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Mitigating Technostress in Future Curriculum Design- Examining Inhibitors in Indian Education

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ABSTRACT

Digital technologies in educational environments have brought disruptive changes to the teaching and learning process due to their excessive use. This has resulted in new challenges to teachers' well-being in the form of technostress. Technostress arises from the inability to adapt to or manage technological demands. This research examines how technostress creators, inhibitors, and technology-enabled performance (TEP) are related. Data were gathered using a structured questionnaire from 146 educators in India. The study used structural equation modeling via SmartPLS 4.0, to analyse the data. The results showed that techno-insecurity, a contributor to technostress, adversely affects performance, whereas facilitators such as digital literacy and technical support are essential in minimising these impacts and improving performance. Technostress inhibitors reduced techno-complexity and techno-invasion significantly, but were less effective at lowering techno-overload and techno-insecurity. These findings suggest competency-based training programs to reduce complexity-related stress; structured policies limiting after-hours digital communication to reduce invasions; technical support infrastructure to reduce overload; and organizational mechanisms to optimize technology and technology-driven environments to meet future curriculum design needs.

Keywords: Technostress; future curriculum; technology-enabled performance; Indian education; technostress inhibitors; Structural Equation Modeling

INTRODUCTION

The teaching and learning process has experienced a fundamental transformation as a result of the integration of digital technologies into educational settings. In line with these changes, the new curriculum design emphasizes the use of flipped classrooms, technology-enhanced learning, and Turnitin-based assignments (Markowitz et al. 2018; Yang et al. 2025). While the integration of information and communication technologies (ICTs) in education settings has expanded access, flexibility, and interactivity in learning environments, it has also resulted in meta work which encompasses supporting tasks, maintenance and technical work, monitoring, measuring, and reporting (Aroles et al. 2023; Rikala et al. 2025) due to digital task management demands (Rademaker et al. 2025). ICT has created new challenges for teachers' well-being. One of the most critical challenges is technostress, a phenomenon wherein individuals ind it hard to adjust to cope with change in technological demands. Technostress creators have been widely recognized as barriers to effective performance (La Torre et al. 2019; Malaquias & de Souza Jr. 2023; Pothuganti 2024; Rikala et al. 2025; Tarafdar et al. 2019). These stressors negatively impact teachers' ability to use technology effectively, thereby hindering their technology-enabled performance and meta-work.

Technostress inhibitors, such as digital literacy facilitation, technical support, and involvement facilitation, have emerged as critical factors in reducing the effects of technostress. Researchers have investigated the role of technostress inhibitors that can mitigate stress-inducing factors (Nisafani et al. 2020; Li Wang and Wang 2021). Research shows that technostress inhibitors not only improve individuals' confidence and competence in managing technology but also reduce the impact of technostress creators on performance outcomes, commitment, and job satisfaction (Ragu-Nathan et al. 2008; Califf & Brooks 2020; Li & Wang 2021). These include digital literacy training, administrative encouragement, technical support availability, and peer collaboration. Although the concept of technostress has received increasing scholarly attention, the current body of literature remains fragmented, primarily focusing on stress-causing factors rather than on processes that can lessen these factors. Seminal works (e.g., Tarafdar et al. 2011; Riedl 2013) established the foundation by identifying creators such as techno-overload, techno-complexity, and techno-invasion. However, later research has focused mainly on the psychological and organizational consequences of these stressors (Califf & Brooks 2020; La Torre et al. 2019), while ignoring the role of systemic inhibitors, such as digital literacy training, technical support systems, and participative decision-making, that could reduce these effects. Even comprehensive reviews (Pothuganti 2024) acknowledge this imbalance and call for more integrative models that consider both demands and resources. Despite its importance, the role of technostress inhibitors in the relationship between technostress and technology-enabled performance remains underexplored, particularly in the academic context of teachers in India, a country undergoing a significant transformation in its educational landscape. While studies such as (Rawal et al. 2024) Sahni et al. 2025) have contributed valuable insights into educators' ICT challenges during digital transitions, they overlook the interplay between inhibitors and specific stressors Additionally, research in India has investigated the impacts of infrastructure deficiencies (Misra 2014) while overlooking the influence of psychological resilience and institutional support networks that could alleviate technostress. This suggests that there exist significant gaps in terms of both theoretical and practical methodologies for developing future-ready curricula. The goal is to come up with a way to use technology in the classroom that takes care of teacher well-being and helps them do their jobs better at the same time.

This study draws from tenets of the Job Demands-Resources (JD-R) model and the Person-Environment (P-E) fit framework to examine how the techno-stress creators impact the technology-enabled performance. The JD-R model (Bakker & Demerouti, 2017) states that excessive demands, due to excessive technology use, can increase stress and reduce performance, whereas technostress inhibitors can reduce these pressures. In contrast, the P–E fit perspective (Caplan, 1987) suggests that stress is the result of the gap between the technological and organizational demands placed on teachers and their skills or ability to handle them. In our context, technostress creators (e.g., techno-overload, techno-invasion, and techno-complexity) are perceived as significant challenges for teachers, whereas technostress inhibitors (such as digital literacy facilitation, technical support, and involvement facilitation) are considered resources that reduce technostress. Therefore, in today's Indian educational context, understanding how these inhibitors reduce technostress and enhance technology-enabled performance is essential for building sustainable and effective technology-enabled teaching practices. Looking at these tensions in the Indian education system will helps us understand where stress comes from and shows how well-structured support can turn technology into a real tool for future-ready teaching.

Against this backdrop, the present study explores how technostress facilitators and inhibitors interact to influence technology-enabled performance among educators in India. The Indian educational system, characterized by swift integration of digital technology, presents a unique context for examining these dynamics. Indian educators face a dual challenge: adapting to new technologies while also dealing with the stresses they entail (Malaquias & de Souza Jr., 2023). This study employs structural equation modeling with SmartPLS 4.0 to analyze data from 146 teachers, aiming to elucidate how specific inhibitors, such as facilitating the acquisition of digital skills and providing technical support, can mitigate technostress through various mechanisms. It adds to the growing conversation about how teachers can be more flexible with technology and helps schools undergoing rapid digital change develop supportive strategies for future curriculum design.

LITERATURE REVIEW

TECHNOSTRESS IN EDUCATION

Riedl (2013) characterizes technostress as the psychological pressure experienced by individuals who struggle to adapt to or manage technological demands within educational environments. Technostress arises from the demands of using digital tools, the rapid pace of technological advancement, and the pressure to maintain constant connectivity (Riedl 2013; Wang & Li 2019). Studies have identified critical components of technostress, including techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty, all of which heighten the stress levels of educators and students (Joo et al. 2016; Li et al. 2024; Rafsanjani et al. 2023). Educators and students encounter technostress due to various digital stressors that adversely affect productivity and well-being. Techno-overload and techno-invasion make work harder and affect work-life balance, which can lead to exhaustion and lower performance. Techno-complexity and techno-insecurity diminish users' perceptions of competence and control, whereas techno-uncertainty stemming from perpetual technological updates induces instability in educational routines. These cumulative stressors lead to cognitive strain, job dissatisfaction, and disengagement among educators and students (Bourlakis et al. 2023; Yang et al. 2025). Nonetheless, the existence of technostress mitigators can alleviate these detrimental effects and enhance overall work performance in higher education environments (Bourlakis et al. 2023).

TECHNOSTRESS INHIBITORS

Technostress inhibitors are strategies and tools that help individuals and organizations manage the stress caused by technology and improve its effective use. These include digital literacy facilitation, technical support, and involvement facilitation. Digital literacy facilitation helps individuals build confidence and competence in using technology. Technical support provides timely assistance when technical difficulties occur, reducing rustration and downtime. Involvement facilitation encourages educators and students to actively participate in adopting and integrating new technologies, ensuring smoother implementation and greater acceptance (Li & Wang, 2021). These methods are necessary for lowering stressors like feeling overwhelmed or having trouble with complicated systems, which will enhance confidence and productivity in the end. Li and Wang (2021) discovered that promoting engagement in technological processes markedly diminished stress and enhanced performance among university educators. Jena (2015) also revealed that having strong support systems and access to training is important for adopting collaborative technologies in education

TECHNOLOGY-ENABLED PERFORMANCE

Technology-enabled performance in education means being able to use digital tools to make teaching, learning, and administrative chores better. It includes teachers' ability to use technology, like learning management systems and interactive tools, to make learning more interesting and improve results. Technology inhibitors enable educators to utilize technology proficiently (Li & Wang, 2021). But problems like technostress can make ithard to embrace and do well, therefore support systems are important for boosting productivity and happiness (Ragu-Nathan et al. 2008; Jena, 2015). By getting rid of these hurdles, technology can turn classrooms into creative, future-ready settings.

THEORETICAL FRAMEWORK

This study utilizes two complementary frameworks: Person-Environment (P–E) Fit Theory and the Job Demands–Resources (JD-R) Model, to analyze the formation of technology-enabled performance (TEP) in the context of Indian education, focusing on technostress producers and inhibitors. The P-E Fit view says that stress happens when what an environment needs and what a person can give do not line up (Caplan 1987). This mismatch is clear in classrooms that focus on technology. As universities move toward hybrid and technology-based ways of teaching, teachers need to learn how to use many different platforms, handle digital evaluations, and use new tools in their everyday work (Qi, 2019). When these demands exceed teachers skill sets or time, they lead to irritation, strain, and ultimately, disengagement with technology (Upadhyaya & Vrinda 2021; Wang & Li 2019). Studies conducted in recent years have consistently demonstrated that such pressures diminish the inclination to innovate pedagogically and foster a perception of being "left behind" by the swift advancement of technology. In this study, the four commonly identified technostress creators, techno-overload, techno-invasion, techno-complexity, and techno-insecurity, are conceptualized as specific forms of misalignment that weaken the fit between educators and their increasingly digital work environments. The P–E Fit theory explains why misalignment causes strain, and the JD-R model (Bakker & Demerouti, 2017) shows how resources can help stop this from happening. The paradigm posits that elevated job demands deplete emotional and cognitive resources, while employment resources, including supportive practices, training, and autonomy, mitigate strain and foster motivation and engagement. In the context of education, this concept emphasizes the function of technostress inhibitors as resources that assist educators in managing the difficulties associated with digital instruction. Three inhibitors are particularly pertinent: digital literacy facilitation, which enhances teachers' technical proficiency and confidence, alleviating feelings of inadequacy and the challenges associated with learning new systems; technical support provision, which mitigates overload and incessant interruptions by ensuring prompt and effective resolution of technical issues; and involvement facilitation, which empowers teachers to influence the adoption and utilization of digital technologies, thereby reinforcing their sense of ownership and diminishing concerns regarding obsolescence.

New studies show that these kinds of help do more than only protect against stress; they also make it easier to use technology in a good way. Teachers who perceive themselves as competent, supportive, and engaged are more inclined to experiment with digital resources and modify their instructional methods to enhance student results (Basak & Govender, 2022; Manju & Jayan, 2023). This study integrates P–E Fit and JD-R perspectives to analyze how technostress generators function as demands that compromise TEP, while inhibitors serve as resources that mitigate the adverse impacts of these demands and directly facilitate instructors' effective performance. The framework is especially important in India, where teachers are expected to satisfy high digital standards even if they may not always have access to the tools and training they need. Learning about these systems can help us make future curriculum that are both technologically advanced and good for teachers' health.

HYPOTHESES

TECHNOSTRESS CREATORS AND TECHNOLOGY-ENABLED PERFORMANCE

P–E Fit theory posits that when technological expectations surpass instructor capabilities, misalignment results in stress. JD-R theory supports this by showing that job demands such techno-overload, techno-invasion, techno-complexity, and techno-insecurity drain energy, increase stress, and lower performance (Tarafdar et al. 2019). The JD-R paradigm posits that technostress generators operate as job demands within the work environment that necessitate continuous effort, hence incurring physiological and psychological costs. When these expectations exceed available resources (e.g., digital literacy assistance, time, or autonomy), they induce strain, hence diminishing individual performance (Demerouti et al. 2001). Based on this theoretical framework, technostress generators can be defined as incompatible situations and job demands that hinder task performance in digitally mediated work environments. Ragu-Nathan et al. (2008) presented these creators, which have now been thoroughly validated in several scenarios (Tarafdar et al. 2011; Maier et al. 2019). Meta-analytic results by Nastjuk et al. (2024) offer robust empirical support for these associations. Their analysis substantiates that these four technostressors, when disaggregated, exert a significant and detrimental impact on behavioral outcomes, including productivity, intention to use, and technology-enabled performance (Ragu-Nathan et al. 2008; Califf et al. 2020). The results corroborate the JD-R model's hypothesis that high demands coupled with insufficient support result in performance decline, and they also validate P–E fit theory's claim that perceived discrepancies between technology expectations and individual capabilities induce stress.

Techno-overload compels individuals to accelerate their work pace and extend their efforts, resulting in cognitive fatigue, diminished concentration, and inefficiencies in multitasking (Tarafdar et al. 2007). Technology can help with multitasking, but it can also cause a lot of distractions, which can make it harder to stay focused and lower the quality of the work. Techno-invasion undermines psychological detachment by transgressing work-life boundaries, thereby diminishing opportunities for recovery and concentrated participation. The expectation of constant availability leads to work-life conflict, cognitive fatigue, and reduced recovery time, hence impacting performance (Shi et al. 2023; Bourlakis et al. 2023). Techno-complexity is the feeling that you do not know how to operate digital systems well enough, which makes it harder to keep up with basic performance (Ragu-Nathan et al. 2008). Lastly, techno-insecurity makes people afraid of becoming outdated, which makes them less likely to work together and come up with new ideas since they are afraid of being defensive. This may result in knowledge retention, resistance to innovation, and alienation from digital tools (Tarafdar et al. 2011; Califf et al. 2020). This issue is especially important in schools and other places where AI, automated testing systems, and online learning platforms make people wonder what the future of human teachers will be (Selwyn, 2019). All these stressors increase demand while eroding the resource pool necessary for high-level technology-enabled functioning, affecting performance.

In light of these theoretical and empirical insights, we propose the following hypotheses:

H1a: Techno-overload negatively impacts technology-enabled performance.
H1b: Techno-invasion negatively impacts technology-enabled performance.
H1c: Techno-complexity negatively impacts technology-enabled performance.
H1d: Techno-insecurity negatively impacts technology-enabled performance.

TECHNOSTRESS INHIBITORS AND TECHNOSTRESS CREATORS

Technostress inhibitors lessen the effects of stressors and help people do better at work. These inhibitors improve users' ability to use technology effectively by giving them the skills, emotional support, and ways to get involved that they need. This makes it easier to integrate technology and makes it more efficient (Taradar et al. 2007; Li & Wang, 2021). These inhibitors include digital literacy facilitation, technical support, and user involvement, which can mitigate the intensity of technostress creators such as techno-overload, techno-invasion, and techno-complexity (Ragu-Nathan et al. 2008). Tarafdar et al. (2015) showed that factors such as information systems literacy, user engagement, and technical assistance substantially improve technology-enabled innovation and performance, particularly in sales and knowledge work environments. Li and Wang (2021) substantiate this in an academic setting, demonstrating that literacy facilitation and engagement facilitation directly and positively impacted university professors' work performance, notwithstanding the existence of techno-stressors. Malaquias and de Souza (2023) recently pointed out that literacy facilitation (such as manuals, workshops, and peer learning) has a big negative influence on teachers' techno-overload, techno-complexity, and techno-invasion. This makes it easier for instructors to adapt to new technology all the time. Koo and Wati (2011) discovered that literacy facilitation mitigates the positive correlation between task complexity and technostress in corporate environments, hence affirming its buffering function. Califf and Brooks (2020) offered additional evidence within the K–12 education framework, demonstrating that structured digital literacy treatments alleviated all five primary stressors. Consequently, these inhibitors function as both protective resources and reframing instruments that inhibit the activation of technostress generators. By conceptualizing inhibitors as work resources within the JD-R paradigm (Bakker & Demerouti, 2017), it is clear that they serve as motivational factors that can mitigate demands and improve task engagement, self-efficacy, and productivity.

H2: Technostress inhibitors negatively impact technostress creators.

TECHNOLOGY-ENABLED PERFORMANCE AND TECHNOSTRESS INHIBITORS

According to the Job Demands–Resources (JD–R) paradigm (Bakker & Demerouti, 2017), inhibitors are job resources that not only protect against demands but also boost motivation, engagement, and, in the end, better performance. In educational and business settings, when educators or employees receive assistance through digital literacy initiatives, technical support, and collaborative decision-making frameworks, they exhibit increased confidence in utilizing ICT tools, enhanced task performance, and greater professional efficacy. Li and Wang (2021) showed that helping university professors with literacy and getting them involved in their work improved their performance, even when they were dealing with a lot of techno-insecurity and complexity. Ahmad et al. (2014) substantiated this correlation in a Malaysian institution, demonstrating that all three inhibitors markedly increased organizational commitment. Li and Wang (2021) discovered that literacy facilitation could provoke some technostress producers when inhibitors are applied judiciously. A study by Bausch et al. (2024) suggested that inhibitors, especially digital literacy facilitation, are crucial for diminishing resistance and harnessing the potential of technology-enabled workflows in digital transformation efforts. Inhibitors collectively furnish the necessary technical and emotional support to function proficiently within digital ecosystems. So, it is proposed

H3: Technostress inhibitors positively impact technology-enabled performance.

These hypotheses reflect a dual-path model where technostress creators reduce TEP, while inhibitors buffer creators and enhance performance.

METHODOLOGY

RESEARCH DESIGN

The study employed a cross-sectional research design to examine the relationships between study variables. Structural equation modeling (SEM) was employed, as this approach is suitable for prediction-oriented studies with complex models and does not impose distributional assumptions on the data (Hair et al. 2021).

POPULATION AND SAMPLING

The target population comprised school, college, and university teachers across India. A purposive sampling approach was used to reach respondents who actively engage with digital technologies in their work.

DATA COLLECTION PROCEDURE

Data were collected using an online structured questionnaire created in Google Forms. The questionnaire was distributed through institutional networks and professional groups. Participation was voluntary, and anonymity and confidentiality were assured. Ethical guidelines were followed, and informed consent was obtained from all participants prior to completing the survey.

MEASURES

The data were collected using a structured questionnaire. The survey items were adopted from established scales from previous research and modified to suit the study context. Techno-stressors were measured using a 17-item scale developed by Ragu-Nathan et al. (2008) that captures four distinct dimensions: techno-overload, techno-invasion, techno-uncertainty, and techno-complexity. Technostress inhibitors Digital literacy facilitation, technical support provision, Involvement facilitation) were measured using a 13-item scale with five items for literacy, four items for involvement facilitation, and four items for technical support provision. The technology-enabled performance measure was adapted from Tarafdar et al. (2014). Data were collected using a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), targeting academic professionals across various institutions in India. The instrument was designed to measure and provide a comprehensive assessment of technological stress and its mitigating factors within the academic context.

RESULTS AND DISCUSSION

SAMPLE CHARACTERISTICS AND CONTEXT

The study drew responses from 146 educators representing a broad spectrum of experience and roles within the Indian education system. The sample achieved near gender parity (52.7% male, 47.3% female), reflecting the increasingly balanced gender representation in Indian academia. The age distribution showed the majority of respondents were mid-career teaching population, with 71.23% of participants falling between 30-50 years, a demographic affected by rapid educational technology adoption (l). The majority of respondents (95.21%) had master's or higher degrees. Their teaching roles were distributed across primary, secondary, and higher education, though the dominance of higher education faculty (over 80%) was apparent, which is consistent with the study's focus on curriculum innovation. The substantial representation of higher education faculty (83.56%) provides valuable insights into technostress experiences among educators responsible for preparing future professionals in an increasingly digital landscape.

TABLE 1. Sample Demographics

Demographic	Frequency	% Age
Gender		
Male	77	52.74
Female	69	47.26
Age		
21-25	4	1.37
26-30	14	9.59
30-35	35	23.97
36-40	26	17.81
41-50	43	29.45
50-60	22	15.07
Wish not to Disclose	4	2.74
Education Level		
Bachelors	7	4.79
Master	74	50.68
Doctoral degree/FPM	65	44.53
Position		
Primary Level	11	7.53
Higher Secondary	13	8.91
Higher Education	122	83.56

MEASUREMENT MODEL

SmartPLS 4.0, a variance-based structural equation modeling (SEM) (Hair et al. 2021) was used to evaluate measurement model. Table 2 shows that factor loadings were above 0.70 except one, which is acceptable, and composite reliability values were above 0.88, while AVE values surpassed the 0.66 threshold, confirming convergent validity. HTMT ratios and the Fornell–Larcker criterion also supported discriminant validity, ensuring that each construct captured a unique dimension of technostress or its mitigation (see Table 3 and Table 4).

TABLE 2. Factor Loadings, Reliability, Validity, and Average Variance Extracted

Variables	Outer loadings	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
TC1 <- TC	0.800	0.891	0.911	0.675
TC2 <- TC	0.903			
TC3 <- TC	0.873			
TC4 <- TC	0.709			
TC5 <- TC	0.807			
TI1 <- TI	0.885	0.887	0.914	0.728
TI2 <- TI	0.766			
TI3 <- TI	0.827			
TI4 <- TI	0.927			
TIS1 <- TIS	0.717	0.871	0.907	0.663
TIS2 <- TIS	0.682			
TIS3 <- TIS	0.888			
TIS4 <- TIS	0.902			
TIS5 <- TIS	0.855			
TO1 <- TO	0.755	0.870	0.903	0.701
TO2 <- TO	0.916			
TO3 <- TO	0.835			
TO4 <- TO	0.836			
TSP <- Techno Inhibitors	0.844	0.796	0.878	0.707
DLF <- Techno Inhibitors	0.863			
IF <- Techno Inhibitors	0.814			
TEP1 <- TEP	0.738	0.888	0.918	0.693
TEP2 <- TEP	0.868			
TEP3 <- TEP	0.848			
TEP4 <- TEP	0.848			
TEP5 <- TEP	0.853			

Note: TC = Technostress Complexity; TI = Techno Invasion; TIS = Techno Insecurity; TO = Techno Overload; TEP = Technolo gyEnabled Performance. Technostress inhibitors include digital literacy facilitation, technical support provision, and involvement facilitation.

TABLE 3. Discriminant Validity: Heterotrait-monotrait ratio (HTMT) Matrix

	TC	TEP	TI	TIS	TO	Techno Inhibitors
TC						
TEP	0.211					
TI	0.207	0.086				
TIS	0.553	0.298	0.137			
TO	0.388	0.090	0.666	0.296		
Techno Inhibitors	0.203	0.533	0.232	0.166	0.092	

Note: TC = Technostress Complexity; TI = Techno Invasion; TIS = Techno Insecurity; TO = Techno Overload; TEP = TechnologyEnabled Performance. Technostress inhibitors include digital literacy facilitation, technical support provision, and involvement facilitation.

TABLE 4. Discriminant Validity: Fornell-Larcker criterion

	TC	TEP	TI	TIS	TO	Techno Inhibitors
TC	0.821					
TEP	-0.223	0.832				
TI	0.215	-0.033	0.853			
TIS	0.479	-0.269	0.114	0.814		
TO	0.322	-0.077	0.581	0.213	0.837	
Techno Inhibitors	-0.233	0.466	-0.234	-0.137	-0.069	0.841

Note: TC = Technostress Complexity; TI = Techno Invasion; TIS = Techno Insecurity; TO = Techno Overload; TEP = TechnologyEnabled Performance. Technostress inhibitors include digital literacy facilitation, technical support provision, and involvement facilitation.

STRUCTURAL MODEL FINDINGS

As the measurement model showed acceptable values, the structural model was assessed following guidelines suggested by Hair et al. (2021). The assessment of the structural model was conducted following the procedures recommended by Hair et al. (2021). Variance inflation factor (VIF) values were all below 5, indicating the absence of multicollinearity. Table 5 shows that the explanatory power of the model was evaluated using R^2 and adjusted R^2 values. The model explained 27.6% of the variance in technology-enabled performance (TEP) ($R^2 = 0.276$; adjusted $R^2 = 0.250$), while the explained variance for technostress creators (TC) and technostress inhibitors (TI) was comparatively modest ($R^2 = 0.054$ and 0.055, respectively). Technostress insecurity (TIS) and techno-overload (TO) had low R^2 values (0.019 and 0.005), suggesting that these constructs are influenced by other factors beyond those included in the present model. Model fit was assessed by calculating the standardized root mean square residual (SRMR). Table 5 shows SRMR was 0.076, which falls within the recommended threshold of 0.08 for acceptable model fit (Hu and Bentler 1999). This ensures the correlations between the variables are consistent with the hypothesized relationships. This suggests that the model captures the covariance structure, and multicollinearity or measurement misspecification is not an issue.

TABLE 5. Predictive Relevance – R-Square and SRMR

	R-square	R-square adjusted	SRMR
TC	0.054	0.048	
TEP	0.276	0.250	
TI	0.055	0.048	0.076
TIS	0.019	0.012	
TO	0.005	-0.002	

Note: TC = Technostress Complexity; TI = Techno Invasion; TIS = Techno Insecurity; TO = Techno Overload; TEP = TechnologyEnabled Performance.; Technostress inhibitors include digital literacy facilitation, technical support provision, and involvement facilitation

HYPOTHESES TESTING RESULT

The first hypothesis (H1), which investigates the influence of technostress creators (techno-overload (TO), techno-invasion (TI), techno-complexity (TC), techno-insecurity (TIS)) on technology-enabled performance (TEP), received partial support. A comprehensive examination of technostress creators demonstrated that the association between TC and TEP was negative yet statistically insignificant ($\beta = -0.029$, $T = 0.26$, $p = .795$), suggesting that an escalation in complexity does not materially affect performance. This finding contrasts with previous research by Li and Wang (2021), who reported a significant positive relationship between techno-complexity and work performance. However, our results partially align with (Wang & Yao, 2021), who reported that techno complexity is perceived as a threat, but not as a challenge. More recently, Nastjuk et al. (2023) conducted a comprehensive meta-analysis synthesizing technostress research and found that while techno-complexity generally demonstrates significant relationships with stress outcomes across studies, the effect sizes vary considerably depending on contextual factors and measurement approaches. The non-significant relationship in our study suggests that modern employees may have developed adaptive coping mechanisms or received adequate training to manage technological complexity, thereby mitigating its potential negative impact on exhaustion propensity (Califf & Brooks, 2020; Nastjuk et al. 2023). Similarly, TI had a positive but statistically insignificant effect on TEP ($\beta = 0.153$, T = 1.617, p = .106). In contrast, TIS showed a significant negative relationship with TEP (β = -0.192, T = 1.985, p = .047), indicating that higher levels of technology insecurity, manifested as fear of losing relevance or being replaced due to digital advancements, weakened technology-enabled performance. This suggests that when individuals are not confident about their ability to keep pace with new technologies, their engagement and effectiveness in using these tools decreases. This aligns with Mehrolia et al. (2021), who observed that technostress creators negatively influence satisfaction and performance in technology-driven environments. However, contrary to the proposed hypothesis, techno-complexity (TC) (β = -0.029, T =0.026, p = 0.795), and techno-invasion (TI) (β = 0.153, T = 1.617, p = .106), demonstrated non-significant impacts on TEP, suggesting that these stressors may not universally impact performance or that their effects might be context-specific (Li & Wang, 2021). The other possible explanations are that participants, who had already adapted to technology in their teaching roles, may have built confidence and coping strategies that mitigate the disruptive effects of complex systems or blurred work–life boundaries, thereby diminishing their unsettling effects. It is also likely that institutional support mechanisms, training initiatives, or prior exposure to technology reduce the burden associated with these stressors. These findings point to the need to examine moderating factors, such as digital proficiency, organizational culture, and adaptive coping skills, that may shape how techno-complexity and techno-invasion influence technology-enabled performance across different settings. The second hypothesis (H2) examining the influence of technostress inhibitors on technostress creators received partial support. A notable negative correlation was identified between techno inhibitors and complexity (β = -0.233, T = 2.275, p = .023), suggesting that inhibitors facilitate the reduction of complexity in technological systems. Techno inhibitors also significantly reduced (β = -0.234, T = 1.989, p = .047). Nonetheless, techno inhibitors exhibited negligible impacts on TIS (β = -0.137, T = 1.53, p = .126) and TO (β = -0.069, T = 0.545, p = .586), suggesting that these inhibitors are less effective in alleviating the adverse perception of technostress.

Finally, techno inhibitors had a very strong positive effect on TEP (β = 0.463, T = 5.592, p < .001), which supports their role in helping people perform better by lowering their stress levels. The strong positive link between inhibitors and TEP (β = 0.463, p < .001) shows how important it is to lower stress and boost performance. This aligns with the research by Jena (2015) and Estrada-Munoz et al. (2022), which highlighted the importance of support mechanisms such as digital literacy facilitation and technical assistance in alleviating stress and promoting effective technology utilization (Refer to Table 6 and Figure 1)

TABLE 6. Path coefficients

Path	(β)	T Value	pP-values	Significance
TC -> TEP	-0.029	0.26	0.795	Insignificant
TI -> TEP	0.153	1.617	0.106	Insignificant
TIS -> TEP	-0.192	1.985	0.047	Significant
TO -> TEP	-0.084	0.703	0.482	Insignificant
Techno Inhibitors -> TC	-0.233	2.275	0.023	Significant
Techno Inhibitors -> TI	-0.234	1.989	0.047	Significant
Techno Inhibitors -> TIS	-0.137	1.53	0.126	Insignificant
Techno Inhibitors -> TO	-0.069	0.545	0.586	Insignificant
Techno Inhibitors -> TEP	0.463	5.592	<0.001	Significant

Note: TC=Technostress Complexity; TI=Techno Invasion; TIS=Techno Insecurity; TO=Techno Overload; TEP=TechnologyEnabled Performance. Technostress inhibitors include digital literacy facilitation, technical support provision, and involvement facilitation.

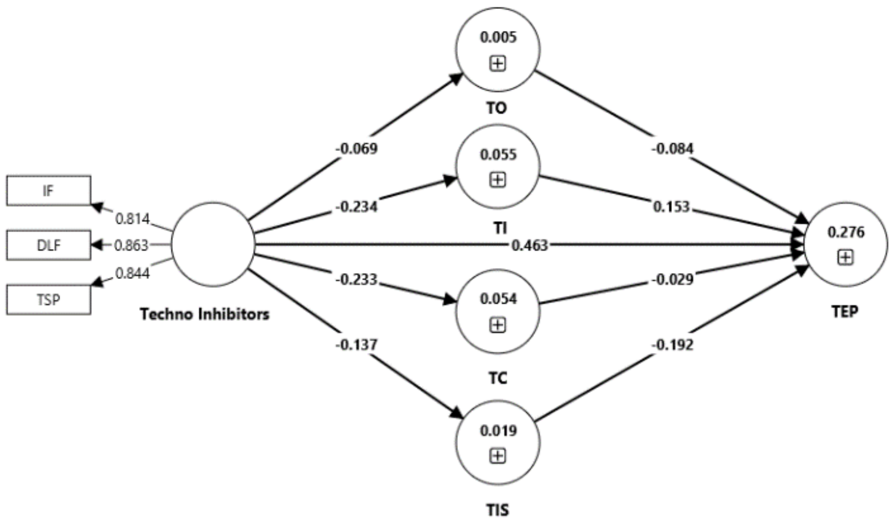

FIGURE I. Structural Model Results

CONCLUSION

The findings enhance theoretical understanding by synthesizing the Person–Environment fit perspective with the Job Demands–Resources (JD-R) model to elucidate the mechanisms by which technostress influences performance. The research expands the body of technostress literature within the Indian educational context, providing evidence that not all techno stressors have a consistent effect. The research elucidates the intricate relationship among technostress creators, inhibitors, and technology-enabled performance (TEP) within the framework of India's educational environment. The results indicate that technostress creators, especially techno-insecurity, adversely affect TEP. Techno-complexity and techno-invasion exhibited non-significant effects, indicating contextual variations in the functioning of these stressors. On the other hand, technostress inhibitors are very important for reducing these effects and making performance better. Inhibitors greatly lessen the impact of techno-stressors such as techno-complexity and techno-invasion, indicating their capacity to assist educators in the integration of technology in teaching. However, the limited effect of inhibitors on specific stressors, including techno-insecurity and techno-overload, indicates the necessity for context-specific interventions, such as the establishment of support systems to enhance digital resilience among educators. Furthermore, from a pragmatic perspective, the results indicate the necessity for educational institutions to proactively establish support systems that alleviate technology-induced stress. Comprehensive digital literacy training, ongoing technical support, and the participation of educators in technology decision-making can alleviate stress and improve performance. Consequently, institutional leaders and policymakers ought to promote investments in such support systems as strategic initiatives to guarantee that digital integration results in enhanced educational outcomes rather than stress-induced inefficiencies.

There are some problems with this study. Because it is cross-sectional, it is hard to draw causal conclusions. Future research may utilize longitudinal designs to examine the interactions between stressors and resources over time, integrate moderating variables such as self-efficacy or resilience, and expand the study to additional sectors or countries to improve generalizability. Qualitative studies may also help in getting deeper insights into how educators navigate technology-related challenges.

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DECLARATION OF COMPETING INTEREST

None.

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