

Technostress Creators and Employee's Well-Being at a Telecommunication Company in Sarawak, Malaysia

Viannie Claire Jimmy, Suhaila Mohamed*, Norashikin Hussein, Nur Aizureen Anwar, Noor Azura Dahalan
Universiti Teknologi MARA Kampus Puncak Alam, Selangor, Malaysia
*suhaila423@uitm.edu.my

Abstract: There are many benefits of technology in the workplace, such as an increase in productivity and knowledge acquisition. However, technological advancement in the workplace may cause technostress. The term technostress refers to the negative psychological relationship between people and adopting new technologies. Technostress occurs when people cannot adequately adapt to or interact with information technologies. The purpose of this study is to determine the relationship between five technostress creators, namely, techno-overload, techno-invasions, techno-complexity, techno-insecurity, and techno-uncertainty towards employee well-being at one Telecommunication Company in Sarawak, Malaysia. The respondents of this cross-sectional quantitative study were 141 individual employees. Data were collected using convenience sampling by utilizing a Google form that was distributed to all populations under the study. The findings of this research indicate a strong relationship between all technostress creators and the well-being of employees. Thus, this research adds to the knowledge of the relationships between technostress creators and employees' well-being in the workplace. Since the research found that the most prevailing independent variable in this research study is techno-invasion, thus, this research recommended that the company provide guidelines on ICTs use outside of work and take action to limit such work-related interruptions.

Keywords: *Technostress creators, Techno-overload, Techno-invasion, Techno-complexity, Techno-insecurity, Techno-uncertainty, Employee's Well-Being.*

1. Introduction and Background

Technostress is a state of psychophysiological activation, negative feelings such as irritability, anxiousness, and fatigue, and cognitive symptoms such as poor concentration, mental fatigue, and memory impairment due to technology usage (Ragu-Nathan et al., 2008). Technostress is a growing concern because of the widespread use of information and communication technologies (ICTs) in the workplace and everyday life (La Torre et al., 2020). Especially in the workplace, technological advancement in ICTs brings about challenges in adjusting worker to their working environment and the technological resources that they use (Marchiori et al., 2018). Previous researchers (Nijp et al., 2016) highlight that these advancements have led to a new method of organizing more adaptable work, namely the establishment of time and location-independent work settings that require creativity and efficiency while also attaining cost savings. Subsequently, the new method of organizing work would lead to a phenomenon called technostress.

According to Islam et al. (2022), among the causes of technostress include a lack of technical support, a lack of professional personnel, insufficient equipment, insufficient involvement in decision-making, a slow network, technological failure, increasing user demand, and information overload as well as inadequate formal training. Ragu-Nathan et al. (2008) describe three features of technostress-inducing technology and workspaces, including advanced ICTs in the workplace, the knowledge gap between workers and an evolved IS as well as changes in the workplace and culture due to technology adoption.

Many studies have found a correlation between technostress and job satisfaction or job performance (Jena, 2015). Previous research on technostress conducted by Lei & Ngai (2014) demonstrates a negative correlation between technostress and the satisfaction and performance of employees. According to Tarafdar et al. (2007), there is a negative relationship between technostress and employee productivity. Moreover, Tarafdar et al. (2011) mentioned that technostress dramatically diminishes job satisfaction, commitment, innovation, and productivity. However, according to Rasool et al. (2022), there is limited research on the relationship between technostress creators and the well-being of employees.

There is no doubt that there are many benefits of adopting and utilizing ICTs in the workplace, such as an increase in productivity and knowledge acquisition, it is also true that adopting and utilizing ICTs in the

workplace have developed challenges that lead to technostress and burnout (Jena, 2015). Alam (2016) stated that regardless of the job description, every workplace involves some form of emerging technology that will bring about work-related technostress. In fact, technostress has significant repercussions for people as well as organizations, including a decline in productivity and discontent in the workplace (Tarafdar et al., 2007). It causes information overload, mental stress, and anxiety (Alam, 2016). Zainun et al. (2019) added that technostress is the strain that is typically felt by those who have negative thoughts, attitudes, behavior, and psychology against rapidly changing and sophisticated technological advancements and lack the ability to cope with that change. Employees may experience anxiety due to technostress, which includes signs including irritation, headaches, nightmares, insomnia, technology rejection, and technological resistance (Ragu-Nathan et al., 2008). Previous researchers (Allen et al., 2015) mention that due to extended working hours, unclear distinction between work and home, and inadequate assistance from organizations, the mental and physical health of a person may be adversely impacted when there is a blurring of the physical and organizational boundaries between work and home.

Since technostress does influence employee's well-being (Ragu-Nathan et al., 2008) but little is known about the relationship between technostress creators and the well-being of employees (Rasool et al., 2022), thus, the objective of this research study is to determine the relationship of five technostress stressors, namely, techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty with employees' well-being.

2. Literature Review

Employee well-being is defined by the World Health Organization (2013) as the capacity of every employee to achieve his or her own potential, deal with the usual pressures of life, work successfully, and make a positive contribution to his or her community. Well-being can be described as the state of feeling good, healthy, and joyful, connected to all parts of life, with a particular emphasis on job activity and occupational functioning (Juchnowicz & Kinowska, 2021).

The idea of well-being has gained considerable attention in occupational research, especially concerning workers' overall experience and performance at work (Islam & Amin, 2022). It conceived affective well-being, which includes the two possible sources of employee well-being: firstly, an individual's general life (life satisfaction, quality of life, anxiety, and depression) constitutes overall well-being (without regard to job-related factors); and secondly, workers' emotional states that are the outcome of their work environment and work duties (Warr, 1994).

According to D'Arcy et al. (2014), employee well-being faces rising obstacles in the increasingly digital workplace. The usage of ICTs and digital workplaces have expanded inevitably as a result of social isolation norms due to health concerns, and also a key role in the modern and digitalized workplace (De' et al., 2020). ICTs are necessary for everyday tasks; nonetheless, they have an impact on the physical and mental health of employees (Houli & Radford, 2020). According to (Guest, 2017), work-related well-being may be negatively affected by changes in the workplace and the surrounding environment, which might have serious implications for both employees and the organization. Utilizing new technology might endanger the well-being of employees and generate psychological problems, such as poor communication and challenges in the development of emotive and cognitive processes within teams (Larson & Dechurch, 2020).

Employees suffer more technologically induced stress at work known as Technostress (D'Arcy et al., 2014), for instance, excessive reliance on technology, greater work volume, expectations for higher efficiency, and the ongoing need to adapt to new apps, functions, and processes (Srivastava et al., 2015; Tarafdar et al., 2010). A lot of employees are migrating to digital work patterns and adopting new digital technology during the COVID-19 era, producing higher technostress than in the past (Chakraborty & Kar, 2021). Therefore, technostress is a major issue in today's workplaces for both employees and management (Wang et al., 2022). According to previous researchers (Lin et al., 2020), employee well-being is related to employees' overall affective experience as well as their functioning in the workplace. Employee well-being can be affected by a wide variety of factors, some of which are on an individual level (such as personal traits, states, and behaviors) (Parker et al., 2020), others on a group level (such as team climate and activities) (Guillaume et al.,

2015), and still others on an organizational level (such as leadership and HR practice) (Parker et al., 2020; Salas-Vallina et al., 2021).

Technostress and its Creators: Technostress is defined as a state of psychophysiological activation, negative feelings such as irritability, anxiousness, and fatigue, and cognitive symptoms such as poor concentration, mental fatigue, and memory impairment (Ragu-Nathan et al., 2008), as well as behavioral strain and sleep problems (Ayyagari et al., 2011). Technostress is a contemporary illness of adaptation resulting from an inability to adjust to new computing technology in a healthy way (Suh & Lee, 2017). Technostress is a sort of anxiety caused by inadequacy in meeting the expectations of corporate computer usage (Tarafdar et al., 2010).

Technostress, according to Brod (1984), is an illness of adaptation in the contemporary period that is caused by the incapacity to adjust to new technology in a constructive and healthy way. According to Molino et al. (2020), ICTs have grown at a remarkable rate over the last several decades, influencing work across all industries and bringing many benefits, such as data processing speed, portability, and data dependability. Previous researchers (Adel-Mehraban et al., 2019) claimed that technostress is one of the contemporary disorders that is mostly caused by an inability to adapt to new technology, which is a mix of anxiety, information overload, role conflict, and organizational issues. This disease may result in a lack of acceptance of information and communication technologies or an excessive identification with the new technology, which can induce anxiety and tension (Brivio et al., 2018).

Thus, researcher has identified that there are five technostress creators, namely, techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty (Tarafdar et al., 2007), who note that techno-overload; techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty compose the categorization of the causes of technostress. Tarafdar et al. (2007) stated that techno-overload can be caused by the ability of ICT to force end users to work faster and longer and to change their behavior. Techno-invasion, on the other hand, is caused by the ability of technologies to invade employees' private lives and make the line between work and private life less clear. Techno-complexity may be characterized as situations in which the qualities and complexity of an information and communications technology (ICT) system cause workers or end users to feel inadequate and insufficient with their existing skills and knowledge (Tarafdar et al., 2007). Techno-uncertainty can be associated with the feeling of being threatened or the fear of losing their jobs due to the increasing use of automation or other employees with better knowledge and skills in the ICT fields, and it can also be associated with the frequent updates and modifications to ICTs that annoy users and force them to learn new aspects of ICTs (Tarafdar et al., 2007). Previous researchers (Ninaus et al., 2015) said that the four stressors that are most often mentioned are constant availability, connectivity pressure, internal responsibility for availability, and extra work. On the other hand, the benefits of using technology include better communication, instant access, and more flexibility. Brown et al. (2014) said that there are two possible creators in the workplace that focus on email stressors: the high number and poor quality of emails in the workplace system. Those who got a lot of low-quality (i.e., confusing) emails and a lot of them reported being overloaded with emails (Brown et al., 2014). The following section will explain the five technostress creators, namely, techno-overload, techno-invasion, techno-complexity, techno-insecurity and techno-uncertainty.

Techno-Overload and Employee Well-Being: Techno-overload is a stressful situation where employees must work longer and faster than usual due to technology (Wang et al., 2022). This is because the usage of ICTs has compelled employees to operate at high rates of speed and for lengthy durations (Tarafdar et al., 2007). Technostress carries the possibility that, over time, an individual may get work overloaded and stressed which could be harmful to his health (Salazar-Concha et al., 2021). Users may encounter various techno-stressors due to a lack of familiarity with the latest technology, the sensation of being under a lot of pressure due to the quantity of information available, as well as uncomfortable strain and outcomes (Tarafdar et al., 2015).

According to Ingusci et al. (2021), two creators are correlated with the use of ICT in the workplace. The first stressor is information overload, which occurs when a worker receives a large amount of information from several sources, which might produce undue pressure. The second concern is the individuals' constant

availability to be connected to their work via ICTs such as mobile phones or personal computers. Both of these stressors can produce undue pressure (Ingusci et al., 2021). In other words, the term techno-overload refers to the feeling that people have when they are pushed to put in more effort within a shorter amount of time as a direct result of the development of new technologies (Abd Aziz et al., 2021). Working extra is related to having to multitask to digest too much information insufficiently in a swift manner and thus people tend to use technology equipment to do the task more efficiently (Abd Aziz et al., 2021). The phrase techno-overload refers to a situation in which the user is required to perform more tasks as a result of the usage of ICTs, resulting in additional time and effort (Harris et al., 2022).

When employees devote time and energy to learning and managing new technology at work, they may become too exhausted and burdened to fully engage in home life and meet family expectations (Harris et al., 2022). Given the wide range of ICTs, it is reasonable to believe that a lack of productivity and job satisfaction among employees is due in part to a problem with mobile technology overload (Yin et al., 2018). Ramesh et al. (2021) highlight that the time, role, and job security pressures generated by techno stressors serve as low-intensity psychological pressures, which are encountered over the course of one's working life, contribute to exhaustion and burnout. Therefore, the researchers proposed the following hypothesis:

H₁: *There is a significant relationship between techno-overload and employees' well-being.*

Techno-Invasion and Employee Well-Being: Techno-invasion occurs when information and communication technologies (ICTs) have an intrusive effect by creating conditions in which users can be contacted at any time, employees feel compelled to remain connected, and the lines between work and personal life become increasingly blurred (Tarafdar et al., 2007). According to Wu et al. (2017), the widespread use of technology among workers indicates that they will devote a considerable portion of their free time and energy to understanding and using IT outside of work hours because of the technological invasion. This not only depletes their present conditions and energy resources, but also makes it difficult for them to acquire new individual resources such as object resources, conditions, and energies, which causes job anxiety (Wu et al., 2017).

Ragu-Nathan et al (2008) mention that, due to the rising use of information technology, an increasing number of workers are reporting higher levels of stress related to their jobs as well as an invasion of their personal lives, which is referred to as Techno-invasion (one of the five techno-stressors). This can be problematic because technology makes it easier for work to intrude on one's personal life (Murray & Rostis, 2007), making it difficult to fulfill one's family obligations (Major et al., 2002; Boswell & Olson-Buchanan, 2007) and limiting individuals' recovery, family, and leisure time (Sonnetag, 2001). Working from home creates special issues for remote employees since their house gets identified with their job position, work physically and psychologically intrudes onto their family, and habits and customs evolve that drive them to be obsessed with work when at home (Eddleston & Mulki, 2017). Virtual work involves physical and cognitive changes in how people perform their job duties and tasks, and these changes may have an impact on people's exhaustion and job engagement (Sardeshmukh et al., 2012).

The merging of work and family life at home can be a source of stress for people who do their jobs remotely since it can lead to uncertainty on which responsibility, work or family, should be prioritized when at home (Eddleston & Mulki, 2017). People who have problems balancing their professional and personal lives are more likely to become exhausted as a result of the stress caused by the competition that exists between their professional and personal lives resulting in the depletion of both the individuals' emotional and physical resources (Golden, 2012). Eddleston & Mulki (2017) mention that additionally, it is essential to consider how the (mis)alignment of a remote worker's boundary preferences and the work-family boundary environment produced at home impacts work-family conflict and stress. Studies have shown that employees may find it difficult to "disconnect" from their jobs since technology has blurred the barrier between where they work and where they live (Harris et al., 2022). Therefore, the researchers proposed the following hypothesis:

H₂: *There is a significant relationship between techno-invasion and employees' well-being.*

Techno-Complexity and Employee Well-Being: Techno-complexity is a situation in which the complexity of technology forces users to feel inadequate in terms of their computer skills and forces them to spend time and effort learning and comprehending the technologies (Adel-Mehraban et al., 2019). In other words, techno-

complexity makes users feel like they are incapable of using the technology properly. Users who believe certain technological levels to be complex automatically feel incompetent (Nasirpouri & Biro, 2022) and compelled to invest time and energy into learning and mastering the technology (Tarafdar et al., 2007).

Prior research found that techno-complexity is associated with an inability to understand or deal with the complexity of new technology, which supports the hypothesis that technostress has a negative impact on role stress and productivity (Tarafdar et al., 2007). During the COVID-19 period, employees are required to work with complicated software and hardware; as a result, regular instances of technological complexity occur in the workplace (Zhao, 2021). According to (Burke, 2009), there is a substantial gap between the skills that instructors already possess and those that are necessary for various activities, causing a medium degree of technological stress among employees. Marchiori et al. (2018) highlight that due to the complication of the technological world, elder workers face greater challenges. Thus, the researchers proposed the following hypothesis:

H₃: There is a significant relationship between techno-complexity and employees' well-being.

Techno-Insecurity and Employee Well-Being: Techno-insecurity is a situation in which users fear losing their work due to the automation of ICTs or other persons with an in-depth understanding of ICTs (Ragu-Nathan et al., 2008). It is also referred to the fear that automated technology or more knowledgeable staff might replace a person who has less technological knowledge (Sarabadani et al., 2020). Ahmad et al. (2012) define techno-insecurity as a situation whereby the users feel anxious and nervous about the existence of new ICTs or they feel insecure with other people who are better at ICTs since the new ICTs would replace them or their employment.

Those who suffer from techno-insecurity often have low hopes for their career development and are less eager to study new technology to improve their skills (Sarabadani et al., 2020). According to Adel-Mehraban et al. (2019), they believed that techno-insecurity was associated with the fear of losing their job positions, either due to technological automation or to those who have vast experience and knowledge regarding new technological changes or updates. Employees might, for instance, need to acquire and use new abilities especially in terms of technological advancement since most of the employees may believe that new technological advancements or co-workers with more advanced technological abilities constitute a threat to their careers if they don't update their ICT knowledge and skills (Chiu et al., 2023). This sense of job uncertainty is a significant source of workplace stress that has detrimental effects on both organizational and personal health (Chirumbolo et al., 2017). Dragano & Lunau (2020) highlight that techno-insecurity refers to the fear among employees of having their position be potentially replaced by digital technologies completely or by more skilled employees, resulting in job loss or a decline in status. Thus, the researchers proposed the following hypothesis:

H₄: There is a significant relationship between techno-insecurity and employees' well-being.

Techno-Uncertainty and Employee Well-Being: Techno-uncertainty refers to scenarios when users are confused by ongoing modifications and upgrades of the ICTs and therefore need to learn and educate themselves about these technologies on an ongoing basis (Ragu-Nathan et al., 2008). It is characterized by the rapid obsolescence of ICTs (Kot, 2022). Kot (2022) added that frequent technological changes not only require the introduction of an increasing number of new devices, software applications, and applications, but more importantly, it forces frequent modifications to the typical work patterns, which makes it difficult for employees to gain experience with a particular system or application. Users may be unwilling to learn and utilize new IT due to techno-uncertainty caused by the rapid change and introduction of new IT (Siitonen et al., 2022).

Ahmad et al. (2012) mention that technology and ICT applications are rapidly changing and need to be upgraded, which can cause some ICT users to be hesitant and troubled, resulting in techno-uncertainty. When people are not given enough time to gain solid expertise in technology at work, they develop techno-uncertainty (Sarabadani et al., 2020). Organizations use or develop new technologies to better their work operations, such as making ongoing modifications or amendments to their enterprise systems (Sarabadani et al., 2020). Dragano & Lunau (2020) highlight that techno-uncertainty is a constant sense of ambiguity and uncertainty brought on by extensive digital transformation processes or by characteristics of specific

technologies that encourage constant change. Therefore, the researchers proposed the following hypothesis:
H₅: *There is a significant relationship between techno-uncertainty and employees' well-being.*

3. Research Methodology

The population of this cross-sectional study is 20,000 individual employees of a telecommunication company in Malaysia. Utilizing a convenience sampling technique, a total of 141 employees of the company voluntarily participated as the respondents of the research. The sample size is acceptable since the recommended sample size by G*Power is 138. The researchers set the effect size at 0.15 (a medium effect), 0.05, and power t at 0.95. An acceptable power setting for social and business science research is indicated by a value of 80 percent or above (Memon et al., 2020).

The researchers obtained permission from the top management of the company to collect data by distributing a link to Google Forms via a formal channel of communication among the employees of the company under study. Clear instructions were provided to the respondents on the procedures to participate in the study. They were given three weeks to complete and submit the questionnaire online.

Research Instruments: Questionnaires used for the data collection consist of 6 sections, namely Section A (Demographic information), Section B (Techno-overload), Section C (Techno-invasion), Section D (Techno-complexity), Section E (Techno-insecurity), Section F (Techno-uncertainty), and Section G (Employee's Well-being). The items, except under Section A, utilized a five-point Likert from 1 = "Strongly Disagree," 2 = "Disagree," 3 = "Neutral," 4 = "Agree" and 5 = "Strongly Agree".

Items to Measure Employee's Well-Being: The dependent variable is employee's well-being was measured by 13 items adopted from Kristensen et al. (2005), as listed in Table 1. The Cronbach's Alpha for all the items indicated that the items are reliable in terms of their internal consistency.

Table 1: Item Measurements for Dependent Variable

Variables	Items	Cronbach's Alpha
Employee's Well-Being	1. I often feel tired. 2. I often feel physically exhausted. 3. I often feel emotionally exhausted. 4. I often think that: "I can't take it anymore". 5. I often feel worn out. 6. I often feel weak and susceptible to illness. 7. I feel worn out at the end of the working day. 8. I feel exhausted in the morning at the thought of another day at work. 9. I feel that every working hour is tiring for me. 10. I think I have enough energy for family and friends during my leisure time. 11. My work makes me feel emotionally exhausted. 12. My work frustrates me. 13. I feel burnt out because of your work.	0.937

Source: Kristensen et al. (2005).

Items to Measure Technostress Creators: Twenty-two items adopted from Ragu-Nathan et al. (2008) and Tarafdar et al. (2007) of technostress creators were used to measure the independent variables of the research, as listed in Table 2. The Cronbach's Alpha for all the items indicated that the items are reliable in terms of their internal consistency.

Table 2: Item Measurement for Five (5) Independent Variables

Variable	Items	Cronbach's Alpha
Techno-overload	<ol style="list-style-type: none"> 1. I am forced by this technology to work much faster. 2. I am forced by this technology to do more work than I can Handle. 3. I am forced by this technology to work with very tight time Schedules. 4. I am forced to change my work habits to adapt to new Technologies. 5. I have a higher workload because of increased technology complexity. 	0.923
Techno-invasion	<p>I spend less time with my family due to this technology.</p> <p>I have to be in touch with my work even during my vacation due to this technology.</p> <p>I have to sacrifice my vacation and weekend time to keep current on new technologies.</p> <p>I feel my personal life is being invaded by this technology.</p>	0.860
Techno-complexity	<p>I do not know enough about this technology to handle my job satisfactorily.</p> <p>I need a long time to understand and use new technologies.</p> <p>I do not find enough time to study and upgrade my technology skills.</p> <p>I find new recruits to this organization know more about computer technology than I do.</p> <p>I often find it too complex for me to understand and use new technologies.</p>	0.906
Techno-insecurity	<p>I feel a constant threat to my job security due to new technologies.</p> <p>I have to constantly update my skills to avoid being replaced.</p> <p>I am threatened by co-workers with newer technology skills.</p> <p>I do not share my knowledge with my co-workers for fear of being replaced.</p> <p>I feel there is less sharing of knowledge among co-workers for fear of being replaced.</p>	0.766
Techno-uncertainty	<ol style="list-style-type: none"> 1. There are always new developments in the technologies we use in our organization. 2. There are constant changes in computer software in our organization. 3. There are frequent upgrades in computer networks in our organization. 	0.912

Source: Ragu-Nathan et al. (2008) and Tarafdar et al. (2007).

4. Results

Demographic Background of the Respondents: Out of 141 respondents, 71 were male (50.4%) and 70 were female (49.6%). Sixty-one respondents (43.3%) were in non-managerial positions at the operational unit, 35 respondents (24.8%) were in non-managerial positions at the administration unit, and 45 (31.9%) respondents were in managerial positions. Table 3 summarizes the respondents' background.

Table 3: Demographic Background of the Respondents

Demographic Variables	Category	Frequency (N)	Percent (%)
Gender	Male	70	50.4
	Female	71	49.6
Age	18 – 23	21	14.9
	24 – 29	54	38.3
	30 – 39	42	29.8
	40 – 49	16	11.3
	50 and above	8	2.7
Positions	Non-Managerial Operational Unit	61	43.3
	Administration Unit Employee	35	24.8
	Managerial Level Employee	45	31.9

Relationship between Technostress Creators and Employees' Well-Being: Multiple regressions were utilized to determine the relationship between technostress creators (techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty) and well-being among the respondents. The results of the regression analysis undertaken for this investigation are displayed in Table 4. The model was significant in predicting employee well-being: $F(5,135) = 38.603, p < 0.000$. The R^2 for the overall model was 0.588 or 58.8% with an adjusted R^2 of 0.573 or 57.3%, a strong size effect is reported by the model, of variations in employee's well-being is accounted for by the linear combination of the predictor variables (techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty).

Table 4: Results of Multiple Regression Analysis

Independent Variables	Unstandardized Coefficients B	Standard Coefficients Beta	t	Sig	Correlation Part sr^2	Collinearity Statistics	
						Tolerance	VIF
Techno-overload	-0.209	-0.297	-3.444	.001	-0.190	0.409	2.447
Techno-invasion	-0.444	-0.493	-4.811	.001	-0.266	0.290	3.445
Techno-complexity	0.358	0.456	4.849	.001	0.268	0.345	2.900
Techno-insecurity	-0.229	-0.319	-3.208	.002	-0.177	0.308	3.244
Techno-uncertainty	-0.220	-0.266	-4.009	.001	-0.221	0.690	1.449
R Square	0.588						
Adjusted R Square	0.573						
F	38.603						
Sig. of F Value	0.000						

Dependent Variable: Employee's Well-Being, $p < 0.05$.

To answer the research question (i.e. is there any relationship between the five technostress creators, namely, techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty and employee well-being?) there were five hypotheses were tested using multiple regression analysis. Unstandardized coefficients reflect the degree to which the dependent variable changes with a particular independent variable while all other independent variables are maintained constant. Table 4 shows a negative association between techno-overload ($\beta = -0.209, p = 0.000, p < 0.05$) and employees' well-being. In the table, the negative slope for techno-overload (-0.209) as a predictor of employee well-being indicated a 0.209 decrease for each 1-point increase in techno-overload. In other words, employees' well-being tends to increase as techno-overload decreases. The square semi-partial correlation (sr^2) estimated how much variance in employee well-being was uniquely predictable from techno-overload (0.109). This indicates that -10% of the variance in the employee's well-being is uniquely accounted for by techno-overload when techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty were controlled. Therefore, the H_1 was accepted for this study.

Table 4 also shows a negative association between techno-invasion ($\beta = -0.444, p = 0.001, p < 0.05$) and employees' well-being. The negative slope for techno-invasion (-0.444) as a predictor of employee well-being

indicated a 0.444 decrease in employee well-being for each 1-point increase in techno-invasion. In other words, employees' well-being tends to increase as techno-invasion decreases. The square semi-partial correlation (sr^2) of techno-invasion is -0.266, which indicates that -26% of the variance in the employee's well-being is uniquely accounted for by techno-invasion when techno-overload, techno-complexity, techno-insecurity, and techno-uncertainty was controlled. Therefore, H_2 was accepted for this study.

For the third hypothesis, Table 4 shows a positive association between techno-complexity ($\beta = 0.358$, $p = 0.000$, $p < 0.05$) and employees' well-being. The positive slope for techno-complexity (0.358) as a predictor of employee well-being indicated a 0.358 increase in employee well-being for each 1-point increase in techno-invasion. In other words, employees' well-being tends to increase as techno-invasion increases. The square semi-partial correlation (sr^2) of techno-invasion is 0.268, which indicates that 26% of the variance in the employee's well-being is uniquely accounted for by techno-complexity when techno-overload, techno-invasion, techno-insecurity, and techno-uncertainty was controlled. Therefore, H_3 was accepted for this study.

Table 4 above shows a negative association between techno-insecurity ($\beta = -0.229$, $p = 0.000$, $p < 0.05$) and employees' well-being. The negative slope for techno-insecurity (-0.229) as a predictor of employee well-being indicated a 0.229 decrease in employee well-being for each 1-point increase in techno-insecurity. In other words, employees' well-being tends to increase as techno-invasion decreases. The square semi-partial correlation (sr^2) of techno-invasion is -0.177, which indicates that -17% of the variance in the employee's well-being is uniquely accounted for by techno-insecurity when techno-overload, techno-invasion, techno-complexity, and techno-uncertainty was controlled. Therefore, H_4 was accepted for this study.

For the fifth hypothesis, Table 4 shows a negative association between techno-uncertainty ($\beta = -0.220$, $p = 0.002$, $p < 0.05$) and employees' well-being. The negative slope for techno-uncertainty (-0.220) as a predictor of employee well-being indicated a 0.220 decrease in employee well-being for each 1-point increase in techno-uncertainty. In other words, employees' well-being tends to increase as techno-uncertainty decreases. The square semi-partial correlation (sr^2) of techno-invasion is -0.221, which indicates that -22% of the variance in the employee's well-being is uniquely accounted for by techno-insecurity when techno-overload, techno-invasion, techno-complexity, and techno-insecurity was controlled. Therefore, H_5 was accepted for this study. Table 5 summarizes the hypothesis for the study on the impact of technostress creators on employees' well-being in a telecommunication company in Kuching Sarawak.

Table 5: Summary of Hypothesis

HYPOTHESES	RELATIONSHIP	RESULT
H₁	There is a significant relationship between techno-overload and techno-employee's well-being.	Supported
H₂	There is a significant relationship between techno-invasion and techno-employee's well-being.	Supported
H₃	There is a significant relationship between techno-complexity and techno-employee's well-being.	Supported
H₄	There is a significant relationship between techno-insecurity and techno-employee's well-being.	Supported
H₅	There is a significant relationship between techno-uncertainty and techno-employee's well-being.	Supported

Discussion: Based on the findings, this study concluded that all five technostress creators are influencing employee's well-being. The most prevailing independent variable that would influence well-being is techno-invasion, compared with the other independent variables of the study, namely, techno-overload, techno-complexity, techno-insecurity and techno-uncertainty.

This study found that there was a strong negative relationship between techno-overload and employees'

well-being. This is probably because the usage of technology made the employees work beyond normal working hours to complete their tasks. This finding is supported by Lee et al. (2016) that reported the usage of technology made employees spend so much time accomplishing their tasks and dealing with stress, which leads to technology overload. While according to Wang et al. (2022), the usage of technology could lead to an increase in productivity and profitability but also the negative effects of technostress, which could deplete employees' energy, motivation, and well-being.

Based on the findings, this study found there was a strong negative relationship between techno-invasion and employees' well-being for both personal and work-related burnout. The employees feel that their personal life is being interrupted since they proceed with their tasks at home. The findings of this study were supported by Rasool et al. (2022) who highlighted that job-life conflict is an issue that arises when family obligations and work obligations conflict. Due to the widespread usage of technology in the workplace, employees must be present after hours and check their emails and messages (Rasool et al., 2022). Employees are required to work overtime, so they return home with feelings of burden, worry, and mental exhaustion. This results in a conflict between work and family for employees, which eventually has a negative impact on both job performance and family life (Harris et al., 2022).

This research found that there is a positive relationship between techno-complexity and employees' well-being. The respondents feel they have adequate knowledge of the technology used inside the company. The employees need more time to learn to understand the system. The researcher also assumed that the employees have the motivation to learn about the new technology and try to study by themselves. The researcher also assumes that the employees actively participate in any seminars or programs organized by the organization to constantly upgrade their skills and knowledge related to the new system or technologies.

This research found that there was a negative relationship between techno-insecurity and employees' well-being. The respondents feel that they are insecure by the constant updates in the technology used inside the company. They also feel threatened to be replaced by other people who have more potential and skills in using the technology. Technostress can have psychological causes, such as job security, where people worry that computers will replace their jobs; professional jealousy brought on by technological competency; and demotivation due to extended periods of any technological activity (Tagurum et al., 2017). (Shadbad & Biros, 2020) stated that they could consider limiting the required amount of ICT usage, such as e-mail loads, since it may increase the likelihood of inadvertently clicking on phishing links, such as by employing a filtering technique to limit the number of received e-mails.

Based on the findings, the two variables (techno-uncertainty and employee well-being) were negatively related. Thus, the results obtained support the hypothesis. Learning new IT was often regarded as tough and irritating. When it came to learning new IT, respondents also had to acquire new methods of working, which impacted the software development process as a whole and their productivity. The responder mostly feels that the stressful work atmosphere with tight deadlines and timelines enhanced the need to learn new IT rapidly and effectively. The responders were also burdened by learning due to the rapid rate of development within the organization.

5. Managerial Implications and Recommendations

The most prevailing independent variable in this research study is techno-invasion. Thus, this research recommended that companies need to provide guidelines on ICTs used outside of work and take action to limit such work-related interruptions. To prevent technostress, managers should attempt to strike a balance between workers' technical skills, the technology required for job duties and activities, and the amount to which technology invades non-work life while staffing positions and planning work (Brivio et al., 2018).

Apart from that, it is recommended for a company to conduct technology-based training seminars or programs and encourage knowledge sharing among the employees to cope with the issues of technostress. According to Islam et al. (2022), the most effective ways for employees to deal with the effects of technostress are to participate in technology-based training, practice effective time management, engage in physical activity, be aware of the different levels of technostress, take regular breaks while using technology, and

share their knowledge with colleagues. Moreover, as a means of mitigating the negative effects of poor internet quality, which can lead to technostress for employees, employers should provide access to a high-speed internet network that is both easily accessible and has a wide range of coverage.

The authors also would recommend future research to examine additional potential influences on employees' well-being, including moral disengagements, such as a lack of empathy and a sense of belonging within the company. Another potential influence on employees' well-being might include a lack of organizational training, resistance to new changes and constant updates of new technological advancement. In addition, future researchers could examine additional variables not examined in this study, such as employee performance, job motivation, and level of engagement. Future researchers also can include other causes of technostress, such as lack of technical assistance, professional employees, equipment, involvement in decision-making, a slow network, technological failure, rising user demand, information overload, and inadequate formal training.

Conclusion: The purpose of this study is to determine the relationship between five technostress creators, namely, techno-overload, techno-invasions, techno-complexity, techno-insecurity, and techno-uncertainty towards employee well-being at one Telecommunication Company in Sarawak, Malaysia. The findings of this research indicate that there is a strong relationship between all technostress creators and the well-being of employees. Thus, this research adds to the knowledge of the relationships between technostress creators and employees' well-being in the workplace. Since the research found that the most prevailing independent variable in this research study is techno-invasion, thus, this research recommended that the company needs to provide guidelines on ICTs use outside of work and take action to limit such work-related interruptions.

References

- Abd Aziz, N. N., Awang Kader, M. A. & Ab Halim, R. (2021). The Impact of Technostress on Student Satisfaction and Performance Expectancy. *Asian Journal of University Education*, 17(4), 538-552. doi:10.24191/ajue.v17i4.16466
- Adel-Mehraban, M., Mahdian, A. & Alavi M, M. (2019). How Managers are Related To Techno-Stress in Organization. *Preventive Care in Nursing & Midwifery Journal*, 9(3), 42-49.
- Ahmad Ahmad, U., Amin, S. & Ismail, W. (2012). The Relationship Between Technostress Creators and Organisational Commitment Among Academic Librarians. *Procedia - Social and Behavioral Sciences*, 40, 182-186. doi:10.1016/j.SBSPRO.2012.03.179
- Alam, M. A. (2016). Techno-stress and productivity: Survey evidence from the aviation industry. *Journal of Air Transport Management*, 50, 62-70. doi:10.1016/j.jairtraman.2015.10.003
- Allen, T. D., Golden, T. D. & Shockley, K. M. (2015). How Effective Is Telecommuting? Assessing the Status of Our Scientific Findings. *Psychological Science in the Public Interest*, 16(2), 40-68. doi:10.1177/1529100615593273
- Al-Qallaf, C. L. (2006). Librarians and Technology in Academic and Research Libraries in Kuwait: Perceptions and Effects. *Libri*, 56, 168-179. doi:10.1515/libr.2006.168
- Andrade, A. L., Oliveira, M. Z. & Hatfiel, E. (2017). Work-family conflict: a study with Brazilians and Americans. *Revista Psicologia: Organizações e Trabalho*, 17(2), 106-113. doi:10.17652/rpot/2017.2.12738
- Anyaoku, E. N., Osuigwe, N. E. & Oguaka, N. C. (2015). Technology and Job Satisfaction in Academic Libraries: Role of Leadership Style and Librarians' Attitude. *International Journal of Library Science*, 4(4), 73-80. doi: 10.5923/j.library.20150404.02
- Ayyagari, R., Grover, V. & Purvis, R. (2011). TECHNOSTRESS: TECHNOLOGICAL ANTECEDENTS AND IMPLICATIONS. *MIS Quarterly*, 35(4), 831-858. doi:10.2307/41409963
- Bakker, A. & Demerouti, E. (2007). The job demands-resources model: state of the art. *Journal of Managerial Psychology*, 22, 309-328. doi:10.1108/02683940710733115
- Bakker, A. & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. *Journal of occupational health psychology*, 22(3), 273-285. doi:10.1037/ocp0000056
- Boswell, W. & Olson-Buchanan, J. (2007). The Use of Communication Technologies After Hours: The Role of Work Attitudes and Work-Life Conflict. *Journal of Management*, 33, 592-610. doi:10.1177/0149206307302552

- Brivio, E., Gaudio, F., Vergine, I., Mirizzi, C. R., Reina, C., Stellari, A. & Galimberti, C. (2018). Preventing Technostress Through Positive Technology. *Frontiers in Psychology*, 9. doi:10.3389/fpsyg.2018.02569
- Brod, C. (1984). *Technostress: The Human Cost of the Computer Revolution*. Reading, USA: Addison-Wesley Publishing Company.
- Brown, R., Duck, J. & Jimmieson, N. (2014). E-mail in the workplace: The role of stress appraisals and normative response pressure in the relationship between e-mail stressors and employee strain. *International Journal of Stress Management*, 21(4), 325-347. doi:10.1037/a0037464
- Burke, M. (2009). The incidence of technological stress among baccalaureate nurse educators using technology during course preparation and delivery. *Nurse Education Today*, 29(1), 57-64. doi:10.1016/j.nedt.2008.06.008
- Chakraborty, A. & Kar, A. K. (2021). *International Journal of Information and Learning Technology*, 38(3), 273-282. doi:10.1108/IJILT-06-2020-0125
- Chirumbolo, A., Urbini, F., Callea, A., Lo Presti, A. & Talamo, A. (2017). Occupations at Risk and Organizational Well-Being: An Empirical Test of a Job Insecurity Integrated Model. *Frontiers in Psychology*, 8(2084). doi:10.3389/fpsyg.2017.02084
- Chiu, C. M., Tan, C., Hsu, J. C. & Cheng, H. L. (2023). Employee deviance: the impacts of techno-insecurity and moral disengagement. *Information Technology & People*, 36(1), 140-164. doi:10.1108/ITP-03-2021-0198
- Coakes, S. (2013). *SPSS: Analysis without anguish: version 20 for Windows (2nd ed.)*. Australia: John Wiley & Sons Australia, Ltd.
- D'Arcy, J., Ashish, G., Tarafdar, M. & Turel, O. (2014). Reflecting on the "Dark Side" of Information Technology Use. *Communication of The Association for Information System*, 35(5), 109-118. doi:10.17705/1CAIS.03505
- De', R., Pandey, N. & Pal, A. (2020). Impact of digital surge during Covid-19 pandemic: A viewpoint on research and practice. *International Journal of Information Management*, 55. doi:10.1016/j.ijinfomgt.2020.102171
- Dragano, N. & Lunau, T. (2020). Technostress at work and mental health: concepts and research results. *Current opinion in psychiatry*, 33(4), 408-413. doi:10.1097/YCO.0000000000000613
- Eddleston, K. & Mulki, J. (2017). Toward Understanding Remote Workers' Management of Work-Family Boundaries: The Complexity of Workplace Embeddedness. *Group & Organization Management*, 42, 346-387. doi:10.1177/1059601115619548
- Golden, T. (2012). Altering the Effects of Work and Family Conflict on Exhaustion: Telework During Traditional and Nontraditional Work Hours. *Journal of Business and Psychology*, 27, 255-269. doi:10.1007/S10869-011-9247-0
- Guest, D. E. (2017). Human resource management and employee well-being: towards a new analytic framework. *Human Resource Management Journal*, 27(1), 22-38. doi:10.1111/1748-8583.12139
- Guillaume, Y. R., Dawson, J., Otaye-Ebede, L., Woods, S. A. & West, M. (2015). Harnessing demographic differences in organizations: What moderates the effects of workplace diversity? *Journal of Organizational Behavior*, 38, 276-303. doi:10.1002/job.2040
- Hair, J., Black, W., Babin, B. & Anderson, R. (2010). *Multivariate Data Analysis (7th ed.)*.
- Hair, J., Money, A., Babin, B. & Samouel, P. (2003). *Essentials of business research*. Wiley, New York.
- Harris, K., Harris, R., Valle, M., Carlson, J., Carlson, D., Zivnuska, S. & Wiley, B. (2022). Technostress and the entitled employee: Impacts on work and family. *Information Technology & People*, 35(3), 1073-1095.
- Houli, D. & Radford, M. (2020). An exploratory study using mindfulness meditation apps to buffer workplace technostress and information overload. *Proceeding of the Association for Information Science and Technology*, 57. doi:https://doi.org/10.1002/pra2.373
- Ingusci, E., Signore, F., Giancaspro, M., Manuti, A., Molino, M., Russo, V. & Cortese, C. (2021). Workload, Techno Overload, and Behavioral Stress During COVID-19 Emergency: The Role of Job Crafting in Remote Workers. *Frontiers in Psychology*, 12. doi:10.3389/fpsyg.2021.655148
- Islam, M. S. & Amin, M. (2022). A systematic review of human capital and employee well-being: putting human capital back on the track. *European Journal of Training and Development*, 46(5/6), 504-543. doi:https://doi.org/10.1108/EJTD-12-2020-0177

- Jena, R. K. (2015). Impact of Technostress on Job Satisfaction: An Empirical Study among Indian Academician. *The International Technology Management Review*, 5(3), 117-124. doi:https://doi.org/10.2991/itm.2015.5.3.1
- Jena, R. K. (2015). Technostress in ICT enabled collaborative learning environment: An empirical study among Indian academician. *Computers in Human Behavior*, 51, 1116-1123. doi:10.1016/j.chb.2015.03.020
- Juchnowicz, M. & Kinowska, H. (2021). Employee Well-Being and Digital Work during the COVID-19 Pandemic. *Information*, 12, 293-304. doi:10.3390/info12080293
- Kim, D. G. & Lee, C. W. (2021). Exploring the Roles of Self-Efficacy and Technical Support in the Relationship between Techno-Stress and Counter-Productivity. *Sustainability*, 13(8), 4349. doi:10.3390/su13084349
- Kristensen, T., Borritz, M., Villadsen, E. & Christensen, K. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & stress*, 19(3), 192-20. doi:10.1080/02678370500297720
- La Torre, G., De Leonardis, V. & Chiappetta, M. (2020). Technostress: how does it affect the productivity and life of an individual? Results of an observational study. *Public Health*, 189, 60-65. doi:10.1016/j.puhe.2020.09.013
- La Torre, G., Esposito, A., Sciarra, I. & Chiappetta, M. (2018). Definition, symptoms and risk of techno-stress: a systematic review. *International Archives of Occupational and Environmental Health*. doi:10.1007/s00420-018-1352-1
- Larson, L. E. & Dechurch, L. (2020). Leading Teams in the Digital Age: Four Perspectives on Technology and What They Mean for Leading Teams. *The Leadership Quarterly*. doi:10.1016/j.leaqua.2019.101377
- Lei, C. F. & Ngai, E. W. (2014). The Double-Edged Nature of Technostress on Work Performance: A Research Model and Research Agenda. *International Conference on Information Systems*, 1-18.
- Lin, C., Li, X. & Lam, L. W. (2020). Development or maintenance? Dual-oriented human resource system, employee achievement motivation, and work well-being. *Human Resource Management*, 59(4), 311-325. doi:10.1002/hrm.21997
- Major, V., Klein, K. & Ehrhart, M. (2002). Work time, work interference with family, and psychological distress. *The Journal of applied psychology*, 87(3). doi:10.1037/0021-9010.87.3.427
- Mann, S. & Holdsworth, L. (2003). The psychological impact of teleworking: stress, emotions and health. *New Technology, Work and Employment*, 18(3), 196-211.
- Marchiori, D. M., Mainardes, E. W. & Gouveia, R. (2018). Do Individual Characteristics Influence the Types of Technostress Reported by Workers? *International Journal of Human-Computer Interaction*, 1-13. doi:10.1080/10447318.2018.1449713
- Memon, M., Ting, H., Cheah, J., Thurasamy, R., Chuah, F. & Cham, T. (2020). Sample size for survey research: review and recommendations. *Journal of Applied Structural Equation Modeling*, 4(2), i-xx. doi:10.47263/jasem.4(2)01
- Molino, M., Ingusci, E., Signore, F., Manuti, A., Giancaspro, M. L., Russo, V. & Cortese, C. G. (2020). Wellbeing Costs of Technology Use during Covid-19 Remote Working: An Investigation Using the Italian Translation of the Technostress Creators Scale. *Sustainability*, 12(15). doi:10.3390/su12155911
- Murray, W. & Rostis, A. (2007). Who's Running the Machine? A Theoretical Exploration of Work Stress and Burnout of Technologically Tethered Workers. *Journal of Individual Employment Rights*, 12, 249-263. doi:10.2190/IE.12.3.F
- Nasirpouri Shadbad, F. & Biro, D. (2022). Technostress and its influence on employee information security policy compliance. *Information Technology & People*, 35(1), 119-141. doi:10.1108/ITP-09-2020-0610
- Nijp, H. H., Beckers, D. G., van de Voorde, K., Geurts, S. A. & Kompier, M. A. (2016). Effects of new ways of working on work hours and work location, health and job-related outcomes. *Chronobiology International*, 33(6), 604-618. doi:10.3109/07420528.2016.1167731
- Ninaus, K., Diehl, S., Terlutter, R., Chan, K. & Huang, A. (2015). Benefits and stressors – Perceived effects of ICT use on employee health and work stress: An exploratory study from Austria and Hong Kong. *International Journal of Qualitative Studies on Health and Well-being*, 10. doi:10.3402/qhw.v10.28838
- Pallant, J. (2010). *A Step by Step Guide to Data Analysis Using the SPSS Program* (4th ed.). Berkshire: McGraw-Hill Education.
- Parker, S., Bindl, U. K. & Strauss, K. (2010). Making Things Happen: A Model of Proactive Motivation. *Journal of Management*, 36, 827-856. doi:10.1177/0149206310363732

- Pullins, E., Tarafdar, M. & Pham, P. (2020). The dark side of sales technologies: how technostress affects sales professionals. *Journal of Organizational Effectiveness: People and Performance*, 7(3), 297-320. doi:10.1108/JOEPP-04-2020-0045
- Ragu-Nathan, T. S., Tarafdar, M., Ra, S. B. & Tu, Q. (2008). The Consequences of Technostress for End Users in Organizations: Conceptual Development and Empirical Validation. *Information Systems Research*, 19(4), 417-433. doi:10.1287/isre.1070.0165
- Ragu-Nathan, T. S., 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. doi:10.1287/isre.1070.0165
- Ramesh, R., Ananthram, S., Vijayalakshmi, V. & Sharma, P. (2021). Technostressors – a boon or bane? Toward an integrative conceptual model. *Journal of Indian Business Research*. doi:10.1108/jibr-10-2021-0348
- Rasool, T., Warraich, N. & Sajid, M. (2022). Examining the Impact of Technology Overload at the Workplace: A Systematic Review. *SAGE Open*, 12(3), 1-18. doi:10.1177/21582440221114320
- Salas-Vallina, A., Alegre, J. & López-Cabrales, Á. (2021). The challenge of increasing employees' well-being and performance: How human resource management practices and engaging leadership work together toward reaching this goal. *Human Resource Management*, 60(3), 333-347. doi:10.1002/hrm.22021
- Salazar-Concha, C., Ficapal-Cusí, P., Boada-Grau, J. & Camacho, L. J. (2021). Analyzing the evolution of technostress: A science mapping approach. *Heliyon*, 7. doi:10.1016/j.heliyon.2021.e06726
- Sarabadani, J., Compeau, D. & Carter, M. (2020). An Investigation of IT Users' Emotional Responses to Technostress. *Hawaii International Conference on System Sciences*. doi:10.24251/hicss.2020.748
- Sardeshmukh, S., Sharma, D. & Golden, T. (2012). Impact of Telework on Exhaustion and Job Engagement: A Job Demands and Job Resources Model. *ORG: Other Human Resource Management & Organizational Behavior (Topic)*. doi:10.1111/j.1468-005X.2012.00284.x
- Satpathy, S., Patel, G. & Kumar, K. (2021). Identifying and ranking techno-stressors among IT employees due to work from home arrangement during Covid-19 pandemic. *Decision*, 48, 391-402. doi:10.1007/s40622-021-00295-5
- Schaufeli, W. & Taris, T. (2014). A critical review of the job demands-resources model: Implications for improving work and health. Bridging occupational, organizational and public health: A transdisciplinary approach, 43-68. doi:10.1007/978-94-007-5640-3_4
- Sekaran, U. & Bougie, R. (2013). *Research Methods for Business: A Skill-Building Approach* (6th ed.). Wiley, New York.
- Sekaran, U. & Bougie, R. (2016). *Research Methods for Business: A Skill-Building Approach* (7th ed.). Wiley & Sons, West Sussex.
- Shadbad, F. N. & Biros, D. (2020). Technostress and its influence on employee information security policy compliance. *Information Technology & People*, 35(1), 119-141. doi:10.1108/ITP-09-2020-0610
- Sonnentag, S. (2001). Work, recovery activities, and individual well-being: A diary study. *Journal of Occupational Health Psychology*, 6, 196-210. doi:10.1037/1076-8998.6.3.196
- Srivastava, S. C., Chandra, S. & Shirish, A. (2015). Technostress creators and job outcomes: theorising the moderating influence of personality traits. *Information System Journal*, 25(4), 355-401. doi:10.1111/isj.12067
- Suh, A. & Lee, J. (2017). Understanding teleworkers' technostress and its influence on job satisfaction. *Internet Research*, 27(1), 140-159. doi:10.1108/IntR-06-2015-0181
- Sundram, V., Rajagopal, P., Bahrin, A., Mohd, R., Sayuti, N. & Othman, A. (2016). *Research Methodology: Tools, Methods and Techniques*. Malaysia Logistics and Supply Chain Association (MLSCA).
- Tabachnik, B. & Fidell, L. (2012). *Using multivariate statistics*. New York: Harper Collins.
- Tarafdar, M., Cooper, C. & Stich, J. F. (2019). The technostress trifecta - techno eustress, techno distress and design: Theoretical directions and an agenda for research. *Information Systems Journal*, 29(1), 6-42. doi:10.1111/isj.12169
- Tarafdar, M., Pullins, E. B. & Ragu-Nathan, T. S. (2015). Technostress: negative effect on performance and possible mitigations. *Information System Journal*, 25(2), 103-132. doi:10.1111/isj.12042
- Tarafdar, M., Tu, Q., & Ragu-Nathan, T. S. (2010). Impact of Technostress on End-User Satisfaction and Performance. *Journal of Management Information System*, 27(3), 303-334. doi:10.2753/MIS0742-122270311

- Tarafdar, M., Tu, Q., Ragu-Nathan, B. S. & Ragu-Nathan, T. S. (2007). The Impact of Technostress on Role Stress and Productivity. *Journal of Management Information Systems*, 24(1). doi:10.2753/MIS0742-1222240109
- Tarafdar, M., Tu, Q., Ragu-Nathan, T. S. & 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. doi:10.1145/1995376.1995403
- Tu, Q., Wang, K. & Shu, Q. (2005). Computer-Related Technostress in China. *Communication in the ACM*, 48(4), 77-81. doi:10.1145/1053291.1053323
- Wang, H., Ding, H. & Kong, X. (2022). Understanding technostress and employee well-being in digital work: the roles of work exhaustion and workplace knowledge diversity. *International Journal of Manpower*. doi:10.1108/IJM-08-2021-0480
- Wang, W., Kakhki, M. & Uppala, V. (2017). The Interaction Effect of Technostress and Non-Technological Stress on Employees' Performance. *Americas Conference on Information Systems*.
- Warr, P. (1994). A conceptual framework for the study of work and mental health. *An International Journal of Work, Health & Organisations*, 8(2), 84-97. doi:https://doi.org/10.1080/02678379408259982
- Wu, J., Wang, N., Mei, W. & Liu, L. (2017). Does Techno-invasion Trigger Job Anxiety? Moderating Effects of Computer Self-efficacy and Perceived Organizational Support. *Wuhan International Conference on e-Business*, 42, 241-250.
- Yin, P., Ou, C., Davison, R. & Wu, J. (2018). Coping with mobile technology overload in the workplace. *Internet Re*, 28, 1189-1212. doi:10.1108/IntR-01-2017-0016
- Zhao, M. (2021). The role of autonomy, status conflict and techno-complexity in exhaustion and self-efficacy: a study with Chinese university teachers.