

## The Influence of Technostress on Employee Well-Being Among Generation Z Employees in Malaysia

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**Abstract:** Today's digital-centric world has spawned a new phenomenon called 'technostress', a stress condition due to constant changes, advancements and reliance on technology. Technostress is a rising issue in terms of its influence on employee well-being as technostress has been causing the deterioration of employee well-being. There is an urgency to understand and study the influence of technostress on employee well-being so that measures can be taken to rectify the matter and improve employee well-being. This study aims to examine which technostress creators have the most influence on employee well-being among Generation Z employees in Malaysia. Past literature to understand employee well-being, technostress and the relationship between the two were studied. Technostress creators were identified as techno-overload, techno-complexity, techno-uncertainty, and techno-insecurity. The study found that techno-uncertainty is the technostress creator that has the most influence on Generation Z employees' well-being in Malaysia. Data collection was conducted by using a virtual questionnaire. 135 respondents among Generation Z employees in Malaysia participated in this study.

**Keywords:** *Technostress, employee well-being, Generation Z employees, techno-overload, techno-complexity, techno-uncertainty, techno-insecurity.*

### 1. Introduction and Background

Employee well-being is a concept that is particularly familiar to those involved in human resources. It encompasses various aspects of an employee's health, including physical health, mental health, emotional health, and spiritual health. Additionally, it refers to an employee's overall experience and satisfaction with their job and organization (Mertala et al., 2023). When employees have a positive experience and satisfaction with their job and the organization, their well-being is considered high. According to Wang et al. (2022), employee well-being is a crucial outcome of organizational studies and is tied to unlocking human potential. This implies that employees in good health are more likely to feel empowered, motivated, and productive, ultimately enhancing the organization's overall performance. Therefore, organizations should prioritize employees' well-being and investigate factors that influence it to address any challenges that arise.

A growing concern is the impact of technology-induced stress, or technostress on employee well-being. Despite advancements in technology, there is limited research on the extent of technostress's influence on employee well-being (Wang et al., 2022). This study examines the relationship between technostress and employee well-being. Employee well-being can be simply described as a positive work-related experience. However, its significance extends beyond the individual, affecting an organization's health and output. In a healthy organization, both performance and employee well-being can co-exist and reinforce each other (Singh & Jha, 2021). As Generation Z enters the workforce, organizations must consider unique approaches to enhance their well-being, given their generational differences.

In today's digital era, technostress is a factor that may influence employee well-being. Constantly adapting to new or complex technology leads to technostress, which Tiwari (2020) defines as the inability to cope with ever-evolving information and communication technologies (ICTs). Technostress consists of four creators, namely, techno-overload, techno-complexity, techno-uncertainty and techno-insecurity (Wang et al., 2020). These creators can cause stressful situations related to technology use, negatively impacting employee well-being by causing burnout, feelings of inadequacy and job security fears. Generation Z, as digital natives, is likely

to experience technostress due to their constant interaction with technology (Putriani & Apriani, 2022). This raises questions about technostress's impact on Generation Z's well-being in the workforce, considering the rapid technological changes shaping their values and behavior (Pichler et al., 2021).

There is a lack of literature providing sufficient insights into the relationship between technostress and employee well-being (Wang et al., 2022). Furthermore, Yener et al. (2020) note that previous research on technostress and workplace harm lacks clarity and conclusive answers. This suggests that existing studies do not adequately address the relationship between technostress and employee well-being, particularly among Generation Z employees in Malaysia. This study aims to identify which technostress creators (techno-overload, techno-complexity, techno-uncertainty, techno-insecurity) most significantly affect employee well-being, among Generation Z employees in Malaysia.

Following the introduction of this paper, the subsequent topics will explain the literature related to the topic, research methods conducted by the researchers, findings, and discussion of the research findings. This paper also will explain the practical implications of the research and recommendations for future research.

## 2. Literature Review

Past studies have distinguished two philosophies of well-being: (1) the hedonic approach, which focuses on maximizing pleasure and making life more enjoyable, and (2) the eudaimonic approach, which emphasizes meaning, life purpose and self-actualization (Pataki-Bittó & Kun, 2022). Employee well-being tends to align more with the hedonic approach, encompassing cognitive and affective job evaluations (Bartels et al., 2019). This happiness-oriented perspective defines employee well-being as subjective experiences, measured by indicators such as positive affect and job satisfaction (Zhang et al., 2020). Therefore, this study is grounded in the hedonic approach, presenting employee well-being as a positive work experience.

### Employee Well-Being

Although there is no single definition of employee well-being (Tuzovic & Kabadayi, 2020), it can generally be categorized into two main definitions: positive experience and overall experience. Hasan and Kashif (2020) define employee well-being as a set of positive feelings that arise when employees feel they contribute to their work's development. Rurkkhum (2023) simplifies this definition by stating that employee well-being involves positive experiences gained as members of an organization. Additionally, Mahomed et al. (2023) define employee well-being as a positive emotional state resulting from evaluating one's work or work experience.

On the other hand, Wang et al. (2022) define employee well-being as overall job satisfaction, where employees assess and balance their positive affect and negative affect. Luu (2020) describes it as the overall quality of an employee's experience and functioning at work. Similarly, Islam and Amin (2021) define employee well-being as the optimal psychological experience and functioning of individual employees. Well-being is further recognized as the overall quality of employee experience and functioning, which is crucial for positive individual and organizational outcomes (Sutton & Atkinson, 2023).

### Dimensions of Employee Well-being

Pataki-Bittó and Kun (2022) identify three key dimensions in employee well-being research: subjective well-being, physical and mental health, and social well-being. Conversely, Singh and Jha (2021) distinguish two dimensions: employee well-being in terms of work engagement and burnout. Meanwhile, Nabawanuka and Ekmekcioglu (2021) highlight three fundamental aspects of employee well-being: life, work and psychological needs in both life and work domains.

This study examines employee well-being within the workplace context, specifically focusing on the influence of technostress. Employee well-being in the workplace can encompass various aspects such as human functioning, safe employment basic needs, expression of virtues/character strengths, as well as the self-actualization and fulfillment of a meaningful vocation or integrating spirituality with work (Nabawanuka & Ekmekcioglu, 2021). Research also indicates a close link between employee well-being and various performance metrics like productivity, employee turnover, job satisfaction, stress and work-life balance

(Tuzovic & Kabadayi, 2020). Improving employee well-being is associated with positive outcomes such as increased employee commitment and enhanced individual performance (Singh & Jha, 2021). Consequently, contemporary organizations are urged to view employee well-being as a critical business concern and actively foster positive and enriching work environments (Jaiswal & Arun, 2021).

On the flip side, ignoring employee well-being leads to adverse outcomes. For instance, stress can deteriorate an employee's well-being. When this happens, productivity drops, negatively affecting the organization. Tuzovic and Kabadayi (2020) highlight employee well-being as critical for employees and employers, emphasizing its importance. Ensuring an employee's well-being is essential not only for the employee's health but also for the organization's overall performance (Singh & Jha, 2021). This is supported by Zhong et al. (2019) who stated that employee well-being is crucial to the survival and development of organizations.

### **Generation Z Employee Well-being**

Generation Z is the latest generation to enter the workforce. While there is no universally agreed-upon age range, they are generally considered to be born from the mid-1990s to the early 2010s. Specifically in Malaysia, Generation Z includes those born between 1998 – 2002 (Tjiptono et al., 2020). This generation is known for its extensive use of digital technology, having never experienced a time before the internet (Seibert, 2021).

Generation Z is well-known for their commitment to maintaining well-being and mental health, and as they enter the workforce, they are recognized for demanding work-life balance. This highlights that Generation Z prioritizes well-being as employees. Organizational support for psychological health and well-being greatly benefits Generation Z employees (Pichler et al., 2021). Described as the most achievement-oriented, Generation Z is economically better off, highly educated, and very diverse (Harris, 2020) demonstrating their potential to thrive in the workplace.

However, mental health issues and well-being challenges are also prevalent among Generation Z. This is likely because Generation Z employees are more open about their mental health struggles and the treatment or therapy they receive (Bernecker & Becker, 2021), viewing it not as a stigma but as an effort to enhance well-being. In contrast, older generations may perceive Generation Z's dedication to well-being as sensitivity or an inability to adapt. Therefore, it is crucial to study Generation Z's employee well-being in the workplace, as they will shape the future workforce.

### **Technostress on Employee Well-being**

Currently, the potential impact of technostress on employee well-being is gaining attention (Mohammed, 2022). Wang et al. (2022) assert that technostress negatively affects employee well-being, a view shared by Pansini et al. (2023), who also link technostress to negative effects on behavior, thoughts, attitude, and overall well-being. According to Rurkkhum (2023), organizations must adapt to new routines and methods, heavily relying on technology to thrive. Garg et al. (2022) highlight that prolonged screen time during the pandemic has exacerbated technostress, leading to reduced cognitive performance, discomfort, physical health issues, and decreased mental capacity – all indicative of poor well-being. Therefore, examining the relationship between technostress and employee well-being is crucial.

Technostress combines the terms *technology* and *stress*. According to El Kiassi and Jahidi (2023), Brod (1984) coined the term, defining it as a modern disease stemming from the inability to healthily manage new computer technologies. Technostress is characterized as a negative individual phenomenon caused, either directly or indirectly, by technology (Dahabiyeh et al., 2022). Originating from Anglo-Saxon literature, the concept of technostress has seen increased study over the decades, although it remains under development (Kiassi & Jahidi, 2023). The literature explains technostress as resulting from interactions with technology that lack usability or from inadequate organizational conditions for its use. Additionally, Garg et al. (2022) suggest that technostress arises when individuals struggle to adapt to technological advancements (Garg et al., 2022).

**Definition of Technostress:** Ibrahim et al. (2023) define technostress as any adverse effects on human behaviors, thoughts, attitudes, and psychology imposed by technology use. Meanwhile, Bondanini et al. (2020) simplify the definition of technostress as stress experienced by end users in organizations because of the use of their technology. Sharma and Gupta (2022) on the other hand define technostress as the mental stress and the negative psychophysical effects that an individual can experience due to the use of information and communications technology (ICT). As the scope of this study is narrowed down to actively working employees, technostress is defined as a phenomenon that is described as the stress that an employee feels owing to the constant presence and change of ICT (Harunavamwe & Kanengoni, 2023). Prior et al. (2023) also define technostress in a workforce sense as workers' stress caused by using digital platforms or ICTs.

**Technostress Among Generation Z:** Despite being known as the first generation of true digital natives who grew up alongside the advancement of technology, Generation Z has been found to face the phenomenon of technostress (Prior et al., 2023). Lee (2023) attributes the technostress in Generation Z to be caused by rapidly changing digital technologies. Meanwhile, Generation Z's constant technology usage especially on their smartphones has been deemed as a cause of technostress, followed by an overload of social media usage (James et al., 2023). The overload of technology usage heightened during the COVID-19 pandemic, and it led to negative effects on the psychological well-being of Generation Z which is considered as a manifestation of technostress (Wu et al., 2021). The study further states that although the pandemic witnessed an increase in technology usage from Generation Z, they also demanded a digital detox due to the technostress that they were facing because of the lockdown.

### **Technostress Creators**

Ramesh et al. (2021) describe aspects of technology that create stress as technostress creators. This indicates that technostress comprises technostress creators as its dimensions. Several past literature name four technostress creators in common: techno-overload, techno-complexity, techno-uncertainty and techno-insecurity (Bondanini et al., 2020; Korzynski et al., 2020; Wang et al., 2020).

**Techno-Overload:** Techno-overload is one of the technostress creators identified for this study. Korzynski et al. (2020) simply define techno-overload as a higher workload generated by ICTs. Further defined by Wang et al. (2022), techno-overload refers to a stressful situation where employees have to work longer and faster than usual due to technology. The literature further describes techno-overload as a condition where employees have to spend more time trying to adapt to new technologies that are introduced to their job scope. This is supported by another definition by Shadbad and Biros (2020) where techno-overload is said to occur when users work more, longer and faster due to IT use. A more detailed definition refers to techno-overload as when technology requires employees to work longer and faster, characterized by the completion of more work in less time, information overload and multitasking (Ramesh et al., 2021). El Kiassi and Jahidi (2023) define techno-overload as the increased workload, higher work speed, or change in work habits brought about by new technologies.

Similarly, techno-overload is also said to be experienced when ICT forces users to work faster and longer. (Harunavamwe & Kanengoni, 2023). For instance, Hwang et al. (2021) who studied security technostress give an example of techno-overload occurring when policies or systems require the performance of additional behaviors for document security beyond rudimentary word-processing work. Another example was provided by Pullins et al. (2020) in a sales context whereby techno-overload is described as the stress-creating condition where the sales professional must do additional tasks, faces an increase in the repertoire, ambit and scope of the role and extra work solely due to the use of technology.

Rasool et al. (2022) find that techno-overload has a negative influence on employee well-being whereby techno-overload causes a loss of focus at work and a decline in productivity. According to Wang et al. (2022), there is a negative relationship between techno-overload and employee well-being. The never-ending stream of new information and new concepts to learn and adapt to may affect an employee negatively. This is especially caused by how techno-overload results in longer work hours and a faster work pace. Techno-overload may physically affect an employee in terms of causing them to fall sick due to the constant chase at work. It was also found by Hang et al. (2022) that there is a significant relationship between techno-overload and employee well-

being. Thus, for this study, the actual relationship between techno-overload and employee well-being will be identified.

**H<sub>1</sub>:** There is a significant relationship between techno-overload and employee well-being.

**Techno-complexity:** Techno-complexity is another technostressor. It is difficult to learn to use ICTs (Korzynski et al., 2020). Wang et al. (2022) define techno-complexity as where employees perceive the complexity of using the technology and experience feeling inadequate about their existing technology skills. Some employees may find modern and new technology to be very complex. Even if they have previously worked with technology, being unable to cope with how complex technology can become may cause the employees to feel like their skills have not been enough. The feelings of inadequacy related to techno-complexity are also linked to the definition by Ramesh et al. (2021) where techno-complexity refers to situations when employees feel inadequate because of the time and effort spent in learning and understanding complex technology. Besides that, El Kiassi and Jahidi (2023) define techno-overload as the inability to learn or manage the complexity of new technologies.

According to Bondanini et al. (2020), techno-complexity is where the technology is so inherently complex that users find it difficult to understand resulting in the users feeling incompetent. Techno-complexity also describes the complexity associated with ICT, which may decrease employee work efficacy whilst increasing the time needed to learn and understand various aspects of ICT (Harunavamwe & Kanengoni, 2023). The idea that techno-complexity may become highly time-consuming is further supported by Shadbad and Biros (2020) whereby the study states that techno-complexity refers to circumstances in which a user is inexperienced in using IT and needs to spend time and energy to gain knowledge about IT.

Wu et al. (2021) believe that feelings of complexity may lead to more mistakes and may reduce productivity. An example scenario related to techno-complexity is when management often requires employees to spend additional time and effort to understand complex technology concepts and terms and follow standardized processes and methodologies regardless of their work duties (Hwang et al., 2021). Techno-complexity can be said to primarily occur amongst older generations who are unfamiliar with the advancements of technology as well as employees who do not usually interact with technology in their daily lives. Hwang et al. (2021) support this by stating that older workers or those with longer professional experience reported greater difficulty with the increase in technological complexity for executing tasks.

The difficulty of understanding how complex technology may be able to lower an employee's self-esteem due to feelings of incompetence and inadequacy. A low self-esteem will negatively affect an employee's well-being. Therefore, Wang et al. (2022) states that there is a negative relationship between techno-complexity and employee well-being. Hang et al. (2022) support this by observing that there is a significant relationship between techno-complexity and employee well-being. This study aims to identify whether there is a relationship between techno-complexity and employee well-being.

**H<sub>2</sub>:** There is a significant relationship between techno-complexity and employee well-being.

**Techno-Uncertainty:** Another technostressor that will be studied is techno-uncertainty. Simply put, techno-uncertainty is related to new ICT developments (Korzynski et al., 2020). According to Wang et al. (2022), techno-uncertainty is feelings of uncertainty due to the pace at which software, hardware and computer networks are constantly changing or evolving. This uncertainty may cause an employee to feel restless as well as feel a lack of stability; they might feel that even if they master a certain technology, there may be advancements in the future that would have to cause them to start from square one all over again. Techno-uncertainty is said to occur when users feel unsettled due to frequent organization-wide upgrades and accompanying software and hardware changes. (Ramesh et al., 2021) Furthermore, techno-uncertainty is also similarly defined as the constant changes in computer hardware and software (El Kiassi & Jahidi, 2023).

Bondanini et al. (2020) explain techno-uncertainty as ambiguity around expectations related to changes, particularly about technology. Employees may not know what to expect from time to time, especially when technology happens to sprout a new advancement or evolution without a warning. This is supported by Hang et al. (2022) explanation of techno-uncertainty where employees feel organizations move from one cycle to another with reduced time between systems upgrades, leaving them unsettled. Shadbad and Biros (2020)

further support this by stating: “Techno-uncertainty relates to users who feel uncertain due to the constant change/upgrades of IT.”

Techno-uncertainty involves the continuous changes or upgrades in ICTs that cause ambiguity and stress and add to the daily job demands so that individuals who do not possess the necessary technological skills experience an imbalance between the technological demands and the skills resources that they possess (Harunavamwe & Kanengoni, 2023). This indicates that techno-uncertainty may be a more stressful situation for employees who do not originate from an ICT-centric background or have any technology-centric skills in the first place.

Based on Wang et al. (2022), there is a negative relationship between techno-uncertainty and employee well-being. Uncertainty is a feeling that can cause restlessness, anxiety or the desire to give up before a bad thing happens. Techno-uncertainty may induce fear in employees about what to expect and if further advancements or changes to technology can affect them or their jobs (Hang et al., 2022). This fear will affect the employee’s mental state as they are conditioned to feel fear of the unknown which will then cause their well-being to deteriorate. Hang et al. (2022) also found that techno-uncertainty has a significant relationship with employee well-being. In this study, it will be identified whether techno-uncertainty and employee well-being have a relationship.

**H<sub>3</sub>:** There is a significant relationship between techno-uncertainty and employee well-being.

**Techno-Insecurity:** Lastly, techno-insecurity is the final technostressor that will be studied. Techno-insecurity is simply defined as a job threat due to ICTs by Korzynski et al. (2020). Wang et al. (2022)’s more elaborate definition of techno-insecurity is “a stressful situation where employees feel threatened about losing their jobs to other people who have a better understanding of the technology”. Bondanini et al. (2020) support this by describing techno-insecurity as employees feeling threatened by job loss to technology or other people with more technology understanding. Additionally, El Kiassi and Jahidi (2023) define techno-insecurity as job insecurity caused by using technology at work. As commonly understood by most, in today’s era of digitalization, more tech-savvy people have a higher likelihood of surviving the workforce. Most job descriptions—regardless of job scope—would ask for at least basic skills in technology.

Techno-insecurity also describes situations where a user feels he/she may lose his/her job either by computerization of job tasks or having less knowledge about IT compared to others (Shadbad & Biros, 2020). Ramesh et al. (2021) define techno-insecurity as when employees feel insecure about losing their jobs in the face of new technology and co-workers who might know more about these technologies (Ramesh et al., 2021). Martínez-Navalon et al. (2022) also describe techno-insecurity as a situation when workers are not confident in using ICTs, leading them to think that they cannot cope with the tasks requested and that, in the future, they will be replaced by others. Techno-insecurity creates job loss fear among employees, believing that new technology could lead to automation or could be replaced by people with better skills and abilities. (Garg et al., 2022)

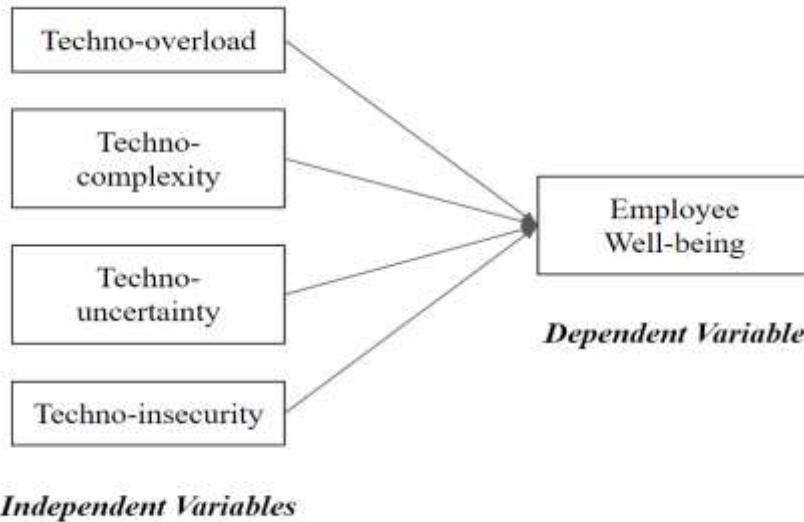
It is a valid concern for employees to not only be threatened by job loss to people with better technology skills but nowadays, employees are also threatened to have their jobs “stolen” by technology itself. The IR4.0 proves how jobs are becoming more automated, making certain jobs redundant to be done by humans because they can be done by technology instead. This may include robots and artificial intelligence (AI). Napolitano (2023) reported that AI was responsible for roughly 5% of jobs lost in the United States alone, while Helhoski (2023) reported that roughly two-thirds of current jobs are likely to be affected by some degree of AI automation.

Techno-insecurity and techno-uncertainty are quite interrelated. They share a common denominator of inducing fear in employees regarding technology (Hang et al., 2022). It is said that techno-insecurity has a negative influence on employee well-being because it causes a lot of stress. Therefore, Wang et al. (2022) states that there is a negative relationship between techno-insecurity and employee well-being. This is supported by Hang et al. (2022) who also found that there is a significant relationship between techno-insecurity and employee well-being. Hence, the relationship between techno-insecurity and employee well-being will be studied.

**H<sub>4</sub>:** There is a significant relationship between techno-insecurity and employee well-being.

Therefore, the research framework adopted in this research, as illustrated in Figure 1, revolves around technology that creates stress as technostress creators that may influence employee well-being (Ramesh et al. (2021). In line with several past literatures, there are four common technostress creators, namely, techno-overload, techno-complexity, techno-uncertainty and techno-insecurity (Bondanini et al., 2020; Korzynski et al., 2020; Wang et al., 2020).

**Figure 1: Conceptual Framework of the research**



Source: Wang, Ding, and Kong (2022)

### 3. Research Methodology

This research was conducted from a positivist paradigm perspective that assumes that reality exists out there and is observable, stable, and measurable (Merriam, 2009). In line with that perspective, this cross-sectional correlational research was conducted in line with the objective of this study, which is to determine the relationship between the four dimensions of technostress (i.e. techno-overload, techno-complexity, techno-uncertainty, and techno-insecurity) and employee well-being.

The population of the study was Generation Z employees (those born between 1998 and 2002 in Malaysia), educated and employed in Malaysia. The researchers distributed online survey questionnaires via Google Forms through a social networking platform that is primarily used by Generation Z such as LinkedIn. A total of 135 respondents participated in the research. The research instruments used in the study to measure the independent variables (i.e. technostress) were adopted from Wang et al. (2022) while measurements for the dependent variable (i.e. employee well-being) were adopted from Rurkkhum (2023). Items used in this study are in line with the research framework as Figure 1.

### 4. Results

This section presents the results of the study which includes the background of respondents, descriptive analysis of the variables, and relationship between the variables.

**Backgrounds of Respondents:** During the data collection, the researchers took steps to ensure all respondents fulfilled the predetermined criteria i.e. belong to the Generation Z age group, born, educated, and currently employed in Malaysia. From the background information of the respondents, all of them are currently employed. Out of 135 respondents, 11 of them (8.1%) are working in an Information Technology (IT) related job and 124 of them (91.1%) are working in other than IT-related jobs. However, all the respondents are using

technology in the form of applications or software in their jobs. This indicates that the questionnaire of the research, which is about technostress, is relevant as they are technology users. Details of the respondents' background are summarized in Table 1.

**Table 1: Demographics Analysis**

Demographic	Item	N	N%
Highest level of education	SPM & other certificates	10	7.4%
	Diploma in IT	1	0.7%
	Diploma in other than IT	12	8.9%
	Degree in IT	14	10.4%
	Degree in other than IT	79	58.5%
	Postgraduate in IT	2	1.5%
	Postgraduate in other than IT	17	12.6%
Current employment sector	IT	11	8.1%
	Other than IT	124	91.9%
Frequency of using applications/software	Infrequent	28	20.7%
	Slightly frequent	17	12.6%
	Frequent	40	29.6%
	Very frequent	50	37.0%

Source: Authors own work

**Descriptive Analysis of The Variables:** To explain the level of the respondents' technostress and their general state of well-being, the researchers conducted a descriptive analysis of the variables under study. As illustrated in Table 2, the scale for employee well-being ranged in high mean. This indicates that the respondents had a high level of employee well-being in their employment, as the mean was in the range of ( $M = 3.9022$ ,  $SD = 0.73662$ ). It was near the scale "4 = Agree". Meaning to say, most of them agreed regarding having a good employee well-being.

The scale for the independent variables was similarly ranged from "2 – disagree" to "3 – neutral". This indicates that the respondents were mostly neutral about-facing techno-overload, techno-uncertainty and techno-insecurity. Meanwhile, most of the respondents disagreed about facing techno-complexity which suggests that the respondents are adequate in their technological skills.

**Table 2: Descriptive analysis (n=135)**

VARIABLES	MEAN (M)	STANDARD DEVIATION (SD)
<b>Dependent Variable</b>		
Employee Well-being	3.9022	.73662
<b>Independent Variables</b>		
Techno-overload	3.1698	1.07533
Techno-complexity	2.9867	1.02919
Techno-uncertainty	3.6037	.90983
Techno-insecurity	3.0630	1.06886

Note: Dependent Variable: "1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree"  
Independent Variable: "1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree"

Source: Authors own work

**Association Between Technostress and Employee Well-Being:** To explain the association between the three dimensions of technostress (namely, techno-overload, techno-complexity, techno-uncertainty, and techno-insecurity) and employee well-being, the researchers conducted a Pearson Correlation Analysis of the variables under study. Correlations analysis looks at the relationship and describes the strength and direction



between two variables. In this research, the Pearson correlation coefficient ( $r$ ) was used to examine the relationship between technostress and employee well-being. According to Hair et al. (2010), the correlation coefficient  $r$  that is equal to or greater than 0.70 indicates a strong relationship between variables; if the  $r$  coefficient is between 0.30 and 0.69, the relationship is moderate; and if the  $r$  coefficient is less than 0.30, the relationship is considered to be weak.

This study's result indicated a positive and significant relationship between techno-uncertainty ( $r=0.232$ ,  $p<0.01$ ) and employee well-being. There is a positive and insignificant relationship between techno-overload ( $r=0.124$ ,  $p>0.01$ ), techno-complexity ( $r=0.360$ ,  $p>0.01$ ) and techno-insecurity ( $r=0.290$ ,  $p>0.01$ ) with employee well-being. This finding is illustrated in Table 3.

**Table 3: Pearson Correlation Analysis (n=135)**

	Employee Well-being	Techno-overload	Techno-complexity	Techno-uncertainty	Techno-insecurity
Employee Well-being	1				
Sig. (2-tailed)					
Techno-overload	.124	1			
Sig. (2-tailed)	.152				
Techno-complexity	0.36	.605**	1		
Sig. (2-tailed)	.678	<.001			
Techno-uncertainty	.232**	.450**	.398**	1	
Sig. (2-tailed)	.007	<.001	<.001		
Techno-insecurity	.029	.618**	.703**	.516**	1
Sig. (2-tailed)	.741	<.001	<.001	<.001	

\*\* Correlation is significant at the 0.01 level (2-tailed).

Source: Authors own work

**Relationship Between Technostress and Employee Well-Being:** To explain the relationship between the variables under study, the researchers conducted a Multiple Regression Analysis. The analysis was conducted to determine the relationship between four technostress creators (techno-overload, techno-complexity, techno-uncertainty and techno-insecurity) and explore which of the technostress creators have the most influence on employee well-being.

As illustrated in Table 4, the largest beta coefficient is techno-uncertainty ( $\beta .276$ ,  $p = .007$ ,  $p < 0.05$ ). However, the other technostress creators were not significantly ( $p > 0.05$ ) related to employee well-being. This concludes that only techno-uncertainty is related to employee well-being.

Table 4 also shows that the  $R^2$  value of 0.073 implies that all the independent variables (techno-overload, techno-complexity, techno-uncertainty and techno-insecurity) explained 7.3 percent of the variance ( $R = 0.217$ ) in the influence of technostress on employee well-being. Hence, the regression model is significant in explaining relationships between the variables.

**Table 4: Multiple linear regression**

Independent Variables	Standardized Coefficients	t	Sig.
Beta ( $\beta$ )			
Constant		11.926	<.001
Techno-overload	.121	1.055	.293
Techno-complexity	-.029	-.230	.819
Techno-uncertainty	.276	2.746	.007
Techno-insecurity	-.168	-1.274	.205
R	.271 <sup>a</sup>		
R Square ( $R^2$ )	0.073		
F	2.570		
Sig. of F Value	.041 <sup>b</sup>		

Source: Authors own work

## Discussion

The study has found that there is a significant relationship between techno-uncertainty and employee well-being. Based on the results and findings of this study, it is found that techno-uncertainty is the only variable that has a significant relationship with employee well-being. Furthermore, techno-uncertainty is also the technostress creator that has the most influence on employee well-being. It can be said that Generation Z significantly faces techno-uncertainty where they are stressed due to the constant changes in technology in a workplace setting.

Generation Z's struggle in facing uncertainty can be attributed to major world changes that have occurred throughout their prime years. They have grown up in a time of turbulence and instability mixed with hope for a better future (Tjiptono et al., 2020) which can be assumed as the reason why Generation Z faces difficulty with uncertain things. The greatest example would be the COVID-19 pandemic which ties in with a sudden skyrocket in reliance on technology, particularly due to online classes and virtual internships as Generation Z was still studying at the time. Techno-uncertainty brings a lot of stress to Generation Z which then influences their well-being. Thus, it is important to consider what can be done to ensure that Generation Z is well-prepared for technological advancements and changes in the workplace.

This finding is in line with the literature on Generation Z, that despite being known as the first generation of true digital natives who grew up alongside the advancement of technology, Generation Z has been found to face the phenomenon of technostress (Prior et al., 2023). Lee (2023) attributes the technostress in Generation Z to be caused by rapidly changing digital technologies. Meanwhile, Generation Z's constant technology usage especially on their smartphones has been deemed as a cause of technostress, followed by an overload of social media usage (James et al., 2023). The overload of technology usage heightened during the COVID-19 pandemic, and it led to negative effects on the psychological well-being of Generation Z which is considered as a manifestation of technostress (Wu et al., 2021). The study further states that although the pandemic witnessed an increase in technology usage from Generation Z, they also demanded a digital detox due to the technostress that they were facing because of the lockdown.

This finding that techno-uncertainty is negatively related to employee well-being is also in line with the literature. Techno-uncertainty is related to new ICT developments (Korzynski et al., 2020). According to Wang et al. (2022), techno-uncertainty is feelings of uncertainty due to the pace at which software, hardware and computer networks are constantly changing or evolving. This uncertainty may cause an employee to feel restless as well as feel a lack of stability; they might feel that even if they master a certain technology, there may be advancements in the future that would have to cause them to start from square one all over again. Techno-uncertainty is said to occur when users feel unsettled due to frequent organization-wide upgrades and accompanying software and hardware changes. (Ramesh et al., 2021) Furthermore, techno-uncertainty is also similarly defined as the constant changes in computer hardware and software (El Kiassi & Jahidi, 2023).

Bondanini et al. (2020) explain techno-uncertainty as ambiguity around expectations related to changes, particularly about technology. Employees may not know what to expect from time to time, especially when technology happens to sprout a new advancement or evolution without a warning. This is supported by Hang et al. (2022) explanation of techno-uncertainty where employees feel organizations move from one cycle to another with reduced time between systems upgrades, leaving them unsettled. Shadbad and Biros (2020) further support this by stating: "Techno-uncertainty relates to users who feel uncertain due to the constant change/upgrades of IT."

Techno-uncertainty involves the continuous changes or upgrades in ICTs that cause ambiguity and stress and add to the daily job demands so that individuals who do not possess the necessary technological skills experience an imbalance between the technological demands and the skills resources that they possess (Harunavamwe & Kanengoni, 2023). This indicates that techno-uncertainty may be a more stressful situation for employees who do not originate from an ICT-centric background or have any technology-centric skills in the first place.

Based on Wang et al. (2022), there is a negative relationship between techno-uncertainty and employee well-being. Uncertainty is a feeling that can cause restlessness, anxiety or the desire to give up before a bad thing

happens. Techno-uncertainty may induce fear in employees about what to expect and if further advancements or changes to technology can affect them or their jobs (Hang et al., 2022). This fear will affect the employee's mental state as they are conditioned to feel fear of the unknown which will then cause their well-being to deteriorate. Hang et al. (2022) also found that techno-uncertainty has a significant relationship with employee well-being.

While the other independent variables of the study, namely, techno-overload, techno-complexity, and techno-insecurity (Bondanini et al., 2020; Korzynski et al., 2020; Wang et al., 2020) were found in this study to be not significant in contributing to employee well-being. This finding is in line with findings reported from an exploratorily qualitative study conducted by (Prior et al., 2023). In their study, Prior et al. (2023) collected qualitative data to explore how Generation Z workers experienced technostress and they found that there are two technostress creators, namely, privacy concerns (i.e. prone tracking, badge monitoring, and surveillance cameras) and technology hassle (i.e. confusing updates, outdated software, and inadequate support). The findings reported by Prior et al. (2023) about technology hassles are in line with the dimension of techno-uncertainty as reported by Wang et al. (2022). However, privacy concerns as reported by Prior et al. (2023) are not being reported by Wang et al. (2022). Since research conducted by Prior et al. (2023) was meant to explore how Generation Z workers experienced technostress, thus it could be concluded that Generation Z workers may have experienced technostress a little differently due to their digital native status (Lee, 2023).

## 5. Managerial Implications and Recommendations

The managerial implication can be drawn from this study is mainly about the phenomena of technostress at the workplace. Firstly, employees whose well-being is not well taken care of may face higher risks of mental health problems. The World Health Organization (2022) supports this in a study where it is found that poor working environments - including excessive workload and job insecurity which are two of the independent variables - pose a risk to the mental health of employees. What makes the issue more concerning is that what affects an employee at the workplace can sometimes be brought back home which causes the employees' well-being to deteriorate even further.

Secondly, the organization would face low productivity among its employees. Aside from mental health, an employee's physical health can also be impacted because of poor well-being. For example, dealing with technostress may lead an employee to spend more time on the computer or the internet. This may physically strain the employee's eyes, and back or cause a headache. When employees are in a poor state of health, they would be unable to deliver their optimum performance at work. There may also be an increase in the rate of absenteeism as well as medical leave. Employees are the backbone of an organization's operations and without the employees, the organization would not be able to achieve its goals and targets.

Lastly, it will harm the community or society. Employees are an integral part of the community as they drive business and income. If employees have poor well-being, the whole community will have to face the consequences of having unhealthy, ill members. Aside from the rise of mental and physical health issues that will affect social circles as well as families, employees who have poor well-being may be unable to lead their children's development which would in turn affect the future workforce. On the other hand, employees with good well-being would be able to give back to their community and raise their children to become future leaders in the workforce one day.

Therefore, it is recommended that, firstly, the implementation of technology-oriented training programs. Regardless of age, generation and background, training is always required to keep up with changes in the working world. For Generation Z who faces techno-uncertainty, organizations should implement technology-oriented training programs to provide them with proficient technology skills and to prepare for any future advancements. This way, Generation Z would feel adequate in their technology skills and would be ready to face any unexpected changes in terms of technology usage. A study found that Generation Z's preference for training is assignments or experimental training (Hasanah & Saragih, 2023). Thus, organizations can implement hands-on training for Generation Z employees to equip them with the necessary technology skills.

Secondly, mentoring is a culture that should be fostered in the workplace. Especially considering that Generation Z is still relatively new in the working world, organizations should foster a culture where Generation Z can reach out to more tech-savvy colleagues who can assist them in using more advanced technology. Although Generation Z is known to be the tech-savvy generation, they might find the usage of technology in the workplace to be different compared to usage for leisure or fun and would require assistance from their seniors. This is supported by a study that has found that Generation Z is interested in having mentor support in the workplace. (Pietroń--Pyszczek & Borowska, 2022). Therefore, senior colleagues should play a role in extending a helping hand to Generation Z.

Lastly, it is recommended to establish clear communication channels when there are any changes or updates to the organization's technology. Generation Z is accustomed to having information at their fingertips and being in constant communication through digital media (Bredbenner, 2020). This suggests that the techno-uncertainty that Generation Z faces can be worsened if the changes happen suddenly without any prior notice. Generation Z is a generation that prefers to stay in the know at all times rather than having to abruptly adapt to changes. Thus, communicating these changes would allow Generation Z employees to prepare themselves and understand which areas of the technology change they would need assistance with.

### **Conclusion**

The impact of technology-induced stress (technostress) is a rising matter whereby the advancements in technology have been shown to influence the well-being of employees. Yet, there are not enough studies which identify the extent of the influence of technostress on employee well-being (Wang et al., 2022). Therefore, this study has examined the influence of technostress on employee well-being. Employee well-being can be simply described as a positive experience that an employee feels related to their work or in the workplace. However, it holds more significance than just to the employee and may determine the health and output of an organization. In a healthy organization, performance (profit and productivity) as well as employee well-being can not only co-exist but can be mutually reinforced (Singh & Jha, 2021). Now that Generation Z has recently started entering the workforce, organizations need to consider the unique approaches to enhancing Generation Z employee well-being, considering their generational differences.

It is predicted that Generation Z is most likely to experience technostress problems because they live in a digital world (Putriani & Apriani, 2022). It raises a curiosity as to whether technostress would impact Generation Z's well-being as employees in the workforce. Especially considering that Generation Z is the generation of digital natives, it would be beneficial to understand if technology poses a challenge for them in a working context. The rapid growth in technology is a foundational catalyst for the change in values and behavior among Generation Z, compared to those of the previous generations (Pichler et al., 2021).

There is a scarcity of literature that provides sufficient insights into the relationship between technostress and employee well-being (Wang et al., 2022). Furthermore, Yener et al. (2020) question that previous literature on technostress causing harm to employees at the workplace contains unanswered questions and inconclusive answers. This indicates that the existing research does not provide enough clarity on the relationship between technostress and employee well-being, particularly among Generation Z employees in Malaysia. Therefore, the purpose of this study is to examine which of the technostress creators (techno-overload, techno-complexity, techno-uncertainty, techno-insecurity) have the most influence on employee well-being, among Generation Z employees in Malaysia.

This research found that only techno-uncertainty is related to employee well-being. However, the other technostress creators (techno-overload, techno-complexity, and techno-insecurity) were not significantly related to the Generation Z employee well-being under study. This finding is in line with the literature on Generation Z, that despite being known as the first generation of true digital natives who grew up alongside the advancement of technology, Generation Z has been found to face the phenomenon of technostress (Prior et al., 2023). This finding that techno-uncertainty is negatively related to employee well-being is also in line with the literature. Techno-uncertainty is related to new ICT developments (Korzynski et al., 2020). According to Wang et al. (2022), techno-uncertainty is feelings of uncertainty due to the pace at which software, hardware and computer networks are constantly changing or evolving.

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