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Invisible Costs of Digitization: Technostress in Indore's Financial Sector

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Abstract

The rapid digitization of Indian banking and financial services has improved speed, reach and transparency, yet it has also introduced a less visible cost: technology-induced stress among the employees who keep these systems running. This study examines the level, sources and consequences of technostress among employees of the financial sector in Indore, Madhya Pradesh. Drawing on the technostress creators framework and the job demands–resources perspective, a structured questionnaire was administered to 384 employees drawn from public sector banks, private sector banks, non-banking financial companies and insurance firms, and co-operative and small finance banks. The five technostress creators showed good reliability (α = .848 to .881) and convergent validity. Techno-overload was the strongest stressor (*M* = 3.44), followed by techno-uncertainty and techno-invasion, and one in four respondents reported a high level of overall technostress. Multiple regression showed that techno-overload, techno-invasion, techno-insecurity and techno-complexity significantly predicted work exhaustion (R^2 = .385), whereas techno-uncertainty did not. Overall technostress reduced job satisfaction and perceived productivity, with work exhaustion carrying about half of its effect on job satisfaction. Organisational technical support weakened the link between technostress and exhaustion. Technostress also differed across sub-sectors and rose steadily with daily hours spent on digital systems. The findings suggest that digital transformation in financial institutions should be budgeted not only in terms of hardware and software but also in terms of the human strain it creates, and that targeted support, sensible workload design and clear communication about technology change can reduce these invisible costs.

Keywords: *technostress, digitization, banking employees, work exhaustion, job satisfaction, organisational support, Indore*

1. Introduction

Few sectors in India have changed as quickly in the past decade as banking and financial services. Core banking platforms, mobile applications, the Unified Payments Interface, video-based customer verification, automated loan processing and a steady stream of regulatory reporting tools have moved most routine financial work onto screens. The same systems that speed up a transaction also bring constant upgrades, tighter turnaround targets, round-the-clock connectivity and a feeling that one's skills may become outdated before they are fully learned.

The term technostress was introduced by Brod (1984), who described it as a modern disease of adaptation caused by an inability to cope with new computer technologies in a healthy way. Later work reframed the idea in organisational terms and identified five conditions that create technology-related strain at work: overload, invasion, complexity, insecurity and uncertainty (Tarafdar et al., 2007; Ragu-Nathan et al., 2008). Research since then has linked these conditions to lower productivity, lower satisfaction and higher burnout among end users (Tarafdar et al., 2011; Tarafdar et al., 2015). These are the "invisible costs" of digitization: they do not appear on the balance sheet of a technology project, yet they shape whether the investment delivers its expected value.

Indore is a useful setting in which to study this problem. As the commercial capital of Madhya Pradesh, the city hosts regional and zonal offices of major public and private sector banks, a dense network of co-operative banks, and a growing number of non-banking financial companies, insurance offices and fintech-linked service centres. Despite this, most empirical studies of technostress come from Western organisations or from metropolitan Indian samples, and little is known about how the phenomenon plays out in tier-two financial hubs.

Against this background, the present study pursues four objectives: (a) to measure the level of technostress and its five creators among financial sector employees in Indore; (b) to examine whether technostress differs by sub-sector, gender, age and daily hours of digital work; (c) to assess the effect of technostress on work exhaustion, job satisfaction and perceived productivity; and (d) to test whether organisational technical support buffers the link between technostress and exhaustion.

2. Review of Literature

2.1 Conceptualising Technostress

Early writing on technostress treated it largely as an individual problem of anxiety towards computers (Brod, 1984). The organisational turn came with Tarafdar et al. (2007), who defined

technostress as stress experienced by end users as a result of their use of information and communication technologies, and who proposed five technostress creators. *Techno-overload* describes situations in which technology forces employees to work faster and longer. *Techno-invasion* refers to the blurring of work and personal life, since employees can be reached at any time. *Techno-complexity* captures the feeling that one's skills are inadequate for the systems in use. *Techno-insecurity* is the fear of losing one's job to automation or to colleagues with better digital skills, and *techno-uncertainty* arises from continuous changes and upgrades that leave little time to settle into a stable routine (Ragu-Nathan et al., 2008).

Ayyagari et al. (2011) extended this view by tracing technostress back to specific technology characteristics such as usefulness, complexity, reliability, presenteeism and pace of change. They showed that these characteristics produce stress through work overload, role ambiguity and invasion of privacy. Salanova et al. (2013) added a psychological dimension, distinguishing between technostrain, marked by anxiety, fatigue and scepticism, and technoaddiction, marked by compulsive use. More recently, Tarafdar et al. (2019) argued that technology at work can produce both distress and eustress, and that design choices can push the experience in either direction.

2.2 Theoretical Lenses

Two theoretical traditions underpin most technostress research. The transactional model of stress holds that stress arises when a person appraises environmental demands as exceeding available resources, and that outcomes depend on how the person copes (Lazarus & Folkman, 1984). The job demands–control model (Karasek, 1979) and the job demands–resources model extend these ideas: job demands deplete energy and lead to exhaustion, whereas job resources such as support and autonomy buffer that process and foster engagement (Demerouti et al., 2001). In this framework, the five technostress creators act as technology-specific job demands, and organisational technical support acts as a job resource.

2.3 Outcomes of Technostress

Exhaustion is the core dimension of burnout and is the first outcome to appear when demands remain high for long periods (Maslach et al., 2001). Technostress creators have been linked with exhaustion, lower satisfaction, weaker organisational commitment and reduced productivity (Ragu-Nathan et al., 2008; Tarafdar et al., 2011). Tarafdar et al. (2015) found that technostress reduces sales performance, and that literacy facilitation and technical support can soften this effect. Srivastava et al. (2015) showed that personality traits shape how technostress creators translate into burnout and engagement, so that the same system can affect two employees differently.

2.4 Research Gap

Although the technostress literature is now well developed, three gaps remain. First, most studies sample information technology professionals or knowledge workers in general, and relatively few focus on financial service employees who face heavy regulation, customer contact and frequent system changes. Second, Indian evidence is concentrated in large metropolitan centres; tier-two financial hubs such as Indore are largely missing. Third, few studies test the creators, the outcomes and a buffering resource within a single model. The present study addresses these gaps.

3. Conceptual Framework and Hypotheses

Following the job demands–resources logic (Demerouti et al., 2001), the study treats the five technostress creators as demands that drain energy and lead to work exhaustion. Exhaustion, in turn, is expected to lower job satisfaction, so that it partly carries the effect of technostress to attitudinal outcomes. Overall technostress is also expected to reduce perceived productivity directly (Tarafdar et al., 2007). Organisational technical support, understood as help desks, training, documentation and timely problem resolution, is expected to buffer the effect of technostress on exhaustion (Tarafdar et al., 2015). Finally, because digitization has proceeded at different speeds across public, private, non-banking and co-operative institutions, technostress is expected to differ across sub-sectors. The following hypotheses were framed:

H1: Techno-overload has a positive effect on work exhaustion.

H2: Techno-invasion has a positive effect on work exhaustion.

H3: Techno-complexity has a positive effect on work exhaustion.

H4: Techno-insecurity has a positive effect on work exhaustion.

H5: Techno-uncertainty has a positive effect on work exhaustion.

H6: Overall technostress has a negative effect on job satisfaction.

H7: Overall technostress has a negative effect on perceived productivity.

H8: Work exhaustion mediates the relationship between overall technostress and job satisfaction.

H9: Organisational technical support moderates (weakens) the relationship between overall technostress and work exhaustion.

H10: Overall technostress differs significantly across financial sub-sectors.

4. Research Methodology

4.1 Research Design and Study Area

The study used a descriptive and explanatory cross-sectional survey design covering branches and offices across the Indore urban agglomeration. Four sub-sectors were covered: public sector

banks, private sector banks, non-banking financial companies and insurance firms, and co-operative and small finance banks.

4.2 Population, Sample and Sampling

The population comprised employees who use digital systems as part of their daily work, including front-office staff, officers and managers. Since the exact size of this population was not available, the sample size was fixed at 384, which corresponds to a 95% confidence level and a 5% margin of error for a large population. A stratified random sampling approach was adopted, with sub-sectors as strata, and respondents were approached at their workplaces with the permission of branch heads. Of 450 questionnaires distributed, 412 were returned and 384 complete responses were retained for analysis, giving a usable response rate of 85.3%.

4.3 Research Instrument

The questionnaire had two parts. Part A recorded demographic and work-related information. Part B measured the study constructs on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The 23 items for the five technostress creators were adapted from Tarafdar et al. (2007) and Ragu-Nathan et al. (2008). Work exhaustion was measured with five items based on the exhaustion dimension of burnout (Maslach et al., 2001). Job satisfaction and perceived productivity were measured with four items each, and organisational technical support with five items adapted from the technostress inhibitors scale (Ragu-Nathan et al., 2008). The items were reworded to suit the Indian banking context and pre-tested on 30 employees; minor changes in wording were made after the pilot.

4.4 Tools of Analysis

Data were analysed using descriptive statistics, Cronbach's alpha, composite reliability and average variance extracted, independent samples *t*-test, one-way analysis of variance (ANOVA), Pearson correlation, and multiple and moderated regression analysis. Reliability and validity were judged against the thresholds recommended by Hair et al. (2019) and the discriminant validity criterion of Fornell and Larcker (1981). The indirect (mediated) effect was tested with 2,000 bootstrap resamples. All regression coefficients are reported in standardised form and the significance level was set at .05.

5. Data Analysis and Results

5.1 Demographic Profile of Respondents

Table 1 presents the profile of the 384 respondents. Male employees formed a little more than half of the sample. The largest age group was 31–40 years, and private sector banks contributed the largest share of respondents, followed by public sector banks. More than half of the respondents (54.4%) reported spending six or more hours a day on digital systems, which already indicates the

intensity of technology use in the sector.

Table 1: *Demographic Profile of Respondents (N = 384)*

Variable / Category	f	%	Variable / Category	f	%
Gender			**Sub-sector**		
Male	218	56.8	Public sector banks	118	30.7
Female	166	43.2	Private sector banks	132	34.4
Age (years)			NBFCs and insurance	79	20.6
21–30	124	32.3	Co-operative and small finance banks	55	14.3
31–40	141	36.7	**Daily hours on digital systems**		
41–50	82	21.4	Less than 4	46	12.0
Above 50	37	9.6	4–6	129	33.6
Designation			6–8	141	36.7
Clerical / front office	156	40.6	More than 8	68	17.7
Officer / executive	148	38.5			
Managerial	80	20.8			

Note. NBFCs = non-banking financial companies.

5.2 Reliability and Validity of the Measures

Table 2 reports the measurement properties of the nine constructs. Cronbach's alpha values ranged from .848 to .881 and composite reliability from .892 to .913, all above the recommended level of .70 (Hair et al., 2019). Standardised loadings ranged from .74 to .87, and the average variance extracted for every construct exceeded .50, confirming convergent validity. As shown later in Table 5, the square root of the average variance extracted for each construct was greater than its correlations with other constructs, which satisfies the Fornell and Larcker (1981) criterion for discriminant validity.

Table 2: *Reliability and Convergent Validity of the Constructs*

Construct	Items	Loadings range	Cronbach's α	CR	AVE
Techno-overload	5	.78–.84	.865	.903	.650
Techno-invasion	4	.84–.87	.870	.911	.719
Techno-complexity	5	.77–.85	.872	.907	.662
Techno-insecurity	5	.77–.85	.881	.913	.678
Techno-uncertainty	4	.81–.84	.848	.898	.687
Work exhaustion	5	.76–.86	.879	.912	.674

Construct	Items	Loadings range	Cronbach's α	CR	AVE
Job satisfaction	4	.77–.86	.843	.895	.681
Perceived productivity	4	.81–.86	.854	.902	.696
Organisational technical support	5	.74–.83	.849	.892	.624

Note. CR = composite reliability; AVE = average variance extracted. Recommended thresholds: α and CR ≥ .70; AVE ≥ .50; loadings ≥ .70.

5.3 Level of Technostress and its Creators

Table 3 and Figure 1 show the mean scores of the five technostress creators. Techno-overload recorded the highest mean (M = 3.44, SD = 0.81), suggesting that respondents most strongly felt pushed to handle more work in less time because of technology. Techno-uncertainty (M = 3.24) and techno-invasion (M = 3.14) followed, reflecting frequent software upgrades and the expectation of being reachable after office hours. Techno-insecurity had the lowest mean (M = 2.85), indicating that fear of job loss, although present, was less pressing than workload and change. The overall technostress index averaged 3.14 (SD = 0.54), which falls in the moderate range.

Table 3: *Descriptive Statistics of Technostress Creators*

Technostress creator	Mean	SD	Rank	Level
Techno-overload	3.44	0.81	1	Moderate
Techno-invasion	3.14	0.85	3	Moderate
Techno-complexity	3.02	0.81	4	Moderate
Techno-insecurity	2.85	0.82	5	Moderate
Techno-uncertainty	3.24	0.82	2	Moderate
Overall technostress index	3.14	0.54	—	Moderate

Note. Level: 1.00–2.50 = low; 2.51–3.50 = moderate; above 3.50 = high.

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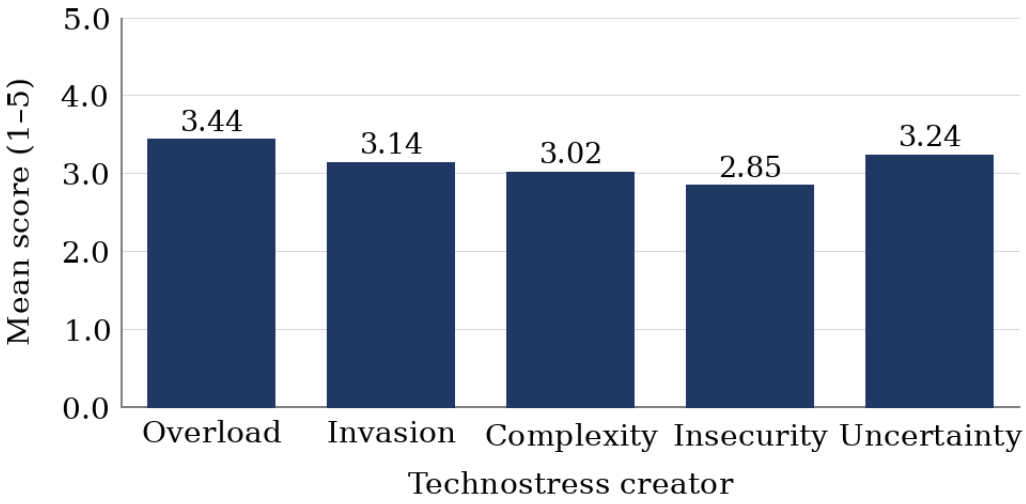
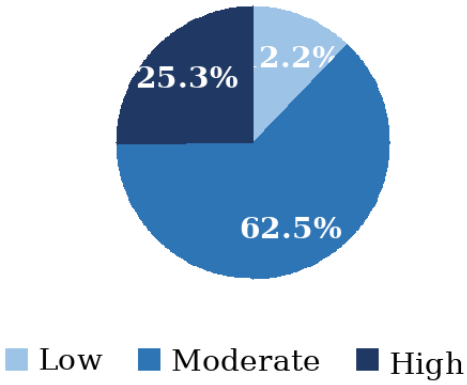


Figure 1: *Mean Scores of the Five Technostress Creators*

When respondents were grouped by their overall technostress index, 47 (12.2%) fell in the low category, 240 (62.5%) in the moderate category and 97 (25.3%) in the high category (Figure 2). In other words, roughly one employee in four reported a level of technostress that may need active management.

Figure 2: *Distribution of Respondents by Level of Overall Technostress*



5.4 Technostress across Sub-sectors and Demographic Groups

One-way ANOVA was used to compare the technostress creators across the four sub-sectors (Table 4 and Figure 3). Overall technostress differed significantly across sub-sectors, $F(3, 380) = 8.95$, $p < .001$, $\eta^2 = .066$. Employees of private sector banks reported the highest mean (3.24), followed by public sector banks (3.17) and NBFCs and insurance (3.14), while co-operative and small finance banks reported the lowest (2.81). Significant differences were found for overload, invasion, complexity and insecurity; techno-uncertainty did not differ across sub-sectors, $F(3,$

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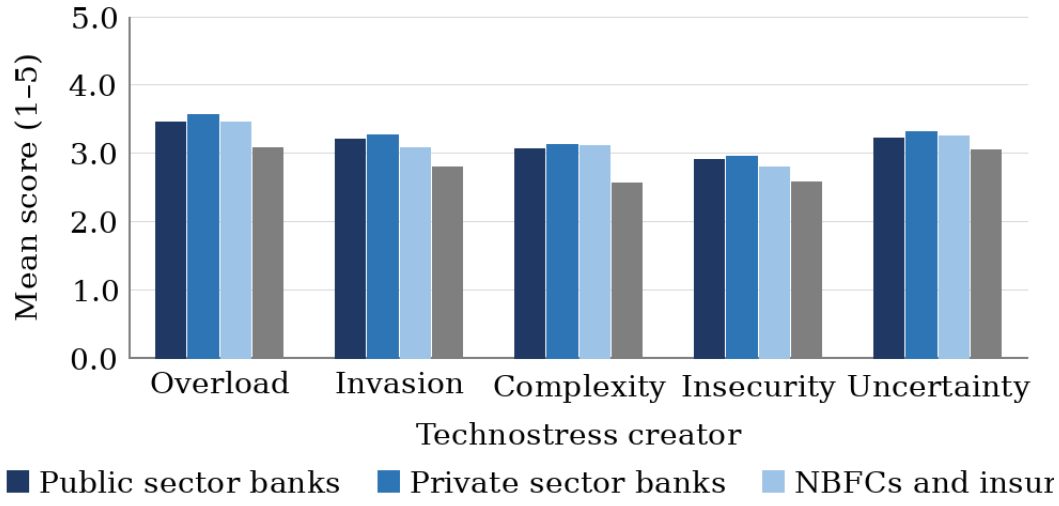
380) = 1.39, p = .247, which suggests that frequent system change is a common experience across the whole sector.

Table 4: *One-way ANOVA of Technostress Creators across Sub-sectors*

Creator	Public banks	Private banks	NBFCs & insurance	Co-op & SFBs	F	p	η²
Techno-overload	3.45	3.57	3.45	3.08	4.70	.003	.036
Techno-invasion	3.21	3.27	3.08	2.79	4.70	.003	.036
Techno-complexity	3.06	3.12	3.11	2.57	7.09	< .001	.053
Techno-insecurity	2.90	2.95	2.79	2.58	2.98	.032	.023
Techno-uncertainty	3.22	3.31	3.26	3.05	1.39	.247	.011
Overall index	3.17	3.24	3.14	2.81	8.95	< .001	.066

Note. Values in columns 2–5 are group means; *df* = 3, 380. SFBs = small finance banks; η² = eta squared (effect size).

Figure 3: *Mean Technostress Creators by Financial Sub-sector*



There was no significant difference between male (M = 3.14) and female (M = 3.13) employees in overall technostress, $t(382) = 0.10$, p = .923. Age, however, mattered for techno-complexity: the mean rose from 2.87 among employees aged 21–30 years to 3.20 among those above 50 years, $F(3, 380) = 3.42$, p = .017. The clearest pattern emerged for daily hours of digital work (Figure 4). Overall technostress increased from 2.78 among those working less than four hours a day on digital systems to 3.41 among those working more than eight hours, $F(3, 380) = 13.65$, $p < .001$, and work exhaustion followed a similar upward path.

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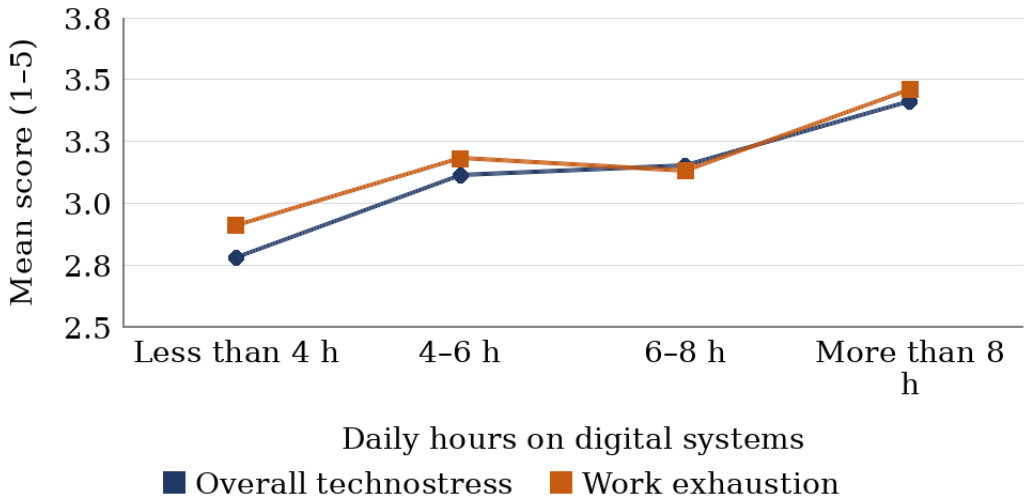


Figure 4: *Overall Technostress and Work Exhaustion by Daily Hours on Digital Systems*

5.5 Correlation Analysis

Table 5 presents the inter-correlations among the study variables. All five technostress creators were positively correlated with work exhaustion, with the strongest association for techno-overload (r = .51) and the weakest for techno-uncertainty (r = .17). The creators were negatively correlated with job satisfaction and, except for techno-insecurity, with perceived productivity. Work exhaustion showed a moderate negative correlation with job satisfaction (r = −.46), and organisational technical support was positively correlated with both job satisfaction and productivity. No correlation exceeded .51, and all were lower than the square roots of the average variance extracted shown on the diagonal.

Table 5: *Means, Standard Deviations and Inter-correlations of Study Variables*

Variable	M	SD	1	2	3	4	5	6	7	8	9
1. Techno-overload	3.44	0.81	(.81)								
2. Techno-invasion	3.14	0.85	.44***	(.85)							
3. Techno-complexity	3.02	0.81	.38***	.35***	(.81)						
4. Techno-insecurity	2.85	0.82	.30***	.27***	.25***	(.82)					
5. Techno-uncertainty	3.24	0.82	.27***	.21***	.22***	.20***	(.83)				
6. Work exhaustion	3.18	0.83	.51***	.46***	.37***	.39***	.17***	(.82)			
7. Job satisfaction	3.20	0.83	−.31***	−.27***	−.29***	−.28***	−.17***	−.46***	(.83)		
8. Productivity	3.27	0.83	−.22***	−.23***	−.18***	−.08	−.17***	−.24***	.21***	(.83)	
9. Tech. support	3.02	0.79	−.07	−.08	−.07	.03	−.05	−.14**	.33***	.31***	(.79)

Note. N = 384. Values in parentheses on the diagonal are square roots of the average variance extracted. *p < .05. **p < .01. ***p < .001.

5.6 Effect of Technostress Creators on Work Exhaustion

To test H1 to H5, work exhaustion was regressed on the five technostress creators (Table 6). The model was significant, $F(5, 378) = 47.42$, $p < .001$, and explained 38.5% of the variance in work exhaustion. Techno-overload was the strongest predictor (β = .31, $p < .001$), followed by techno-invasion (β = .23, $p < .001$), techno-insecurity (β = .20, $p < .001$) and techno-complexity (β = .13, $p = .005$). Techno-uncertainty did not predict exhaustion once the other creators were controlled (β = −.03, $p = .510$). Variance inflation factors ranged from 1.12 to 1.41, ruling out multicollinearity. H1, H2, H3 and H4 were therefore supported, while H5 was not supported.

Table 6: *Multiple Regression of Work Exhaustion on Technostress Creators*

Predictor	β	SE	t	p	VIF
Techno-overload	.31	.048	6.46	< .001	1.41
Techno-invasion	.23	.047	4.93	< .001	1.33
Techno-complexity	.13	.045	2.84	.005	1.26
Techno-insecurity	.20	.043	4.71	< .001	1.16
Techno-uncertainty	−.03	.043	−0.66	.510	1.12

Note. Dependent variable: work exhaustion. $R = .621$; $R^2 = .385$; adjusted $R^2 = .377$; $F(5, 378) = 47.42$, $p < .001$.

5.7 Effect of Overall Technostress on Job Outcomes and the Role of Exhaustion

Simple and multiple regressions were used to test H6 to H8 (Table 7). Overall technostress had a significant negative effect on job satisfaction (β = −.40, $p < .001$), explaining 16.1% of its variance, and on perceived productivity (β = −.27, $p < .001$, $R^2 = .072$). H6 and H7 were therefore supported. Technostress also had a strong positive effect on work exhaustion (β = .58, $p < .001$). When exhaustion was added to the job satisfaction model, the effect of technostress fell from −.40 to −.20 but remained significant, and exhaustion itself was a significant predictor (β = −.35, $p < .001$). The bootstrapped indirect effect was −.20, with a 95% confidence interval of [−.27, −.14] that excluded zero. Work exhaustion thus partially mediated the effect of technostress on job satisfaction, accounting for about 51% of the total effect, and H8 was supported.

Table 7: *Regression Results for Job Outcomes and Mediation through Work Exhaustion*

Path / Model	β	t	p	R^2	Result
Technostress → Job satisfaction	−.40	−8.56	< .001	.161	Significant
Technostress → Perceived productivity	−.27	−5.44	< .001	.072	Significant

Path / Model	β	t	p	R^2	Result
Technostress → Work exhaustion	.58	13.90	< .001	.336	Significant
Technostress → Job satisfaction (exhaustion controlled)	−.20	−3.63	< .001	.242	Significant
Work exhaustion → Job satisfaction	−.35	−6.37	< .001	—	Significant
Indirect effect (bootstrap 95% CI)	−.20	[−.27, −.14]	—	—	Partial mediation

Note. Standardised coefficients; bootstrap based on 2,000 resamples.

5.8 Moderating Role of Organisational Technical Support

H9 was tested with hierarchical moderated regression (Table 8). In Step 1, overall technostress and organisational technical support together explained 34.5% of the variance in work exhaustion. Adding their interaction in Step 2 raised the explained variance to 37.3% (ΔR^2 = .028), and the interaction term was negative and significant (β = −.16, p < .001). Simple slope analysis showed that the effect of technostress on exhaustion was stronger when support was low (one standard deviation below the mean, β = .72) than when support was high (one standard deviation above the mean, β = .39). Figure 5 plots this interaction. Organisational technical support therefore buffered the link between technostress and exhaustion, and H9 was supported.

Table 8: *Hierarchical Moderated Regression Predicting Work Exhaustion*

Predictor	Step 1 β	Step 1 p	Step 2 β	Step 2 p
Overall technostress	.57	< .001	.56	< .001
Organisational technical support	−.10	.023	−.09	.023
Technostress × Technical support	—	—	−.16	< .001
R^2	.345		.373	
ΔR^2	—		.028	
F	100.34	< .001	75.30	< .001

Note. Dependent variable: work exhaustion. Predictors were standardised before the interaction term was formed.

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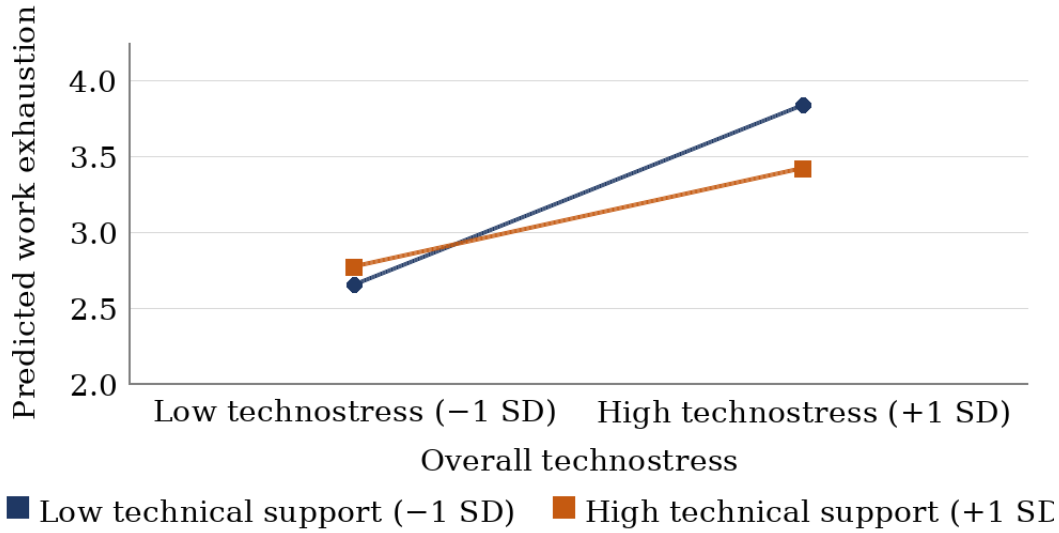


Figure 5: *Interaction of Overall Technostress and Organisational Technical Support on Work Exhaustion*

5.9 Summary of Hypothesis Testing

Table 9 summarises the outcome of hypothesis testing. Nine of the ten hypotheses were supported; only the direct effect of techno-uncertainty on work exhaustion was not.

Table 9: *Summary of Hypothesis Testing*

No.	Hypothesised relationship	Statistic	Decision
H1	Techno-overload → Work exhaustion (+)	β = .31, p < .001	Supported
H2	Techno-invasion → Work exhaustion (+)	β = .23, p < .001	Supported
H3	Techno-complexity → Work exhaustion (+)	β = .13, p = .005	Supported
H4	Techno-insecurity → Work exhaustion (+)	β = .20, p < .001	Supported
H5	Techno-uncertainty → Work exhaustion (+)	β = −.03, p = .510	Not supported
H6	Technostress → Job satisfaction (−)	β = −.40, p < .001	Supported
H7	Technostress → Perceived productivity (−)	β = −.27, p < .001	Supported
H8	Mediation by work exhaustion	Indirect = −.20, CI excludes 0	Supported (partial)
H9	Moderation by technical support	β = −.16, p < .001	Supported
H10	Difference across sub-sectors	F = 8.95, p < .001	Supported

Note. β = standardised regression coefficient; CI = confidence interval.

6. Discussion

The results show that technostress among financial sector employees in Indore is real but uneven. The overall level was moderate, yet a quarter of the sample reported high technostress. The dominance of techno-overload matches earlier findings that technology tends to raise the pace and

volume of work before it raises efficiency (Tarafdar et al., 2007; Tarafdar et al., 2011).

The strong effect of techno-invasion on exhaustion reflects the growing use of messaging groups, mobile approvals and after-hours reporting in Indian financial institutions. When work follows employees home through their phones, opportunities for recovery shrink, and exhaustion builds up, which is consistent with the job demands–resources account of burnout (Demerouti et al., 2001; Maslach et al., 2001). Techno-insecurity also predicted exhaustion even though its mean was the lowest; the fear of being replaced by automation or by younger, more digitally fluent colleagues appears to be a quiet but persistent drain on energy, in line with Ragu-Nathan et al. (2008).

Techno-uncertainty did not predict exhaustion once the other creators were taken into account, and it did not differ across sub-sectors. One possible explanation is that frequent system changes have become a normal part of banking work, so employees no longer appraise them as a distinct threat; in the language of Lazarus and Folkman (1984), the demand is still present but is appraised as routine rather than threatening. This pattern is compatible with the view that the same technology can be experienced as either eustress or distress depending on context (Tarafdar et al., 2019).

The sub-sector differences are informative. Private sector banks, which have pursued digital targets most aggressively, showed the highest technostress, while co-operative and small finance banks showed the lowest, perhaps because their digital transition has been slower and more localised. The steady rise of technostress with daily hours of digital work underlines the role of exposure, a point also highlighted by Ayyagari et al. (2011), who linked technostress to the presenteeism and pace of change built into modern systems. The age effect on techno-complexity suggests that older employees find new systems harder to master, which calls for differentiated rather than uniform training.

Finally, the mediation and moderation results describe how technostress travels and how it can be contained. Exhaustion carried about half of the effect of technostress on job satisfaction, which suggests that technology strain first drains energy and then sours attitudes towards the job. Organisational technical support weakened the technostress–exhaustion link, echoing Tarafdar et al. (2015), who found that support and literacy facilitation reduce the harm of technostress. Personality and coping style may further shape these effects (Srivastava et al., 2015), as may the compulsive side of connectivity described by Salanova et al. (2013).

7. Implications of the Study

7.1 Theoretical Implications

The study extends the technostress creators framework (Tarafdar et al., 2007) to a tier-two Indian financial hub and confirms that four of the five creators operate as job demands that lead to

exhaustion. By testing the creators, outcomes, a mediating mechanism and a buffering resource in one model, it supports the job demands–resources interpretation of technostress (Demerouti et al., 2001). The non-significant role of techno-uncertainty suggests that the five creators are not equally potent in all settings and that their effects may change as digital work matures.

7.2 Managerial and Policy Implications

Several practical steps follow from the findings. First, digital rollouts should be accompanied by a review of workload and targets so that the time saved by automation is not fully reassigned. Second, clear norms on after-hours communication, such as limiting official messaging groups to working hours except in emergencies, can reduce techno-invasion. Third, training should be differentiated by age and role, with more hands-on support for older employees and for staff facing new systems. Fourth, banks should invest in responsive technical help desks and in-branch digital champions, since support was shown to weaken the path from technostress to exhaustion. Fifth, management should communicate openly about how automation will change roles, so that techno-insecurity does not grow unchecked.

8. Limitations and Directions for Future Research

The study has some limitations. Its cross-sectional design does not allow firm causal conclusions, and a longitudinal design would show how technostress develops over the course of a system change. All measures were self-reported and collected from the same respondents at one time, so common method variance cannot be fully ruled out. The sample was limited to Indore, and findings may differ in metropolitan or rural settings. Future studies could compare several cities, include objective performance data, examine personality and coping strategies as further moderators, and explore techno-eustress alongside distress.

9. Conclusion

Digitization has made Indore’s financial sector faster and more accessible, but it has also introduced costs that rarely appear in project budgets. This study found that technostress among financial sector employees is moderate on average and high for a substantial minority, that it is driven mainly by overload, invasion, insecurity and complexity, and that it lowers job satisfaction and perceived productivity largely by exhausting employees. Where organisations provide timely technical support, the link between technostress and exhaustion weakens noticeably. Financial institutions that want the full return on their digital investments will need to manage the human side of technology with the same care they bring to its technical side.

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