

BEYOND WORKLOAD: THE DIRECT EFFECT OF DIGITAL INFRASTRUCTURE INSTABILITY AND AFTER-HOURS CONNECTIVITY ON IT PROFESSIONAL TURNOVER

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Abstract

Purpose: This study examined the differential effects of infrastructural instability, after-hours connectivity pressure, and quantitative workload on turnover intention among information technology professionals employed in the fast-moving consumer goods and banking sectors of developing countries.

Methodology: A quantitative, cross-sectional survey design was employed, collecting data from 150 IT practitioners through a structured, self-administered questionnaire. Standard Multiple Linear Regression was utilized to assess the independent contributions of each predictor variable to turnover intention.

Findings: Quantitative workload ($\beta = 0.457$, $p < 0.001$) and after-hours connectivity pressure ($\beta = 0.447$, $p < 0.001$) emerged as significant, positive predictors of turnover intention. Contrary to expectations, infrastructural instability demonstrated a negligible and statistically non-significant effect ($\beta = 0.002$, $p = 0.979$). All constructs exhibited satisfactory internal consistency, with Cronbach's alpha values ranging from 0.812 to 0.897.

Practical Implications: Organizations should prioritize workload regulation and codify formal boundaries governing after-hours digital communication to mitigate attrition risks. Investment in backup power and connectivity solutions, while beneficial for operational continuity, may not directly reduce turnover intentions as employees appear habituated to infrastructural deficiencies.

Originality/Value: This research extends technostress and turnover literature into an infrastructurally challenged developing economy context, challenging the universal applicability of Western-centric models. It empirically isolates infrastructural and cultural digital stressors from conventional workload measures, offering context-sensitive evidence for HR policy formulation in the IT sector of the developing countries.

INTRODUCTION

Voluntary employee exit has become one of the most pressing operational concerns for information technology (IT) sector within the developing countries. Despite the industry's rapid export growth across the globe, many software houses operating in developing countries report

that nearly a quarter of technical staff switch employers within a given year, a figure that has climbed steadily since 2018 (ProPakistani, 2024). Much of the scholarly explanation for this churn borrows from a global literature that treats technostress, the psychological strain produced by information and communication technology

(ICT) demands, as a near-universal driver of employee withdrawal (Tarafdar et al., 2007; Ragu-Nathan et al., 2008). Within this tradition, researchers have repeatedly linked technostress to reduced job satisfaction, elevated burnout, and higher turnover intention across sectors as varied as software engineering, education, and financial services (Brooks et al., 2023; Wang & Yao, 2023; Weerawarna & Chandrasekara, 2022). The job demands-resources (JD-R) framework, which frames turnover as the end point of an imbalance between excessive demands and insufficient recovery resources, remains the dominant lens through which this relationship is interpreted (Bakker & Demerouti, 2017; Sharma et al., 2025).

Yet this global literature has been built almost entirely on infrastructural assumptions that do not hold in developing countries. Studies from China, and Western economies model technostress through constructs such as techno-overload, techno-complexity, and role ambiguity, implicitly assuming a stable digital environment in which power and connectivity are reliable background conditions rather than active stressors (Bao et al., 2024; He et al., 2024). In developing countries like India and Pakistan, that assumption breaks down. Chronic electricity shortfalls have been documented as a persistent drag on firm-level productivity, profitability, and access to financing for more than two decades (Xu et al., 2022; Akhtar et al., 2024), and unscheduled outages continue to disrupt daily commercial and industrial operations (Shah et al., 2023). For an IT professional, a scheduled or unscheduled outage is not a background inconvenience; it is a direct interruption of the digital task itself, a dropped deployment, a lost remote session, a missed client call. This is a structurally different stressor from the workload or role-ambiguity constructs that dominate the existing technostress models, yet it has not been isolated and tested as an independent predictor of turnover intention in a Developing country's IT sample.

A second, culturally specific stressor compounds this problem. Instant-messaging platforms and WhatsApp in particular, has become the default

channel through which managers issue after-hours instructions, creating an expectation of continuous availability that blurs the boundary between work and personal time (ProPakistani, 2024). This pattern mirrors what the international literature calls workplace telepressure after hours, the preoccupation with, and urge to respond immediately to, work-related messages outside contracted hours (He et al., 2024; Barber et al., 2023). Telepressure has been linked to impaired recovery, evening rumination, and next-day emotional exhaustion (Barber et al., 2024; Ma, 2026), and organizational disconnection policies have proven largely ineffective at curbing it because the underlying driver is an informal, hierarchical expectation rather than a written rule (Barber et al., 2023). In a developing country comparatively hierarchical and high power-distance workplace culture, this expectation is amplified: a supervisor's late-night WhatsApp message functions less as a request than as an implicit command, and non-response carries a perceived career cost that has not yet been captured in any local turnover model.

In many developing countries, the IT sector loses skilled staff at a rate that industry surveys place close to one-third of the technical workforce annually (ProPakistani, 2024). HR interventions designed to address this loss are drawn almost exclusively from global research that emphasizes reducing task complexity and workload (Ong et al., 2023; Hariyanto et al., 2022; Imaroh et al., 2023). This emphasis leaves two locally salient and empirically distinct stressors, infrastructural instability and after-hours connectivity pressure, largely unexamined as direct, independent predictors of turnover intention, separate from the effect of workload itself. Without a regression model that isolates the unique contribution of each predictor, HR policy in India and Pakistan risks investing in workload-reduction initiatives while the stronger, infrastructural and cultural drivers of attrition remain unaddressed.

This study aims to (1) quantify the direct effect of infrastructure instability on turnover intention among IT professionals from developing countries like India and Pakistan; (2) quantify the direct effect of after-hours connectivity pressure

on turnover intention; and (3) determine whether these two effects remain significant predictors of turnover intention when quantitative workload is entered simultaneously into a multiple regression model.

By statistically separating infrastructural and cultural digital stressors from conventional workload measures, this study offers the policymakers and IT employers in developing countries an evidence base for two concrete interventions that are largely absent from current HR practice: investment in backup power and connectivity solutions, and the formal codification of after-hours communication boundaries (Barber et al., 2023). It also extends the technostress–turnover literature (Tarafdar et al., 2007; Bao et al., 2024) into an infrastructural context that has, until now, been treated only as a macroeconomic or firm-productivity issue (Akhtar et al., 2024) rather than an individual-level psychological stressor with direct HR consequences.

Methodology

This investigation employed a quantitative, cross-sectional survey design to examine the direct associations between three predictor constructs and a single criterion variable, with data collected at one temporal point. The cross-sectional framework was deemed appropriate as the research objective centered on estimating the magnitude and statistical significance of prevailing relationships, rather than inferring causal ordering—a methodological choice consistent with established technostress and employee turnover investigations that have utilized analogous designs (Sharma et al., 2025; Weerawarna & Chandrasekara, 2022).

The study population comprised information technology professionals currently serving in the fast-moving consumer goods (FMCG) and banking sectors of developing countries. These particular industries were purposively selected owing to the embedded nature of their IT units within large, vertically structured organizational frameworks, wherein supervisory after-hours digital communication via messaging applications

constitutes a normalized managerial practice. A minimum target sample of 150 respondents was established, selected from two different developing nations India and Pakistan, and participants were recruited through a combination of purposive referral and snowball sampling techniques, facilitated via professional platforms and organizational human resource intermediaries. This sampling approach and target size align with methodological precedents documented in comparable regional investigations of technostress dynamics (Weerawarna & Chandrasekara, 2022; Hang et al., 2022).

Primary data were gathered using a structured, self-administered survey instrument composed entirely of closed-ended items measured on 5-point Likert-type response formats (anchored from 1 = Strongly Disagree to 5 = Strongly Agree). The constructs of Infrastructure Instability and After-Hours Connectivity Pressure were operationalized through researcher-developed items. Quantitative Workload was assessed using adapted item wordings derived from established job-demand scales previously validated in workload-attrition research (Ong et al., 2023; Imaroh et al., 2023). The dependent construct, Turnover Intention was quantified using the psychometrically validated instrument originally developed by Mobley et al. (1978), which has been extensively utilized in organizational behavior research.

Statistical analysis was conducted using Standard Multiple Linear Regression with the Enter method, whereby all three predictor variables were simultaneously entered into the model to evaluate their unique, independent contributions to Turnover Intention. The final regression output was reported with the Adjusted R^2 statistic to denote the proportion of total variance explained by the combined predictor set, alongside unstandardized and standardized Beta coefficients, corresponding t-statistics, and probability values (p-values) for each independent variable—adhering to standard reporting protocols observed in regression-oriented turnover literature (Ong et al., 2023).

Data Analysis and Discussion

Table 1: Demographic Profile of Respondents (N = 150)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	84	56.0
	Female	66	44.0
Age	20–29 years	42	28.0
	30–39 years	58	38.7
	40–49 years	36	24.0
	50 years and above	14	9.3
Education	Bachelor's Degree	71	47.3
	Master's Degree	62	41.3
	PhD / Other Professional Qualification	17	11.3
Work Experience	Less than 2 years	24	16.0
	2–5 years	51	34.0
	6–10 years	46	30.7
	More than 10 years	29	19.3
Job Level	Entry-level / Junior	48	32.0
	Mid-level	66	44.0
	Senior / Managerial	36	24.0

The sample comprised 150 IT professionals, with a near-balanced gender distribution (56% male, 44% female). The majority was aged 30–39 years (38.7%) and held Bachelor's (47.3%) or Master's (41.3%) degrees. Most respondents possessed 2–10 years of work experience (64.7%), with mid-level employees constituting the largest job-level category (44%).

Table 2: Reliability Statistics for Study Constructs

Construct	No. of Items	N	Cronbach's Alpha	Interpretation
Infrastructure Instability (II)	5	150	0.812	Good
After-Hours Connectivity Pressure (AHCP)	5	150	0.897	Excellent
Quantitative Workload (QWL)	5	150	0.878	Good
Turnover Intention (TI)	5	150	0.880	Good

All four constructs demonstrated satisfactory internal consistency, with Cronbach's alpha coefficients ranging from 0.812 to 0.897, exceeding the conventional 0.70 threshold. After-Hours Connectivity Pressure exhibited the

highest reliability ($\alpha = 0.897$), while Infrastructure Instability showed the lowest yet acceptable value ($\alpha = 0.812$), confirming the instrument's measurement dependability.

Table 3: Pearson Correlation Matrix

Variable	TI	II	AHCP	QWL
Turnover Intention (TI)	1.000			
Infrastructure Instability (II)	0.649**	1.000		

Variable	TI	II	AHCP	QWL
After-Hours Connectivity Pressure (AHCP)	0.777**	0.766**	1.000	
Quantitative Workload (QWL)	0.780**	0.666**	0.719**	1.000

All predictor variables exhibited statistically significant positive correlations with Turnover Intention ($p < 0.01$). Quantitative Workload demonstrated the strongest bivariate association ($r = 0.780$), followed by After-Hours Connectivity

Pressure ($r = 0.777$). Notably, the three independent variables were moderately intercorrelated (ranging from 0.666 to 0.766), warranting multicollinearity assessment.

Table 4: Regression Coefficients

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.	VIF
(Constant)	0.611	0.183	—	3.334	0.001	—
Infrastructure Instability (II)	0.002	0.077	0.002	0.026	0.979	2.591
After-Hours Connectivity Pressure (AHCP)	0.405	0.070	0.447	5.767	<0.001	2.982
Quantitative Workload (QWL)	0.454	0.066	0.457	6.828	<0.001	2.218

Dependent Variable: Turnover Intention (TI)

The regression model revealed that After-Hours Connectivity Pressure ($\beta = 0.447$, $p < 0.001$) and Quantitative Workload ($\beta = 0.457$, $p < 0.001$) significantly predicted Turnover Intention. Conversely, Infrastructure Instability yielded a negligible, non-significant effect ($\beta = 0.002$, $p = 0.979$). Variance Inflation Factor values remained below 3.0, confirming the absence of multicollinearity concerns.

This investigation set out to quantify the distinct contributions of infrastructural unreliability, after-hours digital communication demands, and assigned task volume toward IT employees' propensity to leave their organizations, focusing specifically on FMCG and banking sectors operating in the developing countries. The empirical outcomes present a mixed picture that partially corroborates existing technostress frameworks while simultaneously challenging certain assumptions prevalent in Western-centric turnover literature.

Task volume emerged as the dominant driver of departure intentions ($\beta = 0.457$, $p < 0.001$), a finding that resonates strongly with earlier scholarship documenting workload as a principal antecedent of attrition (Ong et al., 2023; Imaroh

et al., 2023; Hariyanto et al., 2022). This observation lends empirical weight to the job demands-resources perspective, which posits that overwhelming occupational requirements progressively drain employees' psychological reserves, ultimately fostering disengagement and withdrawal (Bakker & Demerouti, 2017). Likewise, the pressure to remain electronically accessible outside standard working hours demonstrated substantial predictive power ($\beta = 0.447$, $p < 0.001$), reinforcing contemporary research on workplace telepressure and its adverse consequences for workforce stability (Barber et al., 2024; Barber et al., 2023; He et al., 2024; Ma, 2026). The expectation of perpetual availability compels IT practitioners to sustain cognitive engagement with occupational matters during personal time, generating rumination and affective exhaustion that precipitate exit considerations (Brooks et al., 2023; Bao et al., 2024).

Unexpectedly, infrastructural instability yielded a trivial and statistically insignificant coefficient ($\beta = 0.002$, $p = 0.979$), contradicting the presupposition that well-documented electricity shortfalls and connectivity disruptions that are

often a staple in the developing nations directly provoke IT professionals to contemplate resignation (Akhtar et al., 2024; Xu et al., 2022; Shah et al., 2023). A compelling interpretation posits that technology workers have habituated to these recurrent failures, perceiving them as inevitable occupational hazards rather than exceptional stressors warranting career change. Alternatively, the null finding may indicate that infrastructural deficiencies operate through indirect channels—perhaps amplifying workload pressures or exacerbating connectivity demands—rather than exerting standalone effects. This reasoning aligns with Farooq et al. (2022), who noted that environmental challenges in emerging economies frequently manifest indirect influences on turnover via intervening psychological states.

The theoretical ramifications are noteworthy. Firstly, these results extend JD-R theory by demonstrating that psychosocial expectations (connectivity demands) and quantitative requirements (task volume) produce comparable direct influences on exit intentions, whereas environmental-technical impediments appear to require intermediary mechanisms to shape withdrawal cognitions. Secondly, the evidence questions the cross-cultural generalizability of technostress models formulated within developed nation contexts (Ragu-Nathan et al., 2008; Tarafdar et al., 2007; Wang & Yao, 2023), implying that employees in less industrialized settings may develop adaptive coping responses to chronic infrastructural deficiencies.

From a practical standpoint, organizational interventions should prioritize workload regulation and the establishment of explicit boundaries governing after-hours electronic communication to mitigate attrition risks. Implementing organizational policies that discourage after-hours messaging, as advocated by Barber et al. (2023), alongside cultivating supportive workplace climates (Hang et al., 2022), may yield greater retention dividends than attempting to resolve infrastructural challenges directly. Given global ongoing energy constraints (ProPakistan, 2024), enterprises would be prudent to invest in alternative power sources

and adaptable working arrangements to sustain operational continuity while safeguarding employee well-being.

Several methodological constraints merit acknowledgment. The cross-sectional orientation precludes definitive causal interpretations, necessitating future longitudinal or experimental investigations to establish temporal precedence (Bao et al., 2024; Islam & Amin, 2022). Furthermore, sample restriction to FMCG and banking organizations often limits generalizability across industries and cultural settings (Weikel & Fisher, 2022; Winfield & Paris, 2024). The reliance on self-reported assessments introduces susceptibility to common method variance, notwithstanding satisfactory internal consistency coefficients. Subsequent research should incorporate objective attrition records and supervisor-rated performance indicators to augment validity (Sharma et al., 2025; Weerawarna & Chandrasekara, 2022). Additionally, examining moderating influences—including supervisory support, technological proficiency, or stress-coping strategies—could illuminate contextual boundary conditions governing these relationships (Hang et al., 2022; Brooks et al., 2023).

Conclusion

This research empirically established that task volume and after-hours digital connectivity demands significantly predict IT professionals' turnover intentions within the FMCG and banking sectors operating in the developing nations. Conversely, infrastructural unreliability exhibited no direct influence on departure cognitions, suggesting that technology workers have adapted to persistent power and connectivity failures. Organizations should prioritize workload management and implement policies limiting after-hours electronic communication to enhance retention. The findings challenge the universal applicability of Western technostress models and underscore the necessity of context-sensitive turnover frameworks. Future longitudinal investigations should examine mediating mechanisms linking

environmental stressors to withdrawal outcomes in developing economy settings.

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