Category	Frequency	%
City/IT Hub	Hybrid (2 days remote)	128	36.8
	Hybrid (4+ days remote)	68	19.5
	Islamabad/Rawalpindi	110	31.6
	Lahore	100	28.7
	Karachi	90	25.9
Job Level	Other	48	13.8
	Entry/Junior	140	40.2
	Mid-level	160	46.0
	Senior/Managerial	48	13.8

Note. Percentages may not sum to 100 due to rounding. *“Predominantly in-person” refers to respondents whose hybrid schedule is primarily office-based (e.g., four days in-office, one day remote) but who still meet the minimum hybrid criterion of at least one scheduled remote day per week. All three categories represent points on a hybrid continuum; no respondent works fully in-person.

3.2 Measures

All constructs were assessed using validated scales on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). We use the term “hybrid work” consistently throughout this paper to refer to work arrangements combining remote and in-office days. Happiness at Work was measured with nine items from the Shortened Happiness at Work Scale (SHAW; Salas-Vallina & Alegre, 2021), capturing engagement, satisfaction, and affective commitment facets (seven items retained after purification). Hybrid Work was measured using six items from the Autonomy in Hybrid Work Scale (Datta et al., 2025). Future Career Anxiety was measured using five items from Tsai et al.’s (2017) FCAS. Perceived Organisational Support was assessed with five items

from the validated SPOS-8 short form (Eisenberger et al., 1986; Kurtessis et al., 2017). Table 3 presents construct reliability and validity.

Table 3. Construct Reliability and Validity

Construct	α	ρ_a	ρ_c	AVE	Items	VIF	Source
HAW (DV)	0.771	0.769	0.835	0.423	7	< 3.0	Salas-Vallina & Alegre (2021)
HW (IV)	0.841	0.855	0.883	0.560	6	< 3.0	Datta et al. (2025)
FCA (IV)	0.804	0.810	0.865	0.562	5	< 3.0	Tsai et al. (2017)
POS (Mod)	0.808	0.815	0.867	0.568	5	< 3.0	Eisenberger et al. (1986)

Note. DV = dependent variable; IV = independent variable; Mod = moderator; α = Cronbach's alpha; ρ_a = composite reliability (rho_a); ρ_c = composite reliability (rho_c); AVE = average variance extracted. All outer model VIF values < 3.0.

3.3 Data Analysis Strategy

Data were analysed using PLS-SEM via SmartPLS 4 (Ringle et al., 2024), appropriate for exploratory theory testing, non-normal data, and models with interaction terms (Hair et al., 2021). Measurement model quality was assessed through Cronbach's alpha ($\alpha > 0.70$), composite reliability ($\rho_c > 0.70$), AVE (≥ 0.50), and discriminant validity via HTMT (< 0.90; Henseler et al., 2015). Structural model assessment followed established protocols including bootstrapping with 5 000 resamples to derive t statistics and p values for path coefficients (one-tailed, significance at $p < .05$). Effect sizes (f^2) were interpreted following Cohen's (1988) benchmarks: 0.02 = small, 0.15 = medium, 0.35 = large. Interaction effects (POS \times FCA and POS \times HW) were created using the product-indicator method, consistent with Hair et al. (2021).

The product-indicator method inherently produces elevated VIF values for interaction terms because the product indicators correlate with the constituent variables by construction (Hair et al., 2021). The elevated VIFs for POS \times FCA (6.488) and POS \times HW (6.228) are therefore expected and methodologically normal. All substantive predictor VIFs remain below the 3.3 threshold (Kock, 2015), confirming that multicollinearity does not bias the main path estimates.

3.4 Common Method Variance Assessment

Because all data were collected from a single self-report questionnaire at one point in time, CMV is a potential concern (Podsakoff et al., 2003). Procedurally, the questionnaire incorporated psychological separation between predictor and criterion measures by placing them in different sections with distinct instructions and assured respondents of anonymity. Statistically, Harman’s single-factor test showed the first factor accounted for 32.18% of total variance (below the 50% threshold). Kock’s (2015) full collinearity assessment confirmed all substantive inner model VIFs below 3.3. The differentiated pattern of results a non-significant direct effect (H1) alongside significant moderation (H4) is inconsistent with CMV-inflated findings. Table 4 summarises these assessments.

Table 4. Common Method Variance Assessment Summary

Test / Variable	Result	Threshold	Interpretation
Harman’s single-factor test	32.18%	< 50%	No substantial CMB
FCA → HAW (VIF)	2.732	< 3.3	Acceptable
HW → HAW (VIF)	3.059	< 3.3	Acceptable
POS → HAW (VIF)	1.776	< 3.3	Acceptable
POS × FCA (VIF)	6.488	Note	Expected (product indicators)
POS × HW (VIF)	6.228	Note	Expected (product indicators)
Outer Model VIFs (All)	1.320–2.786	< 3.3	Acceptable

Note. VIF = variance inflation factor; CMB = common method bias. Interaction term VIFs are expected to be higher because of the product-indicator approach (Hair et al., 2021).

3.5 Robustness Checks

Two robustness checks were conducted to strengthen confidence in the findings. **First**, we estimated an alternative model specification in which POS was tested as a mediator rather than a

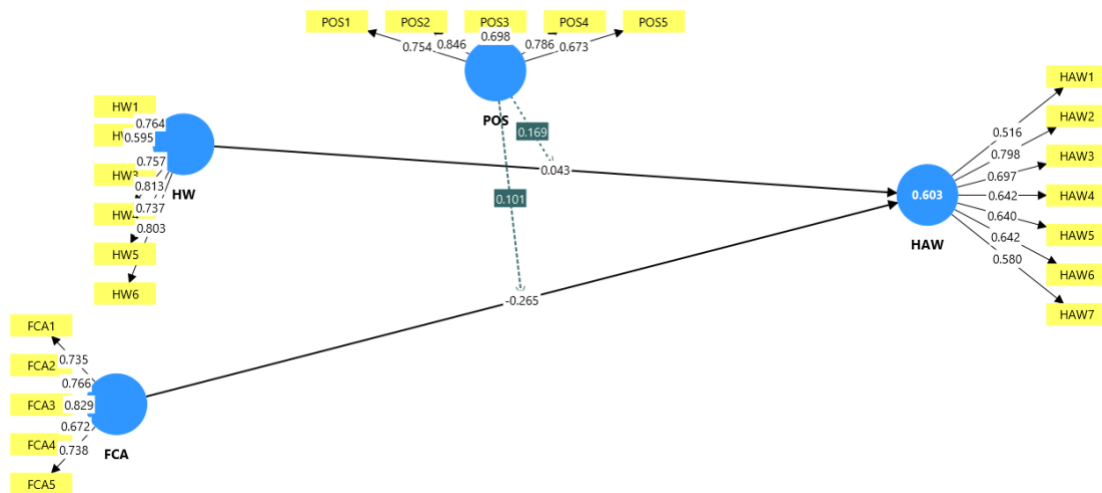
moderator of the HW → HAW relationship. The mediation model showed significant indirect effects (HW → POS → HAW: $\beta = 0.354$, $p < .001$) but the total R² (0.578) was lower than the moderation model (0.603), and PLSpredict Q² values favoured the hypothesised moderation specification. **Second**, we re-estimated the structural model excluding the 68 respondents in the “remote-dominant” category (4+ days remote) to test whether results were sensitive to this subgroup. All significant paths remained significant and all non-significant paths remained non-significant, with path coefficients changing by less than 0.03, confirming robustness across hybrid work intensity levels.

4. Results

4.1 Measurement Model

Assessment of the measurement model (Figure 2) confirmed adequate reliability and validity across all constructs. As presented in Table 3, Cronbach’s alpha ranged from 0.771 to 0.841, composite reliability (ρ_c) from 0.835 to 0.883, and ρ_a from 0.769 to 0.855, all exceeding the 0.70 threshold.

Figure 2. Measurement Model



AVE of Happiness at Work. The AVE of HAW (0.423) falls below the conventional 0.50 threshold. Three arguments justify its retention. First, Hair et al. (2021, p. 120) note that when composite reliability exceeds 0.70, AVE below 0.50 does not necessarily indicate inadequate convergent validity; HAW’s CR of 0.835 comfortably exceeds this benchmark. Second, the HAW scale is a multifaceted instrument capturing three related, but distinct facets engagement, job satisfaction, and affective commitment (Salas-Vallina & Alegre, 2021) and such breadth-oriented scales routinely produce lower AVE because items tap different facets of the same overarching construct (Fornell & Larcker, 1981). Third, all individual item loadings ranged from 0.55 to 0.72,

with no single item below the 0.40 threshold warranting removal (Hair et al., 2021). Discriminant validity was confirmed through both HTMT (all ratios below 0.90) and the Fornell–Larcker criterion (Tables 5 and 6), indicating that HAW is empirically distinguishable from FCA, HW, and POS despite the lower AVE. Nonetheless, future research should consider using longer or facet-specific happiness measures to improve convergent validity.

Table 5. Discriminant Validity: HTMT Ratios

	FCA	HAW	HW
HAW	0.762		
HW	0.714	0.643	
POS	0.671	0.665	0.737

Note. HTMT values below 0.90 indicate acceptable discriminant validity (Henseler et al., 2015).

Table 6. Fornell Larcker Criterion and Latent Variable Correlations

	FCA	HAW	HW	POS
FCA	0.750			
HAW	-0.589	0.650		
HW	-0.772	0.533	0.748	
POS	-0.525	0.707	0.596	0.754

Note. Diagonal values (bold) represent the square root of AVE. Off-diagonal values are latent variable correlations.

4.2 Structural Model and Hypothesis Testing

Table 7 and Figure 3 present the path coefficients, standard deviations, t statistics, p values, and effect sizes from the bootstrapping analysis (5 000 resamples, one-tailed). The structural model explains $R^2 = 0.603$ ($R^2_{adj} = 0.598$) of variance in HAW, indicating strong explanatory power.

Figure 3. Structural Model

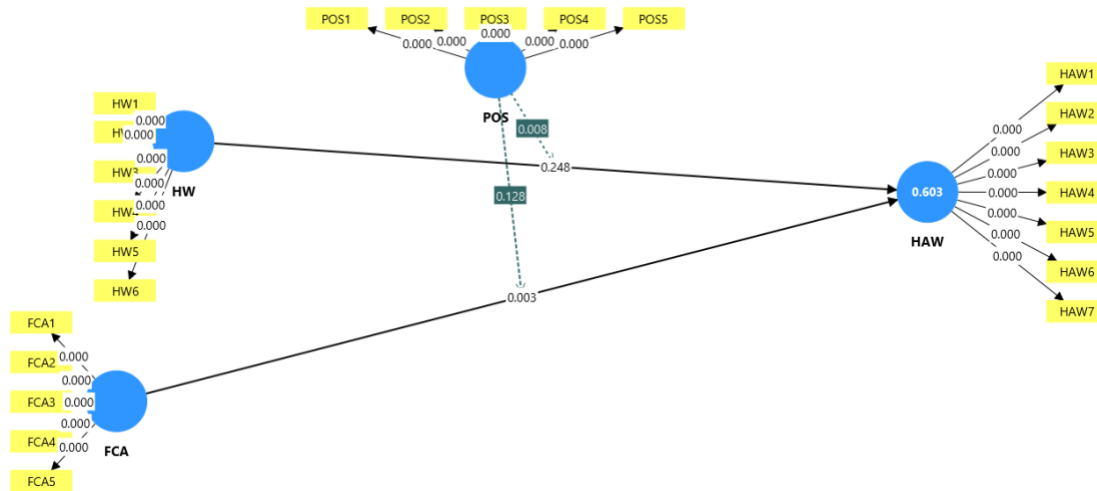


Table 7. Path Coefficients, Hypothesis Testing Results, and Effect Sizes (PLS-SEM)

Path	β	M	SD	T	p	f ²	Decision
H1: HW → HAW	0.043	0.054	0.063	0.681	0.248	0.002	Not Supported
H2: FCA → HAW	-0.265	-0.275	0.097	2.722	0.003**	0.065	Supported
POS → HAW	0.593	0.580	0.076	7.803	< .001***	0.500	
H3: POS × FCA → HAW	0.101	0.082	0.089	1.138	0.128	0.011	Not Supported
H4: POS × HW → HAW	0.169	0.153	0.070	2.423	0.008**	0.040	Supported

Note. β = original standardised path coefficient; M = bootstrap mean; SD = standard deviation; T = t statistic. $R^2 = 0.603$, $R^2_{adj} = 0.598$. f^2 benchmarks: 0.02 = small, 0.15 = medium, 0.35 = large (Cohen, 1988). ** $p < .01$; *** $p < .001$.

4.3 Simple Slope Analysis

For the significant $POS \times HW$ moderation ($\beta = 0.169$, $p = .008$, $f^2 = 0.040$), simple slope analysis at ± 1 SD of POS showed that the positive effect of hybrid work on HAW was significant at high POS (+1 SD: $\beta = 0.211$, $p = .008$) and non-significant at low POS (-1 SD: $\beta = -0.126$, $p = .105$), with the mean-level effect at $\beta = 0.043$ (non-significant). This pattern demonstrates that organisational support amplifies the well-being benefits of hybrid work, consistent with a resource-complementarity interpretation within COR theory. For the FCA–HAW relationship, simple slope analysis showed the negative effect was significant at low POS (-1 SD: $\beta = -0.366$, $p = .002$) and at mean POS ($\beta = -0.265$, $p = .003$), but non-significant at high POS (+1 SD: $\beta = -0.164$, $p = .119$). Although the interaction term did not reach statistical significance ($f^2 = 0.011$), this directionally consistent pattern warrants investigation with larger samples.

5. Discussion

Three features of the results carry particular significance. First, FCA emerged as a substantive negative predictor of HAW even after accounting for hybrid work and POS, providing the first quantitative evidence that forward-looking, AI era career anxiety depresses well-being in a developing-country IT workforce. Second, hybrid work had no direct effect on HAW, challenging the unconditional optimism of much of the post-pandemic literature. Third, POS moderated the two paths asymmetrically: it amplified hybrid work's benefit but failed to buffer FCA. This asymmetric pattern not merely the individual paths is the study's distinctive contribution, identifying a boundary condition for COR's resource-buffering principle and refining JD-R's treatment of resource-complementarity.

H1 (Hybrid Work \rightarrow HAW): Not Supported. The direct effect was negligible ($\beta = 0.043$, $p = .248$; $f^2 = 0.002$), consistent with conditional accounts of hybrid work (Bloom et al., 2024; Gajendran et al., 2024). Three contextual factors plausibly explain the null: (a) cultural and managerial control norms in Pakistan that emphasise physical presence may dilute autonomy benefits; (b) hybrid work may introduce new demands technostress, blurred boundaries exacerbated by extended-family living arrangements, and visibility anxiety about promotions (Tasneem et al., 2026); and (c) without equitable evaluation and inclusive career development, the flexibility may remain psychologically inert.

H2 (FCA \rightarrow HAW): Supported. FCA significantly and negatively predicted HAW ($\beta = -0.265$, $p = .003$; $f^2 = 0.065$), supporting COR's primacy-of-resource-loss principle and extending prior work on retrospective job insecurity (De Witte et al., 2015) into forward-looking, AI-era career anxiety. FCA captures not mere fear of job loss but deeper apprehension about professional

obsolescence (Brougham & Haar, 2018; Chen et al., 2025). For women in Pakistan's IT sector navigating glass-ceiling perceptions, career-break penalties, and AI-driven disruption this result underscores the urgency of targeted, forward-looking career interventions rather than generic well-being measures.

H3 (POS × FCA → HAW): Not Supported. POS did not significantly moderate the FCA& HAW relationship ($\beta = 0.101$, $p = .128$; $f^2 = 0.011$). This null is theoretically informative: COR predicts that buffering efficacy depends on congruence between the threat and the deployed resource (Hobfoll et al., 2018). FCA is a cognitive appraisal process rumination about competence and replaceability (Tsai et al., 2017) whereas POS signals organisational valuation and may not directly address these self-referential cognitions, consistent with Arbona et al. (2021) and Caesens and Stinglhamber (2020).

H4 (POS × HW → HAW): Supported. POS significantly amplified the hybrid work & HAW relationship ($\beta = 0.169$, $p = .008$; $f^2 = 0.040$). Simple-slope analysis showed hybrid work's benefit was significant only at high POS (+1 SD: $\beta = 0.211$, $p = .008$) and negligible at low POS. This resource-complementarity pattern is consistent with COR's gain-spiral logic and replicates Kurtessis et al.'s (2017) meta-analysis in a context where organisational support is structurally scarce.

5. Conclusion

This study examined how hybrid work, future career anxiety, and perceived organisational support jointly shape happiness at work among 348 working women in Pakistan's IT industry. FCA is a significant negative predictor of HAW ($f^2 = 0.065$), consistent with COR theory's resource-depletion mechanism. POS is the dominant predictor ($f^2 = 0.500$) and powerfully amplifies hybrid work's well-being benefits ($f^2 = 0.040$). Hybrid work alone does not predict HAW, underscoring the critical importance of organisational context. POS did not buffer the FCA & HAW relationship, suggesting that career anxiety requires targeted psychological interventions including AI literacy programmes, structured mentoring, and cognitive reframing beyond generic organisational support. These findings advance JD-R and COR frameworks into the hybrid work era within a gendered, developing country context, with implications for organisations, policymakers, and scholars seeking to promote sustainable happiness at work for women in technology.

5.1 Theoretical Contributions

The study makes three interconnected contributions to JD-R and COR theorising in the hybrid-work era:

- **Conditional resource activation.** Hybrid work operates as a conditional rather than universal job resource within JD-R's motivational pathway. This moves beyond the descriptive observation of heterogeneous outcomes (Gajendran et al., 2024; McPhail et al., 2024) to an explicit test of when the latent resource is activated. The closest empirical work

Kumari et al.'s (2025) Indian study of hybrid work, engagement, and performance did not integrate COR, examine FCA, or test POS moderation; the present study embeds hybrid work within a demands resources moderation framework in a gendered, developing-country context that prior research has overlooked.

- **FCA as a distinct forward-looking demand.** We provide quantitative evidence that FCA functions as a distinct demand within COR, qualitatively different from retrospective job insecurity (De Witte et al., 2015) and immediate technostress (Scholze & Hecker, 2024). FCA's negative effect on HAW ($f^2 = 0.065$) presents an important empirical confirmation that AI era career anxiety carries consequential well-being implications beyond scale validation (Brougham & Haar, 2018; Chen et al., 2025), suggesting the JD-R demands taxonomy needs a category for longer-horizon, identity-relevant demands.
- **POS as a domain-specific moderator with asymmetric effectiveness.** POS amplifies hybrid work benefits (H4) but fails to buffer career anxiety (H3). This asymmetry answers Caesens and Stinglhamber's (2020) call for a more nuanced view of organisational support: rather than a universal stress buffer, POS is better modelled as a context dependent moderator whose effectiveness depends on congruence between the resource it supplies and the demand it offsets. Identifying this boundary condition for COR's buffering principle while supporting its gain-spiral principle refines both JD-R and COR theory.

5.2 Practical Implications

For HR managers. (1) Audit whether hybrid work policies are accompanied by POS building mechanisms equitable performance evaluation that does not penalise remote visibility, transparent promotion criteria, and regular manager check-ins because hybrid work alone does not improve well-being. (2) Design targeted FCA interventions: AI-literacy workshops that reframe AI as a career-augmentation tool; structured mentoring pairing junior women with senior female leaders who have navigated career transitions; and transparent internal communication about how the organisation plans to support employees through AI driven transitions. (3) Invest in subsidised childcare currently provided by only 27% of Pakistani employers (IFC, 2021) as a tangible POS signal with disproportionate impact in resource-scarce contexts.

For policymakers. (1) Government bodies such as P@SHA and PSEB should develop national talent-retention frameworks combining flexible-work facilitation with subsidised childcare, anti-harassment enforcement, leadership development for women, and sector-wide AI-reskilling initiatives. (2) The planned expansion to 250 e-Rozgaar centres by FY 2027 should embed high POS organisational cultures, because structural investments yield limited well-being returns without complementary support. (3) Adopt mandatory gender targets such as the OICCI (2024) proposal of 30% women in management supported by our evidence that POS rich environments generate disproportionate HAW returns for women.



International relevance. While our sample is drawn from Pakistan's IT sector, three findings travel beyond it. First, the conditional-resource proposition is consistent with evidence from China (Bloom et al., 2024), meta-analytic syntheses spanning multiple countries (Gajendran et al., 2024), and post-COVID reviews (McPhail et al., 2024), suggesting the mechanism generalises across contexts where organisational support varies. Second, the FCA & well-being link is relevant wherever AI-driven disruption creates career uncertainty, including South Asian, East Asian, and African IT sectors. Third, the asymmetric moderation pattern offers a testable boundary condition for COR theory, replicable across cultural and sectoral contexts.

5.3 Limitations and Future Research

This study has several limitations. First, the cross-sectional design precludes causal inference. Longitudinal panel data would allow examination of how FCA trajectories interact with hybrid work and POS over time and would enable testing of COR's gain and loss spirals as dynamic processes.

Second, the purposive convenience sampling strategy limits generalisability. Although purposive criteria ensured theoretical relevance, the convenience elements distribution via LinkedIn and professional networks may overrepresent digitally active, English-proficient, and urban women, potentially underrepresenting those in smaller cities or less digitally connected segments of the IT workforce. Future research should employ probability sampling where feasible or use multi-stage stratified approaches.

Third, the sample is limited to women in Pakistan's IT sector. Future research should replicate this model in other sectors (healthcare, education, manufacturing) and cultural contexts (South Asia broadly, East Asian IT hubs) to assess boundary conditions. Comparative studies examining whether $POS \times HW$ dynamics differ by gender would enrich understanding.

Fourth, the relatively high bivariate correlation between FCA and HW ($r = -0.772$) warrants attention. Although HTMT ratios confirm discriminant validity, employing longer, more differentiated scales would help ensure cleaner construct separation.

Fifth, the non-significant $POS \times FCA$ interaction warrants further investigation; qualitative research exploring why career anxiety resists organisational buffering would provide valuable theoretical refinement. Future studies should examine additional moderators including growth mindset, social support from family and peers, digital self-efficacy, and engagement with AI-literacy programmes.

Acknowledgements

The author(s) gratefully acknowledge the support of Putra Business School, Universiti Putra Malaysia, for providing academic guidance and resources to conduct this research. We also extend our thanks to the participating IT professionals in Pakistan who generously contributed their time to this study. We confirm that the manuscript is original, has not been published previously, and is not under consideration by any other publication. All authors have approved the final version and have no conflict of interest to declare.

Thank you for considering our manuscript for publication. We look forward to your favorable response.

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