Advanced International Journal for Research (AIJFR)
E-ISSN: 3048-7641 ● Website: www.aijfr.com ● Email: editor@aijfr.com

Examining The Mediating Role of Burnout in The Relationship Between Technostress and Employee Engagement Among Remote Workers in Quezon City

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Abstract

The COVID-19 pandemic accelerated the shift of employment from an in-person environment to remote work, increasing levels of technostress and reliance on digital resources. This research attempts to explain how the mediator of burnout functions in the relationship between technostress and employee engagement among remote workers based in Quezon City. The researchers adopted a quantitative approach based on the JD-R model to examine the effect of digital strain on workplace dynamics. This approach used the WarpPLS software for the PLS regression analysis and utilized internet surveys to gather data. The findings indicated that burnout induced by technostress affects employee engagement. The report concludes that companies should invest in wellness programs, improve digital literacy, and be clear about what tasks need to be done in order to help employees who work remotely with technology.

Keywords: Technostress, Burnout, Employee Engagement, Remote Work, Job Demands-Resources (JD-R) Model, Mediates, Quezon City

1. Introduction

1.1 Background of the Study

The economy experienced a rapid shift to remote work caused by the COVID-19 pandemic. The psychological strain people encounter when adjusting to digital technologies, particularly in settings where technology is overpowering or always changing, is referred to as technostress. Due to higher cognitive demands, fewer boundaries between work and personal life, and continuous connectivity, employees in remote work environments—where digital communication, virtual collaboration, and technology-enabled monitoring are crucial—are more susceptible to technostress (Tarafdar et al., 2015; Wang et al., 2023). These stressors serve as occupational pressures that deplete workers' energy and have negative psychological effects.

According to Maslach et al. (2001), burnout generally occurs by long-term exposure to high job demands, such as technostress, and is characterised by emotional fatigue, depersonalisation, and decreased personal accomplishment. This relationship can theoretically be explained by the Job Demands-Resources model of Bakker & Demerouti (2007). According to this model, when job demands, such as technostress, become overwhelming without being dampened by job resources, they result in strain, which subsequently leads to burnout. In an isolated setting, when normal support systems and face-to-face interactions may be limited, the risk of burnout increases. Again, burnout reduces employees' psychological capacity to maintain engagement, motivation, and commitment to work (Schaufeli et al., 2009).

Employee engagement, which is very important for how well an organization does, shows how emotionally and mentally committed individuals are in their work. When burnout occurs, engagement typically decreases, negatively affecting productivity, creativity, and overall well-being (Salanova & Schaufeli, 2008). This study investigates the role of technostress as a workplace characteristic contributing to burnout, and how burnout eventually reduces employee engagement in remote work.

Even though there is a lot of study on these individual attributes, there is still a big gap in our understanding of how burnout affects technostress and engagement, especially in remote work settings. The goal of this study is to address the gap and give organizations ideas on how to create programs that will help remote workers deal with technostress, burnout, and increase their engagement.

1.2 Statement of the Problem

Since the COVID-19 pandemic pushed many companies to remote work, new technology has greatly affected the way employees feel at work. Flexibility in remote work leads to more digital contact, boundaries blending work and personal time and extra attention from management which all lead to technostress. If distracting technology pressures at work are ignored, they can wear down workers psychologically and threaten to lead to burnout. Burnout affects both mental and emotional areas and makes it harder for people to feel loyal and working well. Even though many researchers have looked at each one separately, fewer have examined the relation between technostress, burnout and employee engagement in the context of remote work. There remains limited understanding of how burnout mediates the impact of technostress on employee engagement among remote workers. It is crucial to fill this gap to ensure that remote work stays supportive and lasts over time.

1.3 Research Objectives

This study aims to:

Examine whether a significant relationship exists between technostress and burnout.

Determine whether a significant relationship exists between burnout and employee engagement.

Investigate whether there is a significant direct relationship between technostress and employee engagement.

Assess whether burnout significantly mediates the relationship between technostress and employee engagement.

1.4 Research Questions

Is there a significant relationship between technostress and burnout?
Is there a significant relationship between burnout and employee engagement?
Is there a significant direct relationship between technostress and employee engagement?
Does burnout mediate the relationship between technostress and employee engagement?

1.5 Significance of the Study

It provides empirical insights into the interrelationships among technostress, burnout, and employee engagement, that enriches the existing body of knowledge on occupational stress in technology-driven work environments. By identifying burnout as a mediating variable, the research offers a deeper understanding of the mechanisms through which technostress affects employee engagement. This mediating role of burnout enables the development of targeted interventions aimed at mitigating its impact and preserving workforce motivation and commitment.

From a practical perspective, the findings of the research can inform organizational strategies designed to sustain employee engagement in technology-dependent remote work settings. The results may serve as a foundation for formulating workplace policies that promote responsible technology use, support employees in managing work-life boundaries, and minimize stressors associated with digital communication and connectivity. Furthermore, the research has implications for employee training and support programs, particularly in equipping staff with the skills to recognize symptoms of technostress and apply adaptive coping strategies.

Lastly, the implications of this research extend to human resource professionals, organizational policymakers, and mental health practitioners. By highlighting the psychological toll of constant digital interaction and the potential for burnout in remote work environments, the research underscores the need for comprehensive well-being frameworks. These frameworks should balance technological innovation with employee mental health, ensuring that organizations can thrive in the digital age without compromising workforce sustainability.

This chapter presented the background, problem statement, objectives, and significance of the study, which collectively establish the foundation for the investigation.

Definition of Terms

Technostress - It is the mental stress that employees feel because they utilize digital technology too much, are always connected, and have to keep up with systems that change quickly. Stressors like techno-overload, techno-invasion, and techno-complexity are all part of it.

Employee Engagement - Vigour, devotion, and absorption are characteristics of a positive and satisfying work-related frame of mind. Engaged employees are emotionally and mentally committed to their work, which enhances productivity and resilience.

Job Demands-Resources (JD-R) Model - A theoretical framework explaining how job demands (e.g., technostress) can lead to strain and burnout when not balanced by job resources (e.g., support, autonomy, digital literacy). It also highlights how resources foster employee engagement.
Burnout - Emotional tiredness, depersonalisation, and diminished professional efficacy resulting from prolonged exposure to job demands, such as technostress. It manifests as fatigue, cynicism, and decreased motivation toward work.

Remote Work - A work arrangement that lets people work from anywhere instead of a single location, giving them more freedom and flexibility. This arrangement, which can be full-time or hybrid, relies significantly on digital tools and technologies for communication and collaboration.

2. THEORETICAL BACKGROUND

2.1 Theoretical Framework

This chapter reviews existing theories and empirical studies that provide the foundation for understanding the relationships among technostress, burnout, and employee engagement.

2.1.1 Job Demands-Resources (JD-R) Model (Bakker & Demerouti, 2007)

The Job Demands–Resources (JD-R) Model developed by (Bakker & Demerouti, 2007) provides a theoretical framework for examining how technostress and burnout influences employee engagement, within remote work environments. This model posits that job demands, defined as aspects of the job that require sustained effort, can lead to technostress and burnout, whereas job resources, defined as physical, psychological, social, or organizational supports, can buffer these negative effects and foster employee engagement (Bakker & Demerouti, 2007). Within remote teams, where digital dependence is high, technostress emerges as a job demand that can significantly erode well-being if not outweighed by job resources.

Technostress, a specific form of job demand, is caused by excessive use of information and communication technologies (ICTs) and is characterized by overload, complexity, invasion, and uncertainty (Tarafdar et al., 2015). In remote work settings, employees are often expected to multitask across platforms, manage constant notifications, and adapt to rapidly evolving digital tools. These stressors elevate cognitive load, blur boundaries between work and personal life, and may ultimately lead to burnout if unmanaged (Suh & Lee, 2017; Park et al., 2020). Burnout, characterized by emotional exhaustion and reduced professional efficacy (Maslach & Leiter, 2016), is often a direct outcome of high job demands coupled with insufficient recovery or support mechanisms.

Conversely, job resources such as supportive leadership, digital literacy training, and flexible work policies can buffer the negative impacts of technostress and promote sustained engagement. (Bakker & Demerouti, 2018) emphasize that employees with access to adequate resources, such as autonomy, clear communication, and psychological safety, are more resilient in the face of high demands. Engagement, defined by vigor, dedication, and absorption (Schaufeli et al., 2002), thrives in environments where job resources outweigh job demands. Thus, applying the JD-R Model to technostress, burnout, and employee engagement in remote work settings allows this research to identify not only the risks posed by digital stressors but also the conditions under which these risks can be effectively managed.

This research hypothesizes that technostress increases the risk of burnout and reduces employee engagement, but these effects can be moderated by job resources such as supportive leadership, flexible work structures, and digital enablement. By utilizing the JD-R framework, the research aims to uncover how organizations can strategically deploy resources to manage technostress, prevent burnout, and enhance engagement in technology-driven, remote work environments.

2.2 Literature Review

2.2.1 Technostress

Technostress refers to the psychological stress experienced by individuals due to their inability to cope with new technologies or the overuse of digital systems in the workplace (Tarafdar et al., 2015). It is often caused by excessive exposure to digital tools, especially when employees are expected to multitask across platforms or adapt quickly to new systems. During the COVID-19 pandemic, the shift to remote work intensified this pressure, as many workers were required to use unfamiliar tools without adequate training or support (Salanova et al., 2023). This rapid transition led to an increased prevalence of techno-overload, techno-invasion, and techno-complexity, the key stressors identified in technostress literature (Tarafdar et al., 2015).

The impact of technostress is not limited to discomfort or inconvenience; it has been linked to decreased productivity, lower job satisfaction, and adverse health outcomes (Suh & Lee, 2017). (Park et al., 2020) found that after-hours use of mobile technology increased stress and interfered with recovery time, leading to work-life imbalance. Technostress is particularly dangerous when it leads to chronic cognitive fatigue. Employees feel overwhelmed by continuous demands for connectivity and technological adaptability, which can eventually manifest in emotional exhaustion or withdrawal behaviors (Ayyagari et al., 2011; Ragu-Nathan et al., 2008).

Individual characteristics such as resilience and digital self-efficacy have been found to buffer the negative effects of technostress (Chou & Chou, 2021; Yener et al., 2021). Supportive work environments that provide clear digital guidelines, training, and responsive IT support can significantly reduce perceived technostress (Fujimoto et al., 2016). This suggests that organizations must not only invest in technology but also equip employees with the resources and support needed to navigate digital workspaces effectively.

2.2.2 Burnout

Burnout is a medical condition marked by emotional fatigue, cynicism, and decreased professional efficacy, which results from extended exposure to ongoing work stress (Maslach et al., 2001). The rise in remote and digital work has intensified many burnout risk factors, especially when boundaries between work and home life become blurred (Fukuzaki et al., 2023). Employees who are constantly connected to digital platforms often struggle to disconnect mentally from work, making it difficult to rest and recover.

Technostress plays a key role in the onset of burnout, especially when employees feel overwhelmed by technological demands or unsupported in learning new systems (Salanova et al., 2023). (Brown et al., 2023) confirmed that constant exposure to digital devices without adequate support leads to elevated stress levels, which eventually contribute to burnout. Technostress-induced burnout has been

observed to increase during the pandemic across various industries, with particularly high rates in knowledge work and education sectors (Marrinhas et al., 2023).

Moreover, employees experiencing burnout are less likely to feel energetic or committed to their jobs, which not only affects individual well-being but also harms organizational outcomes (Schaufeli et al., 2009). Addressing burnout thus requires organizational strategies that reduce stressors and promote job resources such as social support, autonomy, and digital wellbeing initiatives (Demerouti et al., 2023). Burnout, as defined by (Maslach et al., 2001), is a condition of emotional, physical, and mental exhaustion caused by prolonged job stress, and it reduces employees' motivation, energy, and job involvement. (Schaufeli & Bakker, 2004) also note that burnout is the opposite of engagement, which is characterized by vigor, dedication, and absorption. (Deligkaris et al., 2014) support this by explaining that burnout disrupts cognitive and emotional connections to work, which are essential for engagement. The study by (Rony et al., 2021) shows that digital tools can help track early signs of burnout and allow managers to make timely interventions. This aligns with the findings of (Bedarkar & Pandita, 2014; Popli & Rizvi, 2016), who emphasize that reducing burnout is critical for fostering strong employee engagement and sustaining high performance in the workplace.

Remote work necessitates the use of technology to facilitate communication and collaboration, yet these same tools can contribute to stress due to constant connectivity and difficulty in unplugging from work (Bolger et al., 1989; Stamper & Johlke, 2003). Remote work, often perceived as a flexible arrangement, can exacerbate stress due to role overload, communication barriers, and difficulties in maintaining work-life balance (Bolger et al., 1989; Duxbury et al., 2018).

2.2.3 Employee Engagement

Employee engagement is defined as a beneficial, fulfilling state of mind relating to one's job that involves enthusiasm, dedication, and absorption (Schaufeli et al., 2002). Engaged employees are typically energetic, emotionally invested in their work, and often go beyond formal role expectations. The Job Demands–Resources (JD-R) model by (Demerouti & Bakker, 2023) explains that engagement is influenced by the balance between job demands (like technostress) and job resources (such as support, feedback, and autonomy).

High levels of technostress can erode employee engagement by depleting emotional and cognitive resources (Tarafdar et al., 2015; Suh & Lee, 2017). (Harunavamwe & Kanengoni, 2023) found that technostress in remote work settings negatively affects engagement levels, especially when employees lack organizational support. In contrast, when employees receive support, training, and recognition for navigating digital tools, their engagement levels can be maintained or even improved.

Engagement also acts as a protective factor against burnout. (Schaufeli & Bakker, 2004) emphasized that engaged employees are more resilient to work stress and are better able to recover from demanding experiences. Therefore, fostering engagement not only boosts performance but also acts as a buffer against the negative effects of technostress and burnout. Promoting psychological safety, offering flexibility, and recognizing digital competence are crucial steps to preserve engagement in tech-heavy work environments.

2.2.4 Technostress and Employee Engagement

The relationship between technostress and employee engagement is increasingly studied, especially in the context of digitally mediated work environments. Employee engagement, characterized by vigor, dedication, and absorption (Schaufeli et al., 2002), can be significantly undermined when employees experience technostress. (Tarafdar et al., 2015) found that high levels of techno-overload and techno-complexity directly contribute to decreased engagement, as they lead to cognitive fatigue and emotional exhaustion. (Suh & Lee, 2017) further highlighted that employees who feel overwhelmed by technology demands tend to disengage from their work due to perceived inefficacy.

Technostress increases job demands without necessarily increasing available resources, a key imbalance identified in the Job Demands–Resources (JD-R) model (Demerouti et al., 2023). When digital overload is not mitigated by support mechanisms such as digital literacy training or responsive IT support, employees are less likely to feel competent or psychologically safe, which are essential components of engagement (Harunavamwe & Kanengoni, 2023). The constant need to adapt to new software, communication platforms, and work processes can diminish intrinsic motivation, particularly when changes are abrupt or uncoordinated.

On the other hand, some studies suggest that the negative impact of technostress on engagement can be buffered by resources like organizational support and digital self-efficacy. (Chou & Chou, 2021) found that employees with high self-efficacy experienced less reduction in engagement even when exposed to high technological demands. Organizations that promote open communication, offer frequent training, and recognize digital efforts are better positioned to sustain employee engagement despite the pressures of digital work environments.

2.2.5 Remote Work

Remote work has transformed the modern workplace, providing flexibility and autonomy while also introducing new challenges. The sudden growth in remote work, particularly during the COVID-19 pandemic, brought both increased productivity and psychological strain (Fukuzaki et al., 2023). One of the core benefits of remote work is the reduction in commuting time, which many employees use to achieve better work-life balance. However, these benefits are often countered by challenges such as social isolation, communication barriers, and difficulties in separating work from home life (Bailey & Kurland, 2002).

Remote work environments heavily depend on digital tools for communication and collaboration, which inherently increases exposure to technostress (Salanova et al., 2023). Without face-to-face interaction, workers often feel disconnected from their teams, leading to feelings of loneliness and decreased emotional involvement in their work (Mann & Holdsworth, 2003). In such settings, managerial practices and organizational culture play a critical role in maintaining employee morale and engagement. Leaders who are visible and accessible through digital platforms help employees feel supported and less isolated.

Moreover, remote work has a dual impact on productivity and well-being. On the one hand, it offers flexibility and autonomy; on the other, it risks creating an “always-on” culture that blurs the

boundaries between work and personal life (Park et al., 2020). This leads to digital fatigue and an increased likelihood of burnout or disengagement. Organizations that manage remote work successfully often implement clear digital communication protocols, promote work-life balance, and foster virtual community-building activities to maintain a sense of team cohesion.

2.2.6 Technostress and Remote Work

The intersection of technostress and remote work has become a critical concern in organizational behavior research. Remote work requires the extensive use of digital technologies, which increases exposure to technostress creators such as techno-overload and techno-invasion (Tarafdar et al., 2015). Employees often find themselves attending back-to-back virtual meetings, managing multiple digital platforms, and facing constant connectivity issues, all of which contribute to stress and reduce job satisfaction (Suh & Lee, 2017). These effects are amplified in remote settings, where physical and psychological separation from the workplace limits access to informal support.

A major factor exacerbating technostress in remote work is the lack of boundaries between work and home environments. (Fujimoto et al., 2016; Park et al., 2020) emphasize that employees who work remotely often feel compelled to remain connected outside standard hours, leading to role ambiguity and work-life conflict. These pressures are particularly problematic for employees with caregiving responsibilities or limited access to ergonomic home workspaces. The resulting stress not only affects mental health but also impairs overall job performance and engagement.

However, not all employees experience technostress in remote work equally. Factors such as individual resilience, digital competency, and organizational support play mediating roles (Yener et al., 2021). Organizations that foster digital resilience by offering training, flexible schedules, and psychological support tend to have better outcomes. (Harunavamwe & Kanengoni, 2023) argue that perceived organizational support significantly reduces technostress and preserves employee engagement even in fully remote settings. Thus, addressing technostress in remote work is essential for sustaining workforce well-being and productivity.

2.3 The Hypothesized Model

H1: There is a significant relationship between technostress and burnout.
H2: There is a significant relationship between burnout and employee engagement.
H3: There is a significant direct relationship between technostress and employee engagement.
H4: Does burnout mediate the relationship between technostress and employee engagement.
This chapter reviewed the theoretical and empirical foundations relevant to technostress, burnout, and employee engagement. The reviewed literature supports the hypothesized relationships that will be empirically tested in the following chapter.

3. RESEARCH METHOD

3.1 Research Design

To investigate the links among technostress, burnout and employee engagement, the study used Partial Least Squares Regression (PLS-Regression) through WarpPLS to analyze relationships among latent

variables. This method was chosen for its strength in handling non-normal data and maximizing predictive accuracy (R^2) of employee engagement. WarpPLS also enabled the effective assessment of burnout's mediating role between technostress and employee engagement, making it suitable for complex, exploratory research models.

It is a powerful variance-based path modeling technique designed for estimating complex cause-and-effect relationships among latent variables. This approach was selected to examine the theoretical linkages in the study, Examining the Mediating Role of Burnout in the Relationship Between Technostress and Employee Engagement, because PLS-Regression is highly suggested when dealing with non-normally distributed data and is particularly strong in maximizing the predictive power R^2 of the dependent construct (Employee Engagement), making it ideal for exploratory and predictive research models (Hair et al., 2018). The flexibility of WarpPLS further allowed for the rigorous and reliable assessment of the multi-step mediation effect of Burnout, aligning with contemporary research that uses PLS for complex organizational and psychological models (Al Halbusi et al., 2020; Mensah et al., 2023).

3.2 Subject and Study Site

Survey dissemination was highly targeted. As the researchers render their practicum hours, they also approached staff members employed by their respective host training establishments. The study required 300 respondents who were at least 18 years of age, working remotely (full-time or hybrid). Due to time constraints, the researchers garnered only a total of 207 respondents.

As the study involves individuals who operate outside of a centralized physical workplace, the study site will be virtual. By focusing on remote workers and utilizing a virtual study site, the research remains consistent with its objective of understanding psychological and engagement-related outcomes in technology-mediated work contexts.

3.3 Instrumentation

Before the survey was sent out, the questionnaires were tested in a pilot program to make sure it was reliable. The survey questionnaire has four closed-ended sections with items chosen by the researcher: Part I: Demographic Profile: 6 multiple-choice questions about age, sex, educational attainment, length of employment, and work setup. Part II has 7 questions about burnout, Part III has 5 questions about technostress, and Part IV has 9 questions about employee engagement. All of the questions in Parts II–IV use a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) to make sure that the answers are consistent and can be measured

3.4 Data Collection Procedure

The data for this study were collected using an online survey administered through Google Forms. A purposive sampling technique was applied to intentionally employees who are 18 years old and above and is engaged in remote work in Quezon City. The survey link was disseminated across various online platforms including Facebook and Instagram to broaden reach and ensure that respondents met the inclusion criteria. To further verify eligibility and enrich the dataset, demographic criteria were included in the questionnaire. Survey dissemination also involved on-ground efforts, where researchers approached employees in their respective host training establishments during practicum hours and provided QR codes leading directly to the survey link. These QR codes were given only to company employees who satisfied

the study's requirements. Data collection spanned approximately four months, from the last week of June to the first week of November 2025.

PILOT TESTING RESULTS

The Case Processing Summary shows that all 29 responses (100%) were valid and included in the reliability analysis. No cases were excluded, indicating that the dataset was complete and free from missing values. Because all responses were usable, the reliability results reflect the full sample without any data loss or bias due to incomplete answers.

This table presents the reliability analysis for Construct A, measured using seven items (A1–A7). The corrected item-total correlations for all items range from 0.560 to 0.907, all exceeding the acceptable threshold of 0.30. This indicates that every item is positively and strongly correlated with the overall scale.

The Cronbach's Alpha values range from 0.890 to 0.924 if any single item is deleted, demonstrating that removing an item would not significantly improve the internal consistency of the scale. This confirms that all items in Scale A are contributing acceptably to the construct. Overall, the reliability coefficient of the scale is high, indicating strong internal consistency among the seven items.
The reliability statistics for Scale B, which consists of five items, show an overall Cronbach's Alpha of 0.891. This value exceeds the recommended minimum of 0.70, indicating that the scale demonstrates excellent internal consistency.

The corrected item-total correlations for items B1–B5 range from 0.582 to 0.884, all within acceptable and strong levels. These results show that each item correlates well with the total score, meaning the items measure the same underlying construct.

Cronbach's Alpha if Item Deleted ranges from 0.830 to 0.897, showing that the reliability remains high regardless of whether any item is removed. This confirms that all five items in Scale B contribute positively to the overall reliability and should be retained.

For Scale C, which consists of nine items, the Cronbach's Alpha is 0.888, demonstrating a high level of internal consistency. This indicates that the items reliably measure the same construct and the scale is statistically sound.

The corrected item-total correlations for Scale C range from 0.620 to 0.816, all of which meet the recommended threshold. This confirms that each item is strongly aligned with the construct and contributes meaningfully to the overall measurement.

The Cronbach's Alpha values if an item is deleted range from 0.863 to 0.885, indicating minimal improvement or decline in internal consistency when any single item is removed. This suggests that all nine items are essential components of the scale and collectively produce a reliable measure.
3.5 Ethical Considerations

Before gathering data, the researchers requested an Ethical Clearance Certification from the UST Commerce Ethics Review Committee to guarantee compliance with the Data Privacy Act of 2012 (Republic Act No. 10173), ensuring that all personal data is securely stored and accessible solely by the researchers for legitimate academic purposes. Data handling processes will make sure that no one can get into the data without permission, which will keep all the information safe and private.
The study will follow all the rules for ethical research during the data collection process. Every potential participant will get an informed consent form explaining the study's goal, their rights as respondents, and guarantees of confidentiality and voluntary participation.

Only the researchers, statistician, and thesis adviser had access to participants' data. Security measures and access controls on Google Drive, Forms, and Sheets were limited exclusively to the authorized users. All collected data will be securely stored for up to three (3) years after the study's completion to allow for possible revisions or follow-up research.

3.6 Data Analysis

All statistical analyses were conducted using software including the PLS-Regression and mediation tests, were conducted using WarpPLS statistical software. This will ensure accurate handling of data and rigorous interpretation of the results, enabling the researchers to draw meaningful conclusions about how technostress influences burnout and, consequently, employee engagement in remote work environments.
This chapter outlined the research design, participants, instruments, and analytical procedures utilized in the study. The methods presented ensured the reliability and validity of the findings discussed in the succeeding chapter.

4. RESULTS

To examine the mediating role of burnout in the relationship between technostress and employee engagement among remote workers, 207 valid responses were collected and analyzed. The results were processed using WarpPLS for PLS-Regression analysis, involving both measurement and structural model assessments to effectively meet the research objectives.

Table 6. Structural Model

The structural model demonstrates that the influence of Technostress on Employee Engagement is primarily channeled through Burnout, confirming a strong relationship across all paths. The model exhibits strong explanatory power, with Technostress accounting for a highly significant 63% ($R^2=0.63$) of the variance in Burnout. The analysis supports all three direct hypotheses: Technostress is a very strong positive predictor of Burnout ($B = 0.79$, $P < 0.01$), and Burnout is a strong negative predictor of Employee Engagement ($B = -0.54$, $P < 0.01$). Additionally, a smaller, but still significant, direct negative effect exists from Technostress to Employee Engagement ($B = -0.25$, $P < 0.01$). These predictors account for a significant 57% ($R^2=0.57$) of the variance in Employee Engagement. This combination of significant direct and indirect effects strongly supports the conclusion of Partial Mediation, highlighting Burnout as the critical mechanism through which Technostress undermines employee dedication and motivation.

Table 7. Model Fit and Quality Indices

Using WarpPLS, the model shows excellent fit and strong validity. The Average Path Coefficient (APC = 0.528, $p < 0.001$) indicates strong and significant relationships among the constructsThe Average R-squared (ARS = 0.602) and Adjusted R-squared (AARS = 0.599) reflect high explanatory power and model stability. Multicollinearity is not a concern, as both AVIF (2.825) and AFVIF (2.809) fall well below acceptable limits. The GoF value (0.611) indicates a large effect size and excellent predictive quality. With SPR, RSCR, SSR, and NLBCDR all equal to 1.000, the model shows consistent, valid causal relationships without suppression or paradox effects. Overall, the model is statistically reliable and demonstrates strong causal and explanatory strength among the key constructs.
Technostress's inclusion in the model confirms that technology is a relevant factor influencing employee outcomes in this data set.

Burnout represents the emotional exhaustion and reduced professional efficacy resulting from prolonged workplace stress. The high Adjusted R^2 (ARS = 0.602) indicates that the other constructs, including Technostress, are able to explain a substantial portion of the variance in employee Burnout levels. This confirms that the measurement of this stress-related construct is reliable and stable within the proposed structural framework.

Employee Engagement is the positive, fulfilling, work-related state of mind. The significant Average Path Coefficient (APC = 0.528, $p<0.001$) suggests that the overall network of relationships, including the influence of Technostress or Burnout has a powerful explanatory effect on Employee Engagement. The high Goodness-of-Fit (GoF = 0.611) concludes that the model effectively captures how these variables collectively determine the level of engagement.

The structural model links Technostress to Burnout and to Employee Engagement, demonstrating exceptionally strong overall fit and quality. The results strongly suggest that the psychological strain from technology use is a critical predictor in the workplace, likely driving up levels of Burnout among employees. In turn, this heightened Burnout state is expected to significantly decrease Employee Engagement, supporting the common finding that the negative experience of Technostress indirectly undermines vital positive work outcomes. The high Goodness-of-Fit (GoF = 0.611) confirms the model's high explanatory power, providing a valuable framework for understanding the complex trade-offs between technological integration and employee well-being.

Table 8. Indicator Weights

The indicator weights results confirm that all constructs, Technostress, Burnout, and Employee Engagement are valid, reliable, and free from multicollinearity issues. Technostress indicators show the strongest and most consistent contributions (weights = 0.227–0.264, $p < 0.001$), with acceptable VIFs (2.02–2.79). Burnout indicators also perform well (weights = 0.14–0.192, $p < 0.05$), though some VIFs are slightly higher yet still within acceptable limits. Employee Engagement indicators demonstrate good construct validity (weights = 0.127–0.168, $p < 0.05$) and low VIFs (1.85–2.68), confirming independent contributions. Overall, all indicators are statistically significant, effect sizes are moderate to strong, and

no multicollinearity or inconsistency is observed, indicating a robust and well-specified measurement model.

Technostress

The indicators for Technostress reflect consistently strong and reliable contributions to the construct. Most items show high positive weights (ranging roughly 0.74–0.86), all statistically significant at $p < 0.001$, indicating that each item meaningfully explains the presence of technostress among respondents. The VIF values fall within acceptable limits, confirming that no multicollinearity is affecting the model. Overall, the Technostress construct is stable, well-specified, and demonstrates strong convergent validity, confirming that the indicators effectively capture the pressure, strain, and technology-related demands faced by employees.

Burnout

Burnout indicators also perform well, with weights showing moderate to strong contributions to the construct. Most items load positively and significantly ($p < 0.001$), with weights generally between 0.76 and 0.92, confirming that they reliably represent symptoms of emotional exhaustion, fatigue, and strain. A few indicators have slightly higher VIF values, but these remain within acceptable thresholds and do not threaten the validity of the measurement. Overall, the burnout construct is statistically sound, demonstrating high reliability and confirming that respondents' experiences of exhaustion and overload are consistently measured.

Employee Engagement

Employee Engagement indicators show strong, stable performance with high positive weights (around 0.60–0.79), all significant at $p < 0.001$. These results confirm that the items effectively capture key aspects of engagement such as enthusiasm, dedication, and involvement in work. The VIF values are low and within ideal ranges, indicating no evidence of multicollinearity among items. The construct demonstrates excellent validity and reliability, suggesting that employees' engagement levels are being measured accurately, with each indicator contributing independently and meaningfully to the overall construct.

Table 9. Correlations among Latent Variables with Square Roots of AVEs

In this analysis, Average Variance Extracted values for Technostress (0.809), Burnout (0.825), and Employee Engagement (0.727) were all greater than their respective off-diagonal correlations. For instance, the correlation between Technostress and Burnout (0.792) is less than both 0.809 and 0.825. This outcome successfully establishes discriminant validity, confirming that each construct in the model is statistically distinct and unique, thereby supporting the quality of the measurement model. Furthermore, the strong correlations observed (e.g., 0.792 between Technostress and Burnout, and -0.733 between Burnout and Employee Engagement) are statistically significant ($P < 0.001$) and align with the hypothesized strong relationships in the structural model.

Table 10. Summary of Path Coefficients and Hypothesis Testing

Based on the results, all hypotheses were statistically supported, meaning the analysis found sufficient evidence to reject the null hypotheses. Therefore, the study accepts or supports the Alternative Hypotheses.

This indicates that the proposed relationships among Technostress, Burnout, and Employee Engagement are significant.

The hypothesis testing confirms the highly significant nature of the structural model. All three direct hypotheses (H1, H2, and H3) were strongly supported at $P < 0.01$. The analysis showed a very strong positive relationship between Technostress and Burnout ($B = 0.79$), indicating that higher technology-related stress is a primary driver of employee exhaustion. Burnout, in turn, is a strong negative predictor of Employee Engagement ($B = -0.54$). Crucially, the Indirect Effect (H4) was also highly significant ($B = -0.428$, $P < 0.001$), confirming that Burnout significantly mediates the relationship between Technostress and Engagement. Because both the direct (H3) and indirect (H4) paths are significant, the study concludes that Partial Mediation exists.
Table 11. R^2 and Effect Sizes (f^2)

The model demonstrates strong explanatory power, with the R^2 values indicating that 63% of the variance in Burnout is explained by Technostress, and 57% of the variance in Employee Engagement is explained by Technostress and Burnout combined. The practical significance of the relationships is further confirmed by the effect sizes (f^2). The f^2 value for the Technostress -> Burnout path is large (0.632), underscoring its profound impact. Similarly, the total effect of Technostress on Engagement is large (0.466). Most importantly for the mediation hypothesis, the Indirect Effect demonstrates a moderate-to-strong practical effect ($f^2 = 0.293$), meaning Burnout explains nearly one-third of the overall variance transmission from Technostress to Engagement.

5. Discussion

Technostress is becoming more and more of a problem in modern workplaces, especially when people work from home and rely on technology a lot. The goal of this study was to find out how Technostress, Burnout, and Employee Engagement are related to each other among remote workers in Quezon City. The results showed that there were strong and statistically significant links between the three variables, which is in line with the Job Demands–Resources (JD-R) Model (Bakker & Demerouti, 2007). The results show that too many technological demands can be job stressors that wear down workers' mental resources, which can make them more likely to burn out and less likely to be engaged.

The study's first hypothesis, which said that Technostress has a big positive effect on Burnout, is supported by the results. This indicates that employees subjected to elevated levels of technological overload, intrusion, and complexity are more susceptible to emotional exhaustion and psychological distress. These results are in line with what Suh and Lee (2017) and Molino et al. (2020) found: that constant digital demands raise stress levels and make it harder for employees to deal with stress. When people work from home, they use technology to communicate and get things done. Constant exposure to digital platforms can make people more tired and emotionally drained, which can lead to burnout symptoms like negativity and lower performance at work (Maslach et al., 2001).

The second hypothesis, which proposed that Burnout adversely impacts Employee Engagement, is corroborated by the findings. This shows that when employees are more burned out, they are less motivated, energetic, and committed to their jobs. Burnout is the opposite of engagement, as Schaufeli

and Bakker (2004) and Koutsimani et al. (2019) found. It lowers energy, commitment, and absorption. Burnout is a psychological barrier that keeps employees from staying interested and focused on their work tasks within the JD-R framework (Demerouti et al., 2023).

The third hypothesis, which said that Technostress has a direct negative effect on Employee Engagement, is also true. Technostress directly decreased employee engagement levels, even in the absence of burnout as a mediating factor. This finding suggests that constant technological pressures, constant connectivity, and technology-induced fatigue may reduce employees' enthusiasm and productivity. This is in line with what Brooks et al. (2017) and Califf et al. (2020) found using too much technology can make you feel overwhelmed and less happy at work.

Finally, the mediating function of Burnout between Technostress and Employee Engagement was validated, showing partial mediation. The findings demonstrate that technostress reduces engagement both directly and indirectly by affecting burnout. The important indirect path coefficient (-0.428, $p < 0.001$) indicates that burnout is a crucial mechanism explaining the manner in which digital stressors decrease motivation and work commitment. This corresponds with the research conducted by Tarafdar et al. (2019) and Salanova et al. (2023), which claimed that increased technological demands exhaust employees' emotional resources, consequently reducing engagement over time.

In general, the findings of this study show that Technostress is a major cause of Burnout, which in turn lowers Employee Engagement. These results align with the JD-R Model and prior studies that highlight the relationship between job demands and resources as an indicator of employee well-being and performance. The study highlights the importance of managing digital demands and supporting employees' psychological health to maintain engagement in technology-driven remote work environments.

6. Conclusion

The study was conducted to examine the effects of Technostress on Burnout and Employee Engagement among remote workers in Quezon City, using the Job Demands–Resources (JD-R) Model as the theoretical foundation. As the results have shown, Technostress has a significant positive effect on Burnout and a significant negative effect on Employee Engagement. Burnout was also found to have a negative impact on Employee Engagement and to mediate the relationship between Technostress and Employee Engagement.

These results show that when workers are constantly overloaded with technology, information, and connectivity, their mental and emotional energy runs out, which leads to more burnout and less engagement. This result backs up earlier studies that say technostress hurts employees' health and work performance. Burnout is a major psychological factor that connects digital stressors to lower engagement. This shows how important it is to deal with both emotional and technological demands at work.

The results of this study show a strong connection between Technostress, Burnout, and Employee Engagement. Organizations can now use this information to focus on improving the mental and digital health of their remote workers. The researchers conclude that organizations can adopt initiatives such as

digital literacy and work-life balance training to assist employees in effectively managing technological demands. Setting clear rules for how to communicate about being online and what work needs to be done can also help reduce the stress that comes with using too much technology.

In addition to training programs, companies may also start wellness programs to help employees deal with the emotional stress that comes with technostress. Regular rest periods, virtual team-building activities, and counseling sessions may help employees recover from digital fatigue and enhance their engagement levels. Also, performance feedback tools like the 360-degree appraisal can help workers find ways to improve and recognize their contributions, which can make them feel more motivated and like they belong.

The study found that Burnout has a major impact on the relationship between Technostress and Employee Engagement. Other studies might look into other factors that may have an effect on this relationship, such as coping methods, digital skills, and support from an organization. Further research may concentrate on certain industries or broader geographic regions to enhance the validation of the findings. Researchers and organizations may be able to come up with ways to stop burnout, lower technostress, and make employees more engaged in remote work settings.

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