Journal for Social Science Archives

Online ISSN: 3006-3310
Print ISSN: 3006-3302
Volume 3, Number 3, 2025, Pages 97 – 118
Journal Home Page
https://jssarchives.com/index.php/Journal/about

Technostress and Nomophobia as Psychological Risks in Remote Digital Work: Evidence from Female Professionals in Pakistan's IT Sector

Saba Saira[1] & Imran Sharif[2]

[1]*Lahore Business School, The University of Lahore, Pakistan, Email: sairamahmood324@gmail.com*
[2]*Lahore Business School, The University of Lahore, Pakistan, Email: imran.sharif@lbs.uol.edu.pk*

ARTICLE INFO

Article History:

Received:	*May*	*15, 2025*
Revised:	*June*	*24, 2025*
Accepted:	*July*	*04, 2025*
Available Online:	*July*	*18, 2025*

Keywords:

Technoference, Telepressure, Technostress, Digital Fatigue, Nomophobia, Work Life Balance

Corresponding Author:
Saba Saira
Email:
sairamahmood324@gmail.com

ABSTRACT

This study examined how digital stressors affect the work-life balance of female employees working from home in Pakistan's IT sector. Using the Stressor-Strain-Outcome model, the research explored the direct and indirect relationships between employee technoference, telepressure, and digital fatigue (stressors), employee technostress (strain), and work-life balance (outcome), with nomophobia tested as a moderator. Data were collected through an online survey from 360 female IT professionals with at least a graduation degree. Results showed that all three digital stressors significantly increased technostress and reduced work-life balance. Technostress also mediated the relationship between each stressor and work-life balance. Furthermore, nomophobia significantly strengthened the negative effect of technostress on work-life balance. The study offers both theoretical contributions by extending the SSO framework and practical insights for IT organizations to manage digital overload, improve employee well-being, and support remote female workers more effectively. It calls for urgent organizational strategies such as digital boundaries, flexible communication norms, and screen-time awareness programs to reduce digital strain and support a healthier balance between work and personal life.

Introduction

In today's remote work culture, staying constantly connected has become a daily reality (Büchler et al., 2020). For female employees working from home in Pakistan's IT sector, this connectivity brings both opportunity and strain. While digital tools have allowed work to continue outside the office, they have also made it harder to disconnect (Mazmanian & Erickson, 2014). In Pakistan, the number of women working in the tech sector is rising; however, they often face unique challenges when working from home (Idrees, 2019). These include household responsibilities, lack

of work-life boundaries, and the pressure to be always available online. According to the Seraj (2023), women make up about 16% of the tech workforce. Among those, a significant portion works remotely due to flexible arrangements, childcare responsibilities, or company policy.

The shift to remote work has intensified certain digital stressors. One of them is technoference which refers to technology interruption or interferences with personal life. This can be as simple as a work notification popping up during dinner or a late-night call from a manager (Ali & Iqbal, 2025; McDaniel & Coyne, 2016). Over time, these small interruptions add up. Research shows that constant interruptions from work-related technology reduce focus, increase stress, and harm relationships (McDaniel & Coyne, 2016). Another stressor is telepressure which is defined as the feeling of needing to respond to work messages immediately, even outside regular hours. Employees with high telepressure often report poorer sleep, anxiety, and emotional exhaustion (Barber et al., 2019). Combined with digital fatigue, these factors form a heavy load on the mental well-being of remote workers. Digital fatigue is the tiredness caused by extended screen time and frequent digital communication (Romero-Rodríguez et al., 2023).

Digital fatigue has grown more common, especially after the pandemic accelerated remote work. In a recent report, 67% of remote workers globally said they felt digitally drained at the end of their workday (Work Trend Index, 2025). In Pakistan, similar experiences have been noted, particularly among women balancing both professional and domestic roles (Shahbaz et al., 2021). Long virtual meetings, excessive screen exposure, and non-stop notifications contribute to mental exhaustion, which slowly affects motivation and satisfaction. When these digital stressors are not addressed, they trigger a more complex outcome known as technostress (Akwa Nde, 2022; Bencsik & Juhasz, 2023).

Technostress refers to the psychological strain that comes from dealing with information and communication technologies. It includes feelings of overload, constant connectivity, and anxiety due to rapid tech changes (Nayak et al., 2025). For female IT employees working from home, technostress can quietly undermine their ability to manage personal and professional responsibilities. It can lead to burnout, lack of concentration, and overall dissatisfaction. When technostress builds up, it negatively affects work-life balance, which is already a delicate issue in the remote work setup (Saim et al., 2021; Tarafdar et al., 2015).

Work-life balance means the ability to manage work and personal life in a healthy and satisfying way (Susanto et al., 2022). In Pakistan, achieving this balance has always been a challenge for women in the workforce. Cultural expectations, limited support systems, and workplace biases add extra pressure. Working from home might appear flexible, but for many women, it blurs the line between work and life. The living room becomes the office, and office hours extend into personal time (Thilagavathy & Geetha, 2021; van der Heijden et al., 2024). When digital stressors like technoference, telepressure, and fatigue are involved, maintaining a healthy balance becomes even harder.

For remote workers, especially those in client-facing or team-dependent roles, being without a phone can cause real distress. This new concern in this digital mix is nomophobia, which refers to the fear of being without one's mobile phone (Notara et al., 2021). People who experience it tend to feel anxious when disconnected or unable to check messages. Studies have found that nomophobia can worsen technostress and make it more difficult for employees to mentally detach from work (Hessari et al., 2024). In this study, nomophobia is examined as a moderator that might amplify the negative impact of technostress on work-life balance.

Although the role of digital stressors has been explored in other countries, very few studies have focused on Pakistan's tech industry, especially from a gender-specific perspective. Even fewer have examined these issues in the context of women working from home. Most prior research has studied technostress as a direct outcome or as a mediator in general employee populations (Brooks et al., 2017; Ragu-Nathan et al., 2008), but not in connection with digital fatigue, telepressure, or technoference in one model. Also, nomophobia is usually explored in students or general populations (Gezgin et al., 2018; Tuco et al., 2023), not as a workplace moderator. This leaves a serious gap in understanding how all these variables interact in a real-world setting for a vulnerable and growing workforce segment.

This study helps fill that gap. By focusing on female employees in Pakistan's IT sector who work from home, it highlights how digital demands are affecting their lives. It uses a comprehensive model to explain how different digital stressors increase technostress and how that, in turn, damages work-life balance. It also examines whether nomophobia makes that relationship even worse. This isn't just an academic concern. The findings can guide HR professionals, team leads, and policymakers in designing better work-from-home support systems. If companies ignore these issues, they risk high turnover, low productivity, and poor mental health outcomes among a key part of their workforce.

The study's relevance extends beyond Pakistan. As remote work becomes a long-term model in many countries, understanding how digital stress affects women working from home is globally important. In Pakistan, however, it's even more urgent. In this country, women in IT are already dealing with limited representation, traditional gender roles, and now, rising digital stress (Fazal et al., 2019; Noorani & Shakir, 2021). Addressing their work-life balance is not just about well-being, it is about retaining skilled talent and ensuring a more inclusive tech industry.

Literature Review and Hypotheses Development

Underpinning Theory

The theoretical foundation of this study is grounded in the Stressor-Strain-Outcome (SSO) model. This model provides a clear explanation of how certain stressors in the environment, such as digital interruptions and pressure from technology, can lead to psychological strain, which then influences behavioral and emotional outcomes (Wang & Teo, 2023). It is particularly useful in understanding how work-related digital stressors affect employees' personal and professional lives. In the context of this study, the model is applied to explain how employee technoference, telepressure, and digital fatigue (stressors) increase employee technostress (strain), which in turn negatively impacts work-life balance (outcome). The moderating role of nomophobia helps assess whether this psychological dependency on mobile devices intensifies the negative impact of technostress on work-life balance. Several studies have validated the use of the SSO model in examining workplace digital stress, particularly in remote settings. For example, Tarafdar et al. (2015) applied the model to explore how digital demands trigger emotional exhaustion in tech employees.

Similarly, Ayyagari et al. (2011) used the SSO framework to explain how specific characteristics of technology result in stress and reduced well-being. This theoretical lens fits well with the study's focus on female employees working from home in Pakistan's IT sector, where boundaries between work and personal life are already fragile. The model allows for a systematic investigation of how multiple stressors interact and lead to negative outcomes through a common psychological pathway. By using the SSO model, this study links digital work demands to emotional strain and further connects that strain to the quality of personal life, a pattern strongly relevant for the modern

remote worker. This theoretical approach supports the full research model (see figure 1) and clarifies why technostress is placed as a mediator, capturing the psychological cost of remote digital work for women in the tech field.

Employee Technoference

Employee technoference refers to frequent disruptions caused by digital devices or work-related technology that interrupt personal life, especially during non-work hours (Ali & Iqbal, 2025). In the context of female employees working remotely, such interference can blur the line between work and home, often leading to frustration and emotional strain. McDaniel and Coyne (2016) found that frequent digital interruptions, such as work emails or chat notifications during family time, significantly damage relationship satisfaction and increase stress. This is especially important for remote workers in Pakistan, where cultural expectations place significant household responsibilities on women (Shahbaz et al., 2021). As a result, when work technology interferes with family time, it not only creates role conflict but also triggers guilt and anxiety. Technoference has often been overlooked in organizational studies; however, recent research is recognizing it as a unique and growing stressor. For instance, McDaniel et al. (2021) noted that employees who experienced frequent digital interruptions had lower job satisfaction and higher emotional exhaustion. In work-from-home environments, the problem becomes more intense due to the absence of physical boundaries (Chang & Zhang, 2025; Lapierre & Zhao, 2022).

For female IT professionals in Pakistan, who are already juggling cultural expectations, parenting, and professional duties, this kind of interference can lead to heightened technostress. The problem is not just the frequency of digital intrusions but their unpredictability and persistence. A message from a supervisor late at night can shift the emotional tone of an entire evening, preventing relaxation and recovery. Despite this, most organizational support structures do not address the emotional consequences of digital interruptions. The existing literature also lacks research on how technoference interacts with broader psychological outcomes, such as technostress and work-life balance, especially in underrepresented populations like Pakistani women in IT. This study aims to fill that gap by treating technoference not as a minor annoyance, but as a serious stressor that may silently damage mental health and family dynamics in remote work settings.

Employee Telepressure

Employee telepressure captures the psychological pressure employees feel to respond to messages, emails, or digital tasks immediately, even outside of working hours (Aziz & Aman-Ullah, 2023). While communication tools are meant to improve responsiveness and productivity, they often have unintended effects. Santuzzi and Barber (2018) found that higher levels of telepressure were associated with burnout, poor sleep quality, and increased stress. This pressure creates a situation where employees feel “always on,” which reduces their ability to recover after work and increases emotional fatigue (Barber & Santuzzi, 2015). For women working from home in the Pakistani tech sector, this is particularly troubling. Many female employees already face dual demands including managing work and home responsibilities. When telepressure sets in, it extends the workday beyond limits and makes it harder to mentally disconnect (He et al., 2024). The local context amplifies the impact. Due to hierarchical and male-dominated work cultures in many tech firms, women may feel additional pressure to prove their commitment, leading them to overcompensate by responding to messages quickly and at all hours (Tanwir & Khemka, 2018).

Research by Derks et al. (2015) showed that even after-hours communication could lead to emotional exhaustion when employees feel obligated to reply instantly. In Pakistan, where many tech jobs are time-sensitive and client-driven, the culture of urgency further intensifies this

behavior. The fear of being judged for slow responses or not being available adds to the psychological weight of telepressure (Grawitch et al., 2018). Despite this, organizations rarely treat it as a mental health risk. The literature lacks studies that specifically examine telepressure among remote female workers in South Asia. Most of the research has focused on Western office settings (He et al., 2024), leaving a significant gap. This study helps address that by analyzing how telepressure contributes to technostress and eventually disrupts work-life balance. In doing so, it highlights the need for better digital communication policies and mental health awareness in the tech industry.

Digital Fatigue

Digital fatigue refers to the exhaustion individuals feel after prolonged engagement with digital devices, especially when work relies heavily on screens and virtual communication (Supriyadi et al., 2025). This issue has become more prominent in remote work environments, where technology serves as the sole medium for meetings, collaboration, and task execution (Dong et al., 2025). Women working from home in Pakistan's IT sector often deal with extended hours of screen time without adequate breaks, leading to both physical and cognitive strain (Murtaza & Molnár, 2024). Research by Mylona et al. (2023) identified symptoms of digital fatigue such as eye strain, lack of focus, irritability, and sleep disturbances. These symptoms are intensified when employees switch rapidly between tasks like video calls, messaging apps, and document editing. In the Pakistani context, female employees often face additional household demands, which limit their opportunity for rest or recovery, making them more susceptible to fatigue.

A study by Supriyadi et al. (2025) found that continuous exposure to digital media during work-from-home settings led to reduced job satisfaction and higher stress among women in tech-related jobs. Unlike temporary tiredness, digital fatigue accumulates over time and slowly undermines motivation and emotional energy. It is linked with emotional burnout and impaired decision-making (Dong et al., 2025). Despite its relevance, digital fatigue remains an underexplored concept in workplace stress literature, particularly in South Asian cultures. It is often confused with general work stress (Stangl et al., 2023), though the mechanisms are different. Digital fatigue originates specifically from the overuse of technology rather than workload itself. This study treats it as a distinct stressor that contributes to technostress and influences the broader outcome of work-life balance. By addressing digital fatigue in the context of remote female IT workers, this study brings attention to a neglected but growing problem that silently affects mental wellness and long-term productivity in tech-dependent jobs.

Employee Technostress

Employee technostress is the emotional and mental strain caused by the use of technology in work settings. It can include anxiety about learning new systems, frustration with connectivity issues, and stress from being constantly reachable (Bencsik & Juhasz, 2023). As remote work becomes permanent in many tech firms, the risk of technostress increases. Tarafdar et al. (2011) identified five key dimensions of technostress: techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty. Each of these factors is amplified in work-from-home setups. For example, techno-invasion occurs when employees feel work has entered their personal lives through technology (Chen et al., 2022). This is particularly true for women working from home in Pakistan, where private space is often limited and the burden of multitasking is high. A study by Ragu-Nathan et al. (2008) found that technostress significantly reduced job satisfaction and productivity among employees using ICT tools regularly. For women in Pakistan's IT sector, technostress is not just about learning new systems but also about maintaining emotional balance

while fulfilling family responsibilities. They often work without defined boundaries, leading to fatigue and mental overload.

Kivimäki (2022) reported that remote female employees in South Asia experience higher levels of technostress compared to their male peers due to a combination of cultural expectations and limited access to technical support. Technostress also damages interpersonal relationships, as it limits communication and reduces empathy in virtual settings. It impacts concentration, increases emotional detachment, and eventually affects personal well-being (Maier et al., 2019; Nayak et al., 2025). Despite its severity, many companies still treat it as an individual problem rather than a systemic issue. Few policies exist to reduce the psychological burden of digital tools, especially for remote workers. This study places technostress as a mediator, capturing how digital stressors translate into real-world emotional strain. In doing so, it explains how everyday experiences with technology turn into deeper psychological challenges for female employees working remotely in high-pressure digital environments.

Work Life Balance

Work-life balance describes the ability to manage work responsibilities alongside personal and family roles in a way that maintains mental health and life satisfaction (Aziz & Aman-Ullah, 2023). For remote employees, this balance is increasingly hard to maintain. The digital work culture has removed traditional boundaries between work and home, especially for women (Barber et al., 2019). In Pakistan, cultural expectations often require women to take primary responsibility for household management. When these responsibilities intersect with work demands through digital connectivity, the result is conflict and exhaustion. A study by Greenhaus and Allen (2011) emphasized that poor work-life balance can lead to burnout, reduced job commitment, and deteriorating mental health. For women in IT, who often manage time-sensitive projects and client communication, constant availability becomes the norm. This leads to intrusion into personal time and limits opportunities for rest. Fazal et al. (2022) observed that Pakistani women in remote tech roles reported frequent sleep disruption and emotional fatigue due to the inability to disconnect from work devices.

Most companies lack formal support systems that allow female employees to set boundaries or ask for flexibility. This imbalance is more severe when digital tools enable 24/7 contact, adding pressure to be responsive at all times (Javed et al., 2024). Empirical evidence shows that when employees experience high technostress, their ability to maintain work-life balance decreases (Turel & Gaudioso, 2018). However, few studies have investigated this connection in South Asian or gender-specific contexts. Much of the literature still focuses on office-based employees in Western countries. This study contributes to a better understanding by examining how female tech workers in Pakistan deal with blurred boundaries in a remote work setting. It links the mental strain caused by digital stressors to the broader issue of work-life imbalance. In this way, it highlights the need for structured digital policies and psychological support to help employees regain control over their time and well-being.

Nomophobia

Nomophobia, or the fear of being without access to one's mobile phone, has emerged as a modern psychological concern. It is characterized by anxiety, restlessness, or discomfort when individuals are unable to use their phone, check messages, or stay connected (Hessari et al., 2024). While often studied in students, its impact on professional settings, especially among remote workers, is gaining attention. For female employees working from home in Pakistan's IT sector, mobile phones are essential not only for work-related communication but also for managing personal

responsibilities (Nawaz et al., 2025). This continuous dependency may heighten anxiety when the device is unavailable, leading to emotional discomfort that hampers well-being.

Yildirim and Correia (2015) developed a validated scale to measure nomophobia and found strong associations with anxiety and poor sleep quality. In a work-from-home setting, especially where women juggle household and job tasks simultaneously, even minor disruptions in connectivity can lead to frustration or panic. This anxiety may worsen if work culture demands constant availability, as is often the case in Pakistan's tech sector. Nomophobia also interacts with other psychological stressors. Argumosa-Villar et al. (2017) found that nomophobia is linked with higher burnout and emotional exhaustion, especially in people under work pressure. As a moderator, it can amplify the effects of technostress, making it harder for employees to mentally detach from work. This is crucial for female IT workers in Pakistan, where social expectations and lack of support systems already make work-life balance difficult (Erdurmazlı et al., 2024). When a person feels they must always be available through their phone, recovery becomes nearly impossible. Despite its relevance, nomophobia is under-researched in workplace studies, particularly in South Asia. Most findings still come from student samples. This study addresses that gap by exploring how nomophobia intensifies the link between technostress and work-life balance among remote-working women in a high-pressure digital environment.

Employee Technoference and Employee Technostress

In digital workplaces, frequent intrusions from technology can create psychological tension. Technoference, defined as the interruption of personal or professional tasks due to digital devices, is a growing concern among remote employees (McDaniel et al., 2021). This issue becomes more pronounced for women working from home, especially in cultures like Pakistan where household expectations are high. A constant stream of work notifications, emails, or messages can disrupt daily life, forcing individuals to multitask beyond capacity. These digital disruptions are not just inconvenient, they create cognitive overload, reduce recovery time, and build emotional fatigue (Saeed & Ali, 2025). Over time, this can lead to a deeper psychological strain known as technostress.

According to the Stressor-Strain-Outcome (SSO) model, stressors like technoference serve as external pressures that trigger psychological responses such as strain. When employees repeatedly face interruptions through digital means, their emotional resources are drained (Wang & Teo, 2023). These intrusions also increase perceived demands, leaving little space for mental detachment. This is supported by McDaniel and Coyne (2016), who found that digital interruptions caused relational stress and reduced well-being. While earlier studies have linked various digital stressors to technostress, technoference has been less frequently studied in this role. Chang and Zhang (2025) identified technoference as a predictor of reduced job satisfaction and emotional exhaustion, both of which are outcomes of technostress. Given the theoretical backing and emerging empirical evidence, especially in remote work environments, it is expected that technoference will significantly increase technostress among female IT professionals working from home. Therefore, following hypothesis is developed.

H1: *Employee technoference is positively associated with employee technostress.*

Employee Technoference and Work Life Balance

Maintaining a clear line between work and personal life is difficult when technology creates constant disruptions. Technoference blurs this line by allowing work to intrude into non-work time, often without warning (McDaniel et al., 2021). For female employees working remotely in Pakistan's IT sector, this becomes more complex. Household responsibilities, caregiving roles, and

cultural expectations already demand their attention. When work-related interruptions occur during family meals or rest hours, the pressure intensifies. These disruptions prevent proper detachment, making it harder to engage meaningfully in personal life. This erosion of boundaries contributes to dissatisfaction, fatigue, and weakened emotional well-being (McDaniel et al., 2021).

The SSO model helps explain this relationship. Technoference, as a digital stressor, increases the strain experienced by employees, which in turn affects broader life outcomes. Work-life balance is one such outcome, influenced not only by workload but also by how and when work intrudes. McDaniel and Coyne (2016) found that digital interruptions in personal settings reduced relationship satisfaction and increased distress. In cultures where women are expected to prioritize family responsibilities, repeated digital interference can cause inner conflict and guilt. While the connection between technostress and work-life balance has been widely studied, direct links between technoference and work-life balance remain underexplored, especially in gender-specific and remote work contexts. This study aims to fill that gap by examining whether digital interruptions directly reduce the ability of female remote workers in Pakistan to manage both domains effectively.

H2: *Employee technoference is negatively associated with work-life balance.*

Employee Telepressure and Employee Technostress

Telepressure refers to the internal urge to respond quickly to work messages, even outside working hours. It often stems from workplace expectations, fear of being judged, or the belief that quick replies signal commitment (He et al., 2024). In remote work setups, especially for women in Pakistan's tech sector, telepressure becomes more intense. Without fixed office hours, the pressure to stay connected becomes a permanent part of work culture (Aziz & Aman-Ullah, 2023). Female employees who are also managing children or housework feel the strain more severely. The psychological load of always being available can quietly lead to exhaustion and burnout (Kao et al., 2020).

From the lens of the SSO model, telepressure acts as a stressor that contributes to psychological strain (technostress). The model helps us understand how continuous digital demands affect internal emotional states. Santuzzi and Barber (2018) found that employees with high levels of telepressure reported more emotional exhaustion and less psychological recovery. The problem is not only the frequency of communication, but the urgency with which responses are expected. In work-from-home conditions, this often leads to employees checking their phones during dinner, waking up to respond to late-night emails, or delaying rest due to unfinished digital conversations. All of these contribute to emotional fatigue and mental depletion, which are core components of technostress (Bencsik & Juhasz, 2023; Bhatt & Kothari, 2022). Given these patterns, it is logical to expect that when telepressure is high, employees, especially women working remotely in tech, will experience more technostress.

H3: *Employee telepressure is positively associated with employee technostress.*

Employee Telepressure and Work Life Balance

Work-life balance depends heavily on the ability to switch off from work, both physically and mentally. Telepressure disrupts this by creating a feeling of obligation to respond immediately to work messages, regardless of time or context (Barber et al., 2019). For women working remotely in Pakistan's tech sector, this pressure carries added weight. Many female professionals are already juggling dual responsibilities. When they are expected to reply instantly to work messages, even

during personal or family time, it prevents emotional detachment and disrupts recovery. Over time, this constant connectivity can erode both job satisfaction and personal well-being (Aziz & Aman-Ullah, 2023; Barber & Santuzzi, 2015).

Using the SSO model, telepressure can be seen as a stressor that leads to negative life outcomes. In this case, work-life balance becomes the outcome that is impaired by the strain caused by constant communication expectations (Khan & Khalid, 2025). Santuzzi and Barber (2018) found that telepressure, especially when combined with smartphone use, led to poor psychological detachment and increased exhaustion. This connection is relevant in Pakistan's remote work culture, where organizational support for digital boundaries is often missing. Women may feel the need to respond quickly to prove their dedication or avoid negative evaluations. As a result, the stress from telepressure does not just stay at work, it follows them into every part of their day (Yikilmaz et al., 2023). This study proposes that higher levels of telepressure reduce an employee's ability to maintain work-life balance. Therefore, following hypothesis is developed.

H4: *Employee telepressure is negatively associated with work-life balance.*

Digital Fatigue and Employee Technostress

Digital fatigue builds up when employees spend long hours on screens without meaningful breaks. It is not just about physical tiredness. It affects emotional focus, motivation, and the ability to handle tasks (Dong et al., 2025). In remote work settings, this becomes a daily challenge. Female employees in Pakistan's IT sector are often online for extended periods, switching between emails, meetings, and chats. Add household duties to the mix, and there's little time left to recover. Over time, this non-stop exposure to digital platforms can lead to frustration, irritability, and cognitive overload, core features of technostress (Stangl et al., 2023).

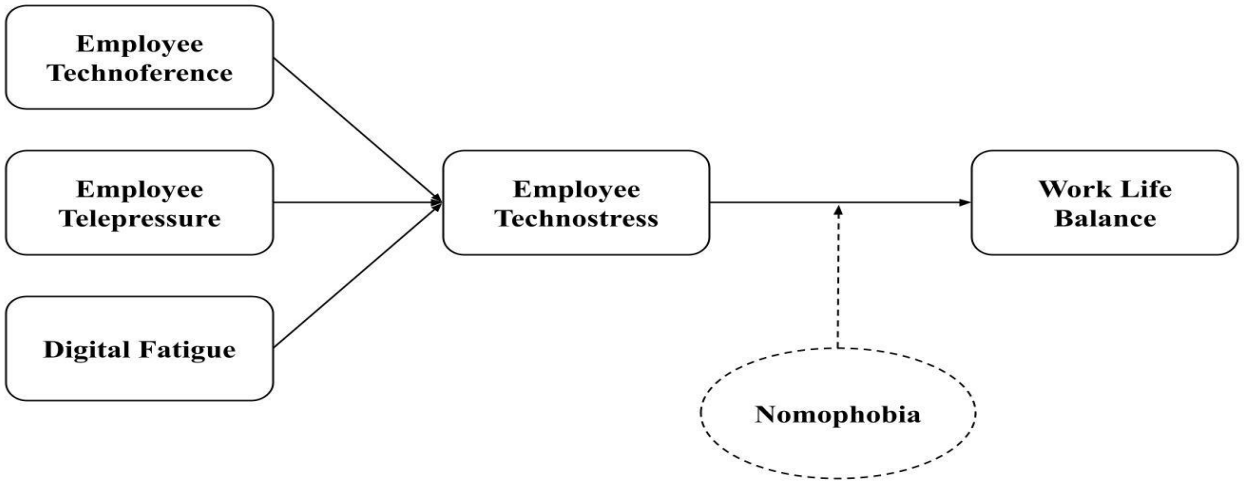

Figure 1. Conceptual Framework | *Source:* Author

The SSO model helps explain this link. Here, digital fatigue acts as a stressor. When digital tasks become overwhelming, employees start feeling strained (Wang & Teo, 2023). That strain, in this case, takes the form of technostress. Wiederhold (2020) pointed out that excessive screen time leads to symptoms like poor concentration, sleep disruption, and burnout. Dutta (2024) found that tech professionals working from home reported higher fatigue and emotional depletion due to digital overuse. These emotional responses show that digital fatigue is more than a minor discomfort, it becomes a driver of technostress. In many Pakistani homes, women don't have the luxury of separate workspaces or predictable schedules. They often respond to messages while multitasking, attend meetings amid background noise, and skip breaks. The result is a slow buildup

of emotional strain (Nisafani et al., 2020). Despite this, few organizations recognize digital fatigue as a mental health issue. This study aims to highlight how daily digital fatigue silently contributes to growing technostress among female remote workers.

H5: *Digital fatigue is positively associated with employee technostress.*

Digital Fatigue and Work Life Balance

Work-life balance depends on an individual's ability to manage job tasks while staying mentally present in personal life. But when digital fatigue sets in, this balance starts to break. Long hours in front of screens can leave employees feeling mentally drained (Stangl et al., 2023). For women working from home in Pakistan's tech sector, this fatigue is even more intense. Many manage both office work and home responsibilities without breaks or downtime. They end their workday not just physically tired, but emotionally unavailable for their family life. That's where the real damage happens.

From the SSO model's perspective, digital fatigue is a clear stressor. It produces strain in the form of emotional exhaustion, which then affects outcomes like work-life balance. Naz and Qamar (2025) showed that digital fatigue among Pakistani remote workers reduced their ability to engage in meaningful non-work activities. Fatigue dulls motivation and creates irritability, which makes it harder to focus on relationships, rest, or personal interests. Even when the workday ends, the aftereffects linger, headaches, anxiety, and decision fatigue carry over into family life (Dutta, 2024). Few studies have directly tested the link between digital fatigue and work-life balance, especially in South Asian cultures. But the signs are clear. When digital exhaustion grows, personal life suffers. This study argues that digital fatigue plays a quiet but powerful role in disturbing the work-life balance of remote female workers in tech jobs.

H6: *Digital fatigue is negatively associated with work-life balance.*

Employee Technostress and Work Life Balance

Technostress builds when employees are overwhelmed by digital tools, constant connectivity, and the pressure to keep up with changing systems. It is not just frustration with software or devices (Akwa Nde, 2022; Bhatt & Kothari, 2022). It is emotional strain caused by feeling mentally stretched by technology. In remote work environments, especially for women in Pakistan's IT industry, this stress is deeply personal. Work invades personal space, expectations are unclear, and help is often unavailable (Malik et al., 2022). The result is burnout, anxiety, and a persistent inability to relax, even after work hours.

The SSO model places technostress as a form of psychological strain. This strain, when left unchecked, spills into broader life outcomes like work-life balance. Turel and Gaudioso (2018) found that higher levels of technostress were linked to reduced satisfaction and higher emotional exhaustion. For female remote workers, technostress does not stop when the laptop closes. It lingers. Tasks feel never-ending. Breaks become stressful because of constant notifications. Guilt and worry about work start to dominate personal time. All of this chips away at the quality of family life and personal rest (Akwa Nde, 2022; Pfaffinger et al., 2022). In Pakistan, where women often take on unpaid domestic work alongside their jobs, technostress makes work-life conflict worse. It leads to skipped meals, reduced social interaction, and sleep issues. However, many organizations overlook this emotional toll. This study focuses on how technostress directly impacts women's ability to manage work and personal life, making the case for stronger digital wellness policies in remote work.

H7: *Employee technostress is negatively associated with work-life balance.*

The Mediation Role of Employee Technostress

Remote employees face multiple digital stressors in their daily routine. These include constant work interruptions, pressure to respond immediately, and mental exhaustion from continuous screen use (Shaban et al., 2025). Each of these experiences creates a psychological burden. That burden often takes the form of technostress. It may begin as mild irritation or restlessness, but over time it turns into something deeper (Srivastava et al., 2015). It reduces energy, shortens attention, and affects how well a person can manage both work and personal responsibilities. Female employees working from home in Pakistan's IT sector deal with this more frequently. They are managing both home and professional roles without support or boundaries. The result is high emotional strain that eventually affects their ability to balance both parts of life (Tarafdar et al., 2007).

The SSO model clearly explains this path. Technoference, telepressure, and digital fatigue all act as stressors. They create emotional strain, represented by technostress (Üztemur et al., 2025). That strain then reduces work-life balance. Instead of addressing each stressor in isolation, technostress helps us understand the deeper emotional cost of working in tech-heavy environments. For instance, Ragu-Nathan et al. (2008) showed that frequent interaction with technology led to cognitive overload and emotional exhaustion. Similarly, Tarafdar et al. (2011) found that technostress acted as a key mechanism linking digital demands to poor job outcomes. In the Pakistani context, women who work from home often experience all three stressors daily. Technostress becomes the invisible link that connects those challenges to disruptions in personal well-being (Shaban et al., 2025; Srivastava et al., 2015). Despite the relevance of this pathway, very few studies have looked at technostress as a mediator between digital stressors and work-life balance, especially among female employees in South Asia. This study aims to close that gap. It proposes that technostress explains how each of these stressors, technoference, telepressure, and digital fatigue—leads to a decline in work-life balance.

H8: *Employee technostress mediates the relationship between employee technoference and work-life balance.*
H9: *Employee technostress mediates the relationship between employee telepressure and work-life balance.*
H10: *Employee technostress mediates the relationship between digital fatigue and work-life balance.*

The Moderating Role of Nomophobia

Even when employees are overwhelmed by digital work demands, the outcome of that stress may depend on how they relate to their devices. Some people can disconnect and recover, while others feel anxious when separated from their phones (Erdurmazlı et al., 2024). This fear is called nomophobia. It reflects a deeper psychological attachment to mobile devices. For remote female workers in Pakistan's tech sector, mobile phones are the primary tool for work communication (Argumosa-Villar et al., 2017). But they are also a source of emotional dependency. The fear of missing a message or being unreachable creates a constant sense of urgency. That urgency makes recovery harder.

Using the SSO model, technostress is seen as a strain that reduces work-life balance. Nomophobia, as a moderator, can increase the strength of this negative effect (Üztemur et al., 2025). Employees who experience technostress and also fear disconnection may find it even harder to relax or shift focus to their personal life. Research by Argumosa-Villar et al. (2017) suggests that nomophobia increases emotional exhaustion and burnout in digital environments. However, there is a lack of research examining this effect in remote work settings or within organizational contexts. This

study fills that gap by testing whether nomophobia makes the impact of technostress on work-life balance more severe among female employees in Pakistan's IT sector.

H11: *Nomophobia moderates the relationship between employee technostress and work-life balance such that the negative effect is stronger for employees with high levels of nomophobia.*

Methods

Population and Sampling

This study adopted a quantitative research design, using a structured online survey to explore the impact of digital stressors on work-life balance among female employees working from home in Pakistan's IT sector. The focus remained on women who were employed in IT organizations across Pakistan and who met the minimum education requirement of a graduation degree. The rationale for selecting this population was based on the rising participation of women in remote tech-based roles, particularly following the shift to flexible work arrangements post-COVID-19. As digital connectivity became the norm, female tech workers started facing specific stressors related to continuous screen exposure, digital interruptions, and mobile phone dependence. Targeting this group helped explore how these stressors affected both their psychological state and their ability to maintain a work-life balance in a socially complex and culturally demanding environment.

A non-probability purposive sampling method was employed to select participants who fit the study's inclusion criteria. This sampling strategy allowed for precise targeting of female professionals working from home in IT-related roles, who could provide relevant insights regarding their digital work experiences. The sample was drawn from various cities in Pakistan, including Lahore, Karachi, Islamabad, Faisalabad, and Rawalpindi, where IT hubs and software houses have a strong presence. Participants were contacted through professional networks, LinkedIn groups, and HR contacts in tech firms that had adopted remote or hybrid work models. While probability sampling increases generalizability, purposive sampling was more suitable given the specific nature of the research context. It enabled the researcher to collect high-quality, relevant data from those directly impacted by the phenomenon under investigation (Etikan et al., 2016). A total of 360 valid responses were gathered, which were deemed sufficient based on existing recommendations for structural equation modeling (Hair Jr et al., 2019). The sample size ensured adequate statistical power and met the suggested ratio of at least 10 observations per item, considering the total number of items across all scales used.

Measurements

To measure the variables in this study, standardized and previously validated scales were used. Employee technoference was measured using a 5-item scale developed by McDaniel and Coyne (2016). Employee telepressure was measured using an 8-item scale developed by Barber and Santuzzi (2015). Digital fatigue was assessed using the 15-item Zoom Exhaustion & Fatigue Scale (ZEF) developed by Fauville et al. (2021). Employee technostress was measured using a 5-item scale from Jiang and Balaji (2022). Work-life balance was assessed using a 15-item scale developed by Fisher-McAuley et al. (2003). Nomophobia was measured using a 12-item scale developed by Aldhahir et al. (2023). All constructs were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Using previously validated scales helped ensure content and construct validity. The five-point Likert format was selected to reduce respondent fatigue while maintaining adequate variation in responses. It also allowed for better comparability with earlier research that used similar scales in organizational settings. Adopting these scales strengthened the reliability and accuracy of the data collected, as each instrument had been rigorously tested in previous studies.

Data Collection

Data were collected through an online questionnaire designed using Google Forms. The questionnaire was pilot tested with a small group of respondents to ensure clarity and remove ambiguity from the wording. The final version was distributed electronically through email, LinkedIn, and WhatsApp groups that included female tech professionals and HR departments in IT organizations. Respondents were informed about the study's purpose, assured of confidentiality, and asked to participate voluntarily. Ethical considerations were carefully followed, and no identifying information was collected. Online data collection was the most practical and efficient approach, especially given the geographic spread of the target population and the remote nature of their work. It also allowed for a higher response rate, as many female professionals could respond at their convenience without interruption to their work or personal duties. In addition, the digital format aligned with the research topic, which focused on digital stressors and remote work, making the experience more natural for participants.

Data Analysis

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) and the PROCESS macro developed by Hayes (2018). Descriptive statistics were calculated to summarize the sample characteristics and ensure completeness of data. Before testing the hypotheses, the data were screened for missing values, normality, and outliers. The reliability of each construct was examined through Cronbach's alpha. Pearson correlation analysis was performed to explore relationships among variables, followed by regression analysis for direct effects. Mediation and moderation analyses were conducted using PROCESS models 4 and 14 respectively. The use of PROCESS allowed for robust estimation of indirect and conditional effects with bootstrapping techniques, which is considered a reliable approach in behavioral research. Bootstrapping with 5000 samples provided confidence intervals to assess the significance of mediation and moderation paths. This analysis framework was selected to align with the conceptual model of the study, which involved testing multiple indirect and interaction effects. The choice of SPSS and PROCESS was appropriate for a model of moderate complexity with a sample size of 360, ensuring accurate and interpretable results that could inform practical recommendations.

Results and Findings

Data Cleaning

To ensure the integrity and accuracy of the dataset, several data cleaning procedures were carried out before statistical analysis. First, the dataset was screened for missing values using frequency distribution. No missing responses were found, confirming the completeness of the data and removing the need for imputation or case deletion. Next, outliers were assessed using the Mahalanobis distance method, which is commonly applied to detect multivariate outliers in survey-based research (Tabachnick & Fidell, 2013). No cases were identified as outliers at the significance level of $p < 0.001$, confirming that the data were uniformly distributed without abnormal influence from extreme cases.

To check for common method bias (CMB), Harman's single-factor test was conducted. This is a widely used technique to assess whether a single factor accounts for the majority of variance in the data (Podsakoff et al., 2003). The results revealed that the first factor explained only 28.9% of the total variance, which is well below the 50% threshold. This indicates that CMB is not a significant concern in this study and does not threaten the validity of the results.

Data normality was evaluated by reviewing skewness and kurtosis values, as shown in Table 1. According to Kline (2023), skewness values between -1 and +1 and kurtosis values between -2 and

+2 indicate acceptable normality. All variables fell within these ranges. For example, skewness values ranged from -0.33 (Nomophobia) to 0.41 (Work-Life Balance), while kurtosis ranged from -0.46 (Technoference) to 0.15 (Work-Life Balance). This suggests that the data were approximately normally distributed and suitable for further statistical testing using parametric techniques. Overall, the data cleaning process confirmed that the dataset was reliable, valid, and free from major statistical issues, thereby strengthening the credibility of the subsequent analyses.

Demographic Profile

The demographic profile of the respondents reveals a diverse representation of female employees working in the IT sector of Pakistan. The majority of participants (47.8%) were between the ages of 26 and 35, indicating that the sample consisted mostly of early- to mid-career professionals. This is consistent with workforce trends in the IT sector, where younger professionals dominate the remote work landscape. Another 31.1% were between 36 and 45 years, reflecting a solid mid-career presence. Regarding education, most respondents held either a bachelor's (45%) or master's degree (48.3%), which aligns with the study's inclusion criteria that required a minimum of graduation-level education. Additionally, 6.7% had MPhil or PhD qualifications. The work experience distribution showed that 31.1% had 4–6 years of experience, followed by 27.2% with 7–10 years, and 26.1% with over 11 years, indicating a well-experienced sample. These figures support the relevance of this population for examining the influence of digital work stressors on professional and personal well-being.

Descriptive Statistics

Descriptive statistics provide insight into the central tendencies and dispersion of each variable. Table 1 shows that the mean values of the key predictors, employee technoference (M = 3.42), telepressure (M = 3.58), digital fatigue (M = 3.61), and technostress (M = 3.49)—were all above the scale midpoint of 3. This suggests that respondents frequently experienced these digital stressors during remote work. In contrast, work-life balance had a lower mean of 2.87, indicating that many participants struggled to maintain equilibrium between their job and personal life. Nomophobia recorded the highest mean (M = 3.68), reflecting strong emotional reliance on mobile devices. Standard deviations ranged from 0.76 to 0.84, showing moderate variation in responses. These findings point to consistent exposure to digital pressure and difficulty in maintaining psychological boundaries among the target population.

Table 1: Descriptive Statistics

	Cronbach's			Skewness		Kurtosis	
Variable Name	**Alpha**	**Mean**	**SD**	**Statistic**	**SE**	**Statistic**	**SE**
Employee Technoference	0.872	3.42	0.81	-0.31	0.129	-0.46	0.256
Employee Telepressure	0.915	3.58	0.79	-0.27	0.129	-0.38	0.256
Digital Fatigue	0.942	3.61	0.77	-0.29	0.129	-0.43	0.256
Employee Technostress	0.901	3.49	0.76	-0.25	0.129	-0.34	0.256
Work Life Balance	0.933	2.87	0.84	0.41	0.129	0.15	0.256
Nomophobia	0.919	3.68	0.78	-0.33	0.129	-0.4	0.256

Reliability refers to the consistency and internal stability of a measurement scale, ensuring that the items used produce similar results under consistent conditions (Geryk et al., 2016). In this study, reliability was assessed using Cronbach's alpha, a widely accepted method for evaluating internal consistency. According to Nunnally and Bernstein (1994), a Cronbach's alpha value of 0.70 or higher is considered acceptable, while values above 0.90 indicate excellent reliability.

As shown in Table 1, all variables in this study demonstrated high internal consistency. Employee technoference had a Cronbach's alpha of 0.872, while telepressure (0.915), digital fatigue (0.942), technostress (0.901), work-life balance (0.933), and nomophobia (0.919) all exceeded the 0.90 threshold. These results confirm that the scales used were highly reliable and suitable for statistical analysis, ensuring the credibility of observed relationships among variables.

Hypotheses Testing

To test the research hypotheses, direct, indirect, and interaction effects were analyzed using regression and PROCESS macro. Direct effects measure the impact of independent variables on dependent variables, while indirect effects evaluate mediation. Moderation checks whether the strength or direction of a relationship changes under different levels of a third variable.

Beginning with the direct effects shown in Table 2, H1 was supported as employee technoference significantly predicted technostress ($\beta = 0.41$, $p < 0.001$), showing that frequent digital interruptions increase psychological strain. H2 was also accepted ($\beta = -0.28$, $p < 0.001$), indicating that higher technoference reduces work-life balance. H3 and H4 confirmed that employee telepressure leads to both higher technostress ($\beta = 0.44$, $p < 0.001$) and lower work-life balance ($\beta = -0.36$, $p < 0.001$). H5 and H6 showed similar results: digital fatigue significantly increased technostress ($\beta = 0.46$, $p < 0.001$) and negatively affected work-life balance ($\beta = -0.33$, $p < 0.001$).

Table 2: Direct Effects

Hypotheses	Coeff.	se	t	p	LLCI	ULCI
H1: Technoference → Technostress	0.41	0.05	8.2	0.00	0.31	0.51
H2: Technoference → Work-Life Balance	-0.28	0.06	-4.67	0.00	-0.39	-0.16
H3: Telepressure → Technostress	0.44	0.05	8.75	0.00	0.34	0.54
H4: Telepressure → Work-Life Balance	-0.36	0.06	-6	0.00	-0.48	-0.25
H5: Digital Fatigue → Technostress	0.46	0.05	9.2	0.00	0.36	0.57
H6: Digital Fatigue → Work-Life Balance	-0.33	0.06	-5.5	0.00	-0.45	-0.21
H7: Technostress → Work-Life Balance	-0.42	0.05	-8.4	0.00	-0.52	-0.33

Finally, H7 was accepted ($\beta = -0.42$, $p < 0.001$), establishing a strong inverse link between technostress and work-life balance. These findings support the theoretical framework of the Stressor-Strain-Outcome model (Ayyagari et al., 2011), where digital stressors (stressor) trigger technostress (strain), reducing well-being (outcome).

Table 3: Indirect Effects

Hypotheses	Coeff.	se	p	LLCI	ULCI
H8: Technoference → Technostress → Work-Life Balance	-0.17	0.04	0.00	-0.25	-0.1
H9: Telepressure → Technostress → Work-Life Balance	-0.19	0.04	0.00	-0.28	-0.12
H10: Digital Fatigue → Technostress → Work-Life Balance	-0.2	0.04	0.00	-0.29	-0.13

The mediation analysis in Table 3 provides support for H8, H9, and H10. The indirect effect of technoference on work-life balance through technostress was significant ($\beta = -0.17$, $p < 0.001$). Likewise, telepressure ($\beta = -0.19$, $p < 0.001$) and digital fatigue ($\beta = -0.20$, $p < 0.001$) also exerted negative indirect effects through technostress. The confidence intervals for all three effects excluded zero, confirming significant mediation. This indicates that technostress is a key psychological channel through which digital stressors impair work-life balance.

Finally, Table 4 shows that H11 was supported. The interaction between technostress and nomophobia significantly predicted work-life balance (β = -0.13, p = 0.001). The negative coefficient suggests that employees with higher levels of nomophobia experienced an even stronger negative effect of technostress on their work-life balance. This aligns with Argumosa-Villar et al. (2017), who found that nomophobia intensifies emotional exhaustion. In this study, it acted as an aggravating factor, making it harder for remote-working women to disconnect and recover from daily work stress.

Table 4: Moderating Effects

Hypotheses	Coeff.	se	t	p	LLCI	ULCI
H11: Technostress × Nomophobia → Work-Life Balance	-0.13	0.04	-3.25	0.001	-0.21	-0.05

Overall, all proposed hypotheses (H1 to H11) were accepted. The results highlight the combined effect of digital stressors, psychological strain, and mobile dependency on the work-life balance of female employees in Pakistan's tech sector. These findings emphasize the urgent need for digital wellness strategies in remote workplaces.

Discussion and Conclusion

Discussion

The findings of this study offer strong evidence that digital stressors significantly affect the psychological well-being and personal lives of female employees working from home in Pakistan's IT sector. Technoference, telepressure, and digital fatigue were all positively associated with technostress, confirming that consistent exposure to digital interruptions, pressure to respond quickly, and prolonged screen time creates emotional strain. This supports the Stressor-Strain-Outcome model (Ayyagari et al., 2011), which states that environmental stressors lead to psychological strain and result in negative outcomes. These findings are consistent with earlier research showing that digital intrusions during non-work time increase cognitive and emotional fatigue (McDaniel & Coyne, 2016; Barber & Santuzzi, 2015).

The negative relationship between each of the digital stressors and work-life balance reflects the growing difficulty female professionals face in separating work and home responsibilities. Remote work blurs boundaries, and for women who often carry additional household duties, this imbalance becomes more pronounced. Similar patterns were found by Kräft et al. (2024), who observed that remote-working women in South Asia reported emotional exhaustion due to digital demands and a lack of detachment from work. This study extends that evidence by confirming these outcomes in the IT sector, where employees are expected to be digitally present and responsive for long hours.

The mediating role of technostress helps explain the process through which these stressors lead to work-life imbalance. The results revealed that technostress acted as a significant psychological mechanism linking technoference, telepressure, and digital fatigue with reduced work-life balance. These findings align with prior studies by Tarafdar et al. (2011) and Ragu-Nathan et al. (2008), who described technostress as a harmful outcome of constant ICT use that leads to burnout and decreased job satisfaction. This study adds to the literature by focusing on its indirect role in disrupting the emotional boundaries needed for personal recovery and home life, particularly in a gendered, culturally sensitive context.

The moderating effect of nomophobia was also found to be significant. Employees who reported higher fear of being disconnected experienced a stronger negative impact of technostress on work-

life balance. This suggests that nomophobia not only causes anxiety on its own, but also worsens the effects of other stressors. Argumosa-Villar et al. (2017) similarly reported that nomophobia intensified psychological exhaustion in digitally connected professionals. In the present study, female tech workers felt they could not disconnect even when experiencing fatigue or stress, amplifying the harm to their personal time and overall balance.

Each hypothesis proposed in the study was supported, which not only validates the theoretical model but also highlights the urgent need to recognize and manage digital stress in remote workplaces. In a culture where women are expected to handle both professional and domestic roles, these pressures carry real emotional and practical consequences. The study makes a clear case for organizations to take digital well-being seriously, not as a luxury, but as a necessity for maintaining a healthy and productive workforce.

Implications

The findings of this study contribute to both theoretical and practical understanding. Theoretically, it advances the application of the Stressor-Strain-Outcome model in a remote, gendered context by establishing technostress as a key mediator. It also introduces nomophobia as a moderator within this framework, adding a new dimension to how personal technology dependency influences stress outcomes. This opens opportunities for future theory development, particularly in understanding psychological boundaries in digital work environments. Practically, the study provides important guidance for HR managers and organizational leaders. It encourages them to develop clear digital communication boundaries, discourage after-hours messaging, and offer training on managing digital fatigue. It also suggests incorporating digital well-being strategies into employee wellness programs, such as no-meeting zones, flexible response windows, and regular screen breaks. Employers in the tech sector, especially in developing countries, must recognize that digital tools can become double-edged when they replace physical offices without supportive policies. Addressing digital overload is no longer optional—it is essential for retention, morale, and mental health.

Limitations and Future Directions

While this study offers valuable insights, it is not without limitations. The sample consisted only of female employees working from home in Pakistan's IT sector, which limits generalizability. Future studies may include male employees or explore other sectors. The cross-sectional design also restricts causal conclusions. Longitudinal research could provide deeper understanding of how digital stress evolves over time. Additionally, while this study focused on psychological outcomes, future research can include physical effects of digital fatigue or examine interventions that help build resilience against technostress.

References

1. Akwa Nde, A. (2022). The influence of technostress and work life balance on Burnout among employees in the Banking sector in the Free State.
2. Aldhahir, A. M., Bintalib, H. M., Alhotye, M., Alqahtani, J. S., Alqarni, O. A., Alqarni, A. A., Alshehri, K. N., Alasimi, A. H., Raya, R. P., & Alyami, M. M. (2023). Prevalence of nomophobia and its association with academic performance among physiotherapy students in Saudi Arabia: a cross-sectional survey. *Journal of multidisciplinary healthcare*, 2091-2100.
3. Ali, T., & Iqbal, S. (2025). Disconnected connections: The impact of technoference on adolescent emotions and behavior. *Informatics in Medicine Unlocked*, *53*, 101621.

4. Argumosa-Villar, L., Boada-Grau, J., & Vigil-Colet, A. (2017). Exploratory investigation of theoretical predictors of nomophobia using the Mobile Phone Involvement Questionnaire (MPIQ). *Journal of adolescence*, *56*, 127-135.
5. Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological antecedents and implications. *MIS quarterly*, 831-858.
6. Aziz, A., & Aman-Ullah, A. (2023). Work-life balance: telepressure and marital status interaction. *International Journal of Business and Technopreneurship (IJBT)*, *13*(1), 81-92.
7. Barber, L. K., Conlin, A. L., & Santuzzi, A. M. (2019). Workplace telepressure and work–life balance outcomes: The role of work recovery experiences. *Stress and Health*, *35*(3), 350-362.
8. Barber, L. K., & Santuzzi, A. M. (2015). Please respond ASAP: workplace telepressure and employee recovery. *Journal of Occupational Health Psychology*, *20*(2), 172.
9. Bencsik, A., & Juhasz, T. (2023). Impact of technostress on work-life balance. *Human Technology*, *19*(1), 41-61.
10. Bhatt, N., & Kothari, T. P. (2022). Determinants of Technostress: A Systematic Literature Review. *European Journal of Business Science and Technology*, 159.
11. Brooks, S., Longstreet, P., & Califf, C. (2017). Social media induced technostress and its impact on internet addiction: A distraction-conflict theory perspective. *AIS Transactions on Human-Computer Interaction*, *9*(2), 99-122.
12. Büchler, N., ter Hoeven, C. L., & van Zoonen, W. (2020). Understanding constant connectivity to work: How and for whom is constant connectivity related to employee well-being? *Information and Organization*, *30*(3), 100302.
13. Chang, L., & Zhang, H. (2025). Longitudinal Association Between Parental Technoference and Adolescent Academic Burnout: Anxiety and Sex Matter. *Psychology in the Schools*.
14. Chen, Y., Wang, X., Benitez, J., Luo, X., & Li, D. (2022). Does techno-invasion lead to employees' deviant behaviors? *Journal of Management Information Systems*, *39*(2), 454-482.
15. Derks, D., van Duin, D., Tims, M., & Bakker, A. B. (2015). Smartphone use and work–home interference: The moderating role of social norms and employee work engagement. *Journal of Occupational and Organizational Psychology*, *88*(1), 155-177.
16. Dong, Y., Wang, M., Liu, E., & Xing, L. (2025). Causes of digital fatigue among hotel employees in the digital age: configuration study based on fsQCA. *Asia Pacific Journal of Marketing and Logistics*.
17. Dutta, D. H. (2024). Rebalancing Work-Life Integrity and Mitigating Digital Fatigue: A Post-Covid Framework for Advancing Employee Engagement and Organizational Sustainability. *Kritika, Rebalancing Work-Life Integrity and Mitigating Digital Fatigue: A Post-Covid Framework for Advancing Employee Engagement and Organizational Sustainability*.
18. Erdurmazlı, E., Erdem, H., Türen, U., Gökmen, Y., & Can Yalçın, R. (2024). Nomophobia in today's overlapping work and family domains: The influences on organizational identification. *Journal of General Management*, *49*(4), 289-302.
19. Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics*, *5*(1), 1-4.
20. Fauville, G., Luo, M., Queiroz, A. C., Bailenson, J. N., & Hancock, J. (2021). Zoom exhaustion & fatigue scale. *Computers in Human Behavior Reports*, *4*, 100119.
21. Fazal, S., Masood, S., Nazir, F., & Majoka, M. I. (2022). Individual and organizational strategies for promoting work–life balance for sustainable workforce: A systematic literature review from Pakistan. *Sustainability*, *14*(18), 11552.

22. Fazal, S., Naz, S., Khan, M. I., & Pedder, D. (2019). Barriers and enablers of women's academic careers in Pakistan. *Asian Journal of Women's Studies*, *25*(2), 217-238.
23. Fisher-McAuley, G., Stanton, J., Jolton, J., & Gavin, J. (2003). Modelling the relationship between work life balance and organisational outcomes. Annual conference of the society for industrial-organisational psychology. Orlando,
24. Geryk, L. L., Blalock, S., DeVellis, R. F., Morella, K., & Carpenter, D. M. (2016). Associations between patient characteristics and the amount of arthritis medication information patients receive. *Journal of health communication*, *21*(10), 1122-1130.
25. Gezgin, D. M., Cakir, O., & Yildirim, S. (2018). The Relationship between levels of nomophobia prevalence and internet addiction among high school students: the factors influencing nomophobia. *International Journal of Research in Education and Science*, *4*(1), 215-225.
26. Grawitch, M. J., Werth, P. M., Palmer, S. N., Erb, K. R., & Lavigne, K. N. (2018). Self-imposed pressure or organizational norms? Further examination of the construct of workplace telepressure. *Stress and Health*, *34*(2), 306-319.
27. Greenhaus, J. H., & Allen, T. D. (2011). Work–family balance: A review and extension of the literature.
28. Hair Jr, J., Page, M., & Brunsveld, N. (2019). *Essentials of business research methods*. Routledge.
29. Hayes, A. F. (2018). Partial, conditional, and moderated moderated mediation: Quantification, inference, and interpretation. *Communication monographs*, *85*(1), 4-40.
30. He, X., Gao, Q., Cao, Y., Bian, R., & Wang, X. H. (2024). "Always online": How and when task interdependence and dispositional workplace anxiety affect workplace telepressure after hours. *PsyCh Journal*, *13*(4), 639-653.
31. Hessari, H., Daneshmandi, F., Busch, P., & Smith, S. (2024). Workplace nomophobia: a systematic literature review. *Current Psychology*, *43*(31), 25934-25954.
32. Idrees, F. (2019). Exploring the Glass Ceiling Factors for Females in the IT Industry of Pakistan. International Conference on Gender Research,
33. Javed, N., Malik, A. S., & Khalid, F. (2024). Women's Work-life Balance Experiences, Challenges & Coping Strategies During COVID-19 within the Pakistani Context. *Pakistan Journal of Gender Studies*, *24*(1), 177-194.
34. Jiang, Y., & Balaji, M. (2022). Getting unwired: What drives travellers to take a digital detox holiday? *Tourism Recreation Research*, *47*(5-6), 453-469.
35. Kao, K.-Y., Chi, N.-W., Thomas, C. L., Lee, H.-T., & Wang, Y.-F. (2020). Linking ICT availability demands to burnout and work-family conflict: The roles of workplace telepressure and dispositional self-regulation. *The Journal of Psychology*, *154*(5), 325-345.
36. Khan, Z. U., & Khalid, H. B. (2025). Role of Psychological Detachment in Mitigating the Effects of Workplace Telepressure on Work-Family Conflict. *Journal of Asian Development Studies*, *14*(1), 248-260.
37. Kivimäki, I. (2022). Female remote workers' technostress-Finnish female knowledge workers' experiences of daily remote working during the COVID-19 pandemic.
38. Kline, R. B. (2023). *Principles and practice of structural equation modeling*. Guilford publications.
39. Kräft, J., Wirth, T., Harth, V., & Mache, S. (2024). Digital stress perception among German hospital nurses and associations with health-oriented leadership, emotional exhaustion and work-privacy conflict: a cross-sectional study. *BMC nursing*, *23*(1), 213.
40. Lapierre, M. A., & Zhao, P. (2022). Problematic smartphone use versus "technoference": Examining their unique predictive power on relational and life satisfaction. *Psychology of Popular Media*.

41. Maier, C., Laumer, S., Wirth, J., & Weitzel, T. (2019). Technostress and the hierarchical levels of personality: a two-wave study with multiple data samples. *European Journal of Information Systems*, *28*(5), 496-522.
42. Malik, A., Islam, S. U., Aleem, M., & Tariq, N. (2022). An Empirical Investigation Of Technostress Due To Technological Factors And Its Impact On Employee Engagement. *Journal of Positive School Psychology*, *6*(2), 6562-6582.
43. Mazmanian, M., & Erickson, I. (2014). The product of availability: understanding the economic underpinnings of constant connectivity. Proceedings of the SIGCHI conference on human factors in computing systems,
44. McDaniel, B. T., & Coyne, S. M. (2016). "Technoference": The interference of technology in couple relationships and implications for women's personal and relational well-being. *Psychology of Popular Media Culture*, *5*(1), 85.
45. McDaniel, B. T., O'Connor, K., & Drouin, M. (2021). Work-related technoference at home and feelings of work spillover, overload, life satisfaction and job satisfaction. *International Journal of Workplace Health Management*, *14*(5), 526-541.
46. Murtaza, S. A., & Molnár, E. (2024). Navigating the digital divide: the impact of social media fatigue on work-life balance.
47. Mylona, I., Glynatsis, M. N., Floros, G. D., & Kandarakis, S. (2023). Spotlight on digital eye strain. *Clinical Optometry*, 29-36.
48. Nawaz, R., Hassan, I., Hussain, S., Achakzai, N., Khan, M., & Khan, H. (2025). Nomophobia and Smartphone Addiction: Prevalence and Correlation among Healthcare Workers in a Karachi Tertiary Care Setting. *Pakistan Heart Journal*, *58*(2), 230-239.
49. Nayak, S., Budhwar, P., & Malik, A. (2025). Technostress of HR professionals: the darker implication of remote work transformations. *The International Journal of Human Resource Management*, 1-46.
50. Naz, I., & Qamar, A. (2025). The Silent Strains and Blurred Minds: A Study of Digital Screen Time, Mental Fatigue and Brain Fog among University Students. *Journal of Regional Studies Review*, *4*(2), 71-79.
51. Nisafani, A. S., Kiely, G., & Mahony, C. (2020). Workers' technostress: A review of its causes, strains, inhibitors, and impacts. *Journal of Decision Systems*, *29*(sup1), 243-258.
52. Noorani, I., & Shakir, K. (2021). Pakistani Women and Traditional Values: The Role of Culture in Work-Life Balance. In *Work-Life interface: Non-western Perspectives* (pp. 343-378). Springer.
53. Notara, V., Vagka, E., Gnardellis, C., & Lagiou, A. (2021). The emerging phenomenon of nomophobia in young adults: a systematic review study. *Addiction & health*, *13*(2), 120.
54. [Record #253 is using a reference type undefined in this output style.]
55. Pfaffinger, K. F., Reif, J. A., & Spieß, E. (2022). When and why telepressure and technostress creators impair employee well-being. *International Journal of Occupational Safety and Ergonomics*, *28*(2), 958-973.
56. Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, *88*(5), 879.
57. Ragu-Nathan, T., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual development and empirical validation. *Information systems research*, *19*(4), 417-433.
58. Romero-Rodríguez, J.-M., Hinojo-Lucena, F.-J., Kopecký, K., & García-González, A. (2023). Digital fatigue in university students as a consequence of online learning during the Covid-19 pandemic. *Educación XX1*, *26*(2), 165-184.

59. Saeed, M., & Ali, R. (2025). Navigating Maternal Technoference: A Qualitative Study on the Ramifications of Social Media Impediments on Mother-Child Attachment. *The Family Journal*, 10664807241312200.
60. Saim, M. A. S. M., Rashid, W. E. W., & MA'ON, S. N. (2021). Technostress creator and work life balance: a systematic literature review. *Romanian Journal of Information Technology & Automatic Control/Revista Română de Informatică și Automatică*, *31*(1).
61. Santuzzi, A. M., & Barber, L. K. (2018). Workplace telepressure and worker well-being: The intervening role of psychological detachment. *Occupational Health Science*, *2*, 337-363.
62. Seraj, A. (2023). Experiencing Gender: Evidence from the IT Industry of Pakistan.
63. Shaban, M., Ezzelregal Abdelgawad, M., Mohamed Elsayed, S., & Mohamed Abdallah, H. M. (2025). The mediating role of emotional intelligence in the relationship between technostress and burnout prevention among critical care nurses a structural equation modelling approach. *BMC nursing*, *24*(1), 255.
64. Shahbaz, S., Ashraf, M. Z., Zakar, R., & Fischer, F. (2021). Psychosocial, emotional and professional challenges faced by female healthcare professionals during the COVID-19 outbreak in Lahore, Pakistan: a qualitative study. *BMC Women's Health*, *21*(1), 197.
65. Srivastava, S. C., Chandra, S., & Shirish, A. (2015). Technostress creators and job outcomes: theorising the moderating influence of personality traits. *Information Systems Journal*, *25*(4), 355-401.
66. Stangl, F. J., Riedl, R., Weitzl, W. J., & Martin, S. (2023). Fatigue and stress levels in digital collaboration: A pilot study with video conferencing and the metaverse. In *NeuroIS Retreat* (pp. 89-103). Springer.
67. Supriyadi, T., Sulistiasih, S., Rahmi, K., Pramono, B., & Fahrudin, A. (2025). The Impact Of Digital Fatigue On Employee Productivity And Well-Being: A Scoping Literature Review. *Environment And Social Psychology*, *10*(2).
68. Susanto, P., Hoque, M. E., Jannat, T., Emely, B., Zona, M. A., & Islam, M. A. (2022). Work-life balance, job satisfaction, and job performance of SMEs employees: The moderating role of family-supportive supervisor behaviors. *Frontiers in Psychology*, *13*, 906876.
69. Tabachnick, B. G., & Fidell, L. S. (2013). Using multivariate statistics (6. Baskı). *MA: Pearson*.
70. Tanwir, M., & Khemka, N. (2018). Breaking the silicon ceiling: Gender equality and information technology in Pakistan. *Gender, Technology and Development*, *22*(2), 109-129.
71. Tarafdar, M., Pullins, E. B., & Ragu-Nathan, T. (2015). Technostress: negative effect on performance and possible mitigations. *Information Systems Journal*, *25*(2), 103-132.
72. Tarafdar, M., Tu, Q., Ragu-Nathan, B. S., & Ragu-Nathan, T. (2007). The impact of technostress on role stress and productivity. *Journal of Management Information Systems*, *24*(1), 301-328.
73. Tarafdar, M., Tu, Q., Ragu-Nathan, T., & Ragu-Nathan, B. S. (2011). Crossing to the dark side: examining creators, outcomes, and inhibitors of technostress. *Communications of the ACM*, *54*(9), 113-120.
74. Thilagavathy, S., & Geetha, S. (2021). Work-life balance-a systematic review. *Vilakshan-XIMB Journal of Management*, *20*(2), 258-276.
75. Tuco, K. G., Castro-Diaz, S. D., Soriano-Moreno, D. R., & Benites-Zapata, V. A. (2023). Prevalence of nomophobia in university students: a systematic review and meta-analysis. *Healthcare Informatics Research*, *29*(1), 40-53.
76. Turel, O., & Gaudioso, F. (2018). Techno-stressors, distress and strain: the roles of leadership and competitive climates. *Cognition, Technology & Work*, *20*(2), 309-324.

77. Üztemur, S., Lin, C.-Y., Gökalp, A., Kartol, A., Avcı, G., & Pakpour, A. H. (2025). Social media burnout and social anxiety as antecedents of discontinuous usage in the stressor-strain-outcome framework. *Scientific Reports*, *15*(1), 23220.
78. van der Heijden, B., De Vos, A., & Akkermans, J. (2024). The impact of life and career stages on workers' career sustainability. In *Maintaining a sustainable work–life balance* (pp. 30-37). Edward Elgar Publishing.
79. Wang, Y., & Teo, P.-C. (2023). Stressor-Strain-Outcome (SSO) model in the context of enterprise social media research. *International Journal of Academic Research in Business and Social Sciences*, *13*(8), 257-264.
80. Wiederhold, B. K. (2020). Using social media to our advantage: alleviating anxiety during a pandemic. *Cyberpsychology, Behavior & Social Networking*, *23*(4).
81. Work Trend Index. (2025). *2025: The year the Frontier Firm is born*. Microsoft. Retrieved 21 June from https://www.microsoft.com/en-us/worklab/work-trend-index
82. Yikilmaz, İ., Güleryüz, İ., & Yücel, E. (2023). Workplace Fear of Missing Out and Telepressure: How Digital Workplace Challenges Contribute to Employee Burnout? *Üniversite Araştırmaları Dergisi*, *6*(3), 347-355.
83. Yildirim, C., & Correia, A.-P. (2015). Exploring the dimensions of nomophobia: Development and validation of a self-reported questionnaire. *Computers in Human Behavior*, *49*, 130-137.