





Technostress Creators in the Workplace: A Literature Review and Future Research Needs in Accounting Education

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ABSTRACT

In these modern times, technology has changed almost all aspect of our lives, regardless of personal life, business or education. Technology has transformed the way people work since it is a tool for making people's working and personal lives more efficient. However, there are some people who are unable to adjust to new computer technologies and are referred to as having technostress, a modern sickness of adaptability that can present itself as an inability to accept computer technology. Regrettably, little attention has been paid to the issue of technostress and professional experience. Techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty were the causes. Workplace technology is frequently intended to increase productivity and improve organizational performance; yet, little consideration has been made to the impact on employees. As a result of the extensive use of ICT in the workplace and everyday life, technostress is becoming a significant issue. Subsequently, as a result of global preventive efforts used to stop the virus's spread, technostress became more severe during the COVID-19 pandemic. Thus, this paper intends to review the impact of technostress creators on employees (techno-overload, techno-complexity, techno-insecurity, techno-insecurity, and techno-uncertainty) and provide future insights for the future research in this area, specifically from the accounting profession and education perspectives. This review paper discovered mixed evidences regarding the consequences of technostress creators (techno-overload, techno-invasion, techno-insecurity, techno-complexity, and techno-uncertainty) in the workplace

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based on the chosen papers.

Contribution/Originality: This study adds to the body of knowledge and helps us learn more about the technostress creators in the workplace. Besides that, this study also shows how much more research needs to be done on this issue, especially in accounting education.

1. Introduction

Technology has, in these modern times, affected almost all aspect of our lives, regardless of personal life, business and education. The rate at which technology has evolved throughout the years has been virtually incomprehensible. Technology has transformed the way people work because it is a tool for improving people's working and personal lives and making them more efficient (Fernández-Batanero et al., 2021). Almost every facet of how workplace has been transformed by technology. The usage of information technology (IT) in the workplace may have transformed the way business is carried out such that it is now completely different from before (Ibrahim & Yusoff, 2015). For example, information and communication technology (ICT) has affected the way of communication in workplace. Communication is immediate. According to Wang et al. (2008), today's omnipresent ICT allow us to connect almost anywhere, at any time. That means, workplace teams can collaborate globally without regard to geographic location. Thus, Internet, advanced wireless technology, and mobile communications networks are becoming increasingly important in many aspects of business and daily life. Currently, both public and private firms are increasing their use of IT in their business operations (De Haes et al., 2013; Garicano & Heaton, 2010). However, this technological expansion involves problems adjusting employees to the environment and the technology resources they use (Marchiori et al., 2019). Moreover, in order to keep up with the rapid advancement of new ICTs, employees must continuously update their technical skills while also suffering tension from a more complex system and higher productivity demands. Apparently, technologies are also responsible for changes in people's lives that aren't always acceptable because it disrupts personal and interpersonal relationships and even have a negative impact on health. The use of digital technologies in modern workplaces causes stress, which is generally referred to as IT-driven stress or simply technology stress, and has frequently negative consequences for employees (Benlian, 2020). This issue, known as technostress, can have severe negative impacts, such as diminished productivity and dissatisfaction with employment (Tarafdar et al., 2007). Nowadays, technostress is a growing concern due to the widespread use of ICT in the workplace and everyday life. Ibrahim and Yusoff (2015) argued that due to rapid technological advances in computer operating systems and software, stress caused by using those technologies is becoming more prevalent. The constant changes in technology make individuals insecure and fearful of being left behind by workplace technology. Undeniable, although ICT has made many work duties easier, various clinical problems associated with its use, such as technostress, have also evolved (La Torre et al., 2020). Based on prior study, Tarafdar et al. (2007) revealed that technostress is formed by five elements: techno-overload, techno-invasion, techno-insecurity, techno-complexity, and techno-uncertainty.

Brod (1984), as cited in Sarabadani et al. (2020) and Li and Wang (2021), the term technostress is defined as people's inability to use technology in a healthy manner. Technostress is a state of arousal observed in people who depend primarily on

technology for their employment, which happens when they find their work stimulating, yet believe that they do not have the essential technological skills (Arnetz & Wiholm, 1997). Whereas Wang et al. (2008) defined technostress as the adverse effect of technological use on thinking, attitudes and behaviour. In the workplace environment, technostress is triggered by individuals' attempts and struggles to deal with continually evolving ICTs and the changing physical, social, and cognitive requirements associated with their use (Tarafdar et al., 2007). According to Kim and Lee (2021), technostress is stress caused by an abundance of information and the inability to process it for people who are good at information technology. It is also psychological pressure caused by the difficulty of adapting to new information technology, which is a symptom experienced by people who work in information technology.

1.1. Problem of the study

Technostress is an increasingly important issue, both in the workplace and in private life, because of the widespread use of ICT (La Torre et al., 2020). Regrettably, technostress is an issue that has received little attention (Brooks & Califf, 2017; Tarafdar et al., 2010). According to past studies, there are several factors that contribute to technostress. The factors that cause employees to suffer technostress are referred as the technostress creators (Krishnan, 2017). There were five creators of technostress suggested by Tarafdar et al. (2007). The factors were techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty. Techno-overload occurs when users are unable to determine whether the information, they are receiving is truly valuable. Users use more time and effort on information processing because they communicate more than necessary and receive more information than they can effectively process. Users are also overloaded with more information than they can adequately process and apply. The term techno-invasion refers to a situation in which users believe they will never be free of technology. They believe that technology has invaded their life. Furthermore, because technology is so complex, users must devote more effort to learning how to use it. Stress arises when people see the range of applications and functions as daunting, and they do not comprehend how and why they must use them. Furthermore, continuous technological changes cause users to feel overwhelmed and dissatisfied with the systems. Techno-uncertainty is the fear that might arise as a result of the rapid turnover of technology and the unpredictability of future outcomes. Techno-insecurity occurs when a user is concerned about losing their work to colleagues who have superior technological knowledge and skills.

Nowadays, businesses have been utilizing new ICTs as a strategic means to achieve aspects related to productivity, such as meeting organizational goals, innovation, communication, and anticipating environmental change (Kim & Lee, 2021). Certainly, educational institutions have also evolved over time within a changing environment, particularly in the context of developments in technology and industrial requirements. While ICT use has significantly increased productivity, creativity, and an organization's efficiency, its negative effects on companies and employees should not be overlooked (Gabr et al., 2021). Consistent with Johnson et al. (2020), workplace technology is often meant to promote efficiency and improve organizational performance, however, little thought was given to the impact on employees. Based on Rowden and Conine (2005), as a result of changes in organizational operations, employee duties, and roles caused by ICTs, organizational culture has emerged as a critical source of stress for today's workforce. Stress and technology were conceptualized as distinct, hence the stress

caused by and associated with the technology in use was rarely investigated (Califf & Brooks, 2020).

Unexpectedly, at the beginning of 2020, COVID-19 became a pandemic affecting many countries throughout the world. The pandemic of Covid-19 affected a wide range of sectors. To combat the COVID-19 pandemic, businesses and education institutions are applying the "Work from Home" mode. In the current situation, employees can work from home using digital platforms. Following this pandemic, organizational practices have altered drastically, and most activities are carried out via mobile and other digital platforms (Kaushik & Guleria, 2020). Therefore, technostress has become more severe during the COVID-19 pandemic as a result of global preventive measures used to control the virus's spread (Gabr et al., 2021). Remote working is not a new phenomenon, but the extensive use of it as a result of the COVID-19 pandemic is. Employees tend to be exposed to an increased risk of technological stress regularly, with changed work patterns, increasing demands for work performance, ambiguities and the resultant role overload, outside of health crises. However, there is a scarcity of studies relating to technostress and professional experience (Marchiori et al., 2019). Thus, based on the phenomena mentioned above and gap research, this paper will review this paper aims to review the technostress creators (techno-overload, techno-complexity, techno-insecurity, techno-insecurity, and techno-uncertainty) impact on employees and provide insights for future research in this area, specifically from the accounting profession and education perspectives.

1.2. Study Objectives

This review paper has the following research objectives:

- i. To understanding the effects of technostress creators (techno-overload, techno-invasion, techno-insecurity, techno-complexity, and techno-uncertainty) in the workplace.
- ii. To provide accounting-related insights for future research in this area.

2. Methodology

Following McMillan (2000), content analysis was used in this study because it allows for the evaluation of publishing piles, the analysis of processes, the interpretation of articles, and the calculation of frequency. This review paper consists of three (3) steps.

Step 1: General database search: A number of databases were searched to ensure that relevant studies were obtained, and a total of 14 publications were chosen. Previous research on technostress, specifically on technostress creators, was obtained from electronic databases such as Springer, ResearchGate, Theseus, ScienceDirect, MDPI, Taylor & Francis Online, and ProQuest. Keywords searched in electronic databases included "technostress" OR "techno-stress" OR " technostress creators" OR "technology stress" AND "techno-stressors."

Step 2 – Focused searches: Pertaining to the year of publication of the articles, at the beginning of this paper, the aim was to review only papers published within the last five years. This paper, however, extended the search timeframe, as the number of articles identified was still limited. As one of the search criteria, no limit was provided for the year of publication. Journal papers were chosen from 2007 to 2020 because of the limited number of articles on this issue. The articles were selected using the following

criteria: articles accessed and found through an electronic database, articles must be in English, and a specific focus on technostress. An article containing technostress but without technostress creators or techno-stressors has been removed.

Step 3 – Analysis: All of the publications were reviewed based on the results and findings of the relationship between technostress creators and workplace technostress.

3. Results

According to Boyer-Davis (2019), have yet to evaluate the effect of technostress, but the consequences are almost certainly a concern. It is said that five factors cause technostress: techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty (Marchiori et al., 2019; Ragu-Nathan et al., 2008). This paper reviewed studies on these technostress creators and their potential impact on employees in the workplace. The majority of the prior studies chosen used a survey instrument to collect data. Table 1 below shows the sample that previous studies used to examine technostress, specifically on the topic of technostress creators in the workplace, based on the selected articles.

Table 1: A comparison of the sample to previous studies

No.	Authors	Methodology	Sample
1.	Tarafdar et al. (2007)	Survey	Data was gathered from two public sector institutions in the United States, both of which used client-server PC-based networked systems. There was a total of 264 questionnaires selected.
2.	Wang et al. (2008)	Survey	The study used 951 usable questionnaires. Nearly 15% of the 951 respondents are supervisors or senior management, with the remainder being professional staff; roughly 34.3% were female, almost 37% were under the age of 26, 48% were between the ages of 26 and 35 the remainder are older than 36.
3.	Ibrahim and Yusoff (2015)	Qualitative	Seven HRMIS specialists from the northern state governments were selected and interviewed. They were chosen based on experience and the job scope, which focused on HRMIS installation.
4.	Marchiori et al. (2018)	Survey	The final sample included 927 surveys completed by 14 different Brazilian public institutions spread across the country and heavily reliant on IT for their core business processes.
5.	Boyer-Davis (2019)	Survey	The survey was distributed electronically to 190 accounting professionals.
6.	Boyer-Davis (2020)	Survey	A study of 307 college and university lecturers, mostly from business disciplines.
7.	Sarabadani et al. (2020)	Survey	A total of 188 valid responses. The study sample includes the employees of organizations who often utilize technology in their jobs, work full-time, and from different industries.
8.	Christian et al. (2020)	Survey	The study sample consisted of lecturers from Jakarta's private higher education institutions. The total number of samples in this study was 228.

9.	Califf and Brooks (2020)	Survey	The final data set included 416 K-12 teachers (75% female) ranging in age from 24 to 70. This sample is relevant of gender makeup of educators in the United States.
10.	Zainun et al. (2020)	Survey	The study involved 225 administrative staff from public higher education institutions in Peninsular Malaysia's Northern Region.
11.	Li and Wang (2021)	Survey	There were 312 university lecturers who responded provided their informed consent, the majority of them were between the ages of 31 and 50.
12.	Brennan (2021)	Mixed method	The study was based on surveys completed by 30 teachers and follow-up interviews with 11 of them.
13.	Gabr et al. (2021)	Survey	There were 142 people in this study. Staff members affiliated with practical colleges and lecturers or higher were included in the study.
14.	Kim and Lee (2021)	Survey	The survey was segregated into venture and non-venture companies to assess the impact of new technology on techno-stress: 150 venture companies and 550 non-venture companies.

3.1. The effects of technostress creators in the workplace.

Based on prior studies, in terms of work performance, [Li and Wang \(2021\)](#) studied technostress inhibitors and creators, and their effects on the work performance of university lecturers in higher education. This review paper views technostress inhibitors as readily available facilitation resources, for example, knowledge and support that can reduce the negative consequences of technostress creators while improving people's productivity and performance. It was found that involvement facilitation in particular and technical assistance provision may have a significant curbing effect on three technostress creators (techno-overload, techno-complexity, and techno-insecurity). As one technostress inhibitor, literacy facilitation may, on the other hand, stimulate the development of technostress creators. Literacy facilitation refers to ICT-related professional development programs and knowledge sharing workshops. In terms of the impact of technostress on university educators' work performance, techno-complexity and techno-insecurity had a significant negative influence. Nonetheless, one technostress creator's techno-overload was positively associated with their work performance. Meanwhile, literacy facilitation and involvement facilitation have a positive impact on the work performance of university lecturers. Furthermore, a comparison of young and senior educators revealed that literacy facilitation may have a greater impact on two technostress creators (techno-overload and techno-complexity) for senior educators than for young educators. Despite this, no gender differences in technostress were seen among university educators. In addition, according to the findings of [Christian et al. \(2020\)](#), the techno-complexity factor affects lecturers' online teaching performance during the Covid-19 outbreak. Other variables, such as techno-overload, techno-insecurity, and techno-uncertainty, on the other hand, had no impact on work performance. Based on these prior studies' findings, this review paper contends that technology creators can influence employee performance.

Whereas, from the perspective of the level of techno-stress experienced by employees in the workplace, [Wang et al. \(2008\)](#) revealed that based on the five components of technostress, which are techno-overload, techno-invasion, techno-complexity, techno-

insecurity, and techno-uncertainty, the results showed employees in more centralized firms often report more technostress. Furthermore, the overall technostress level is highest in businesses that are both highly centralized and very innovative. Technostress, on the other hand, is lowest in firms with limited centralization and low innovation. Further, refer to [Ibrahim and Yusoff \(2015\)](#) study, which investigated the factors that contribute to technostress toward electronic human resource management (EHRM) in Malaysian government agencies. Three key user characteristics were found based on semi-structured interviews with human resource management information system (HRMIS) specialists: attitude, technology readiness, and willingness to change. According to HRMIS experts, all three of these characteristics were related to technostress components: techno-overload, techno-invasion, techno-complexity, techno-uncertainty, and techno-insecurity. Four HRMIS experts stated that user technology readiness is critical to the effective adoption of HRMIS. Six HRMIS specialists noted that users who are unwilling to change and support the deployment of HRMIS will have a detrimental impact on themselves and others, particularly in terms of increasing the experience of technostress. This review paper noted that employees who deal with technology innovation or advanced online systems tend to experience greater technostress at their workplace, which will affect their readiness or willingness to change.

Apart from that, [Marchiori et al. \(2019\)](#) mentioned that, according to their findings, older workers or those with more ample professional experience reported more significant challenges with the increase in technological complexity for task execution (techno-complexity). Women experienced higher levels of techno-complexity and techno-uncertainty, whereas men reported more significant impacts from techno-overload and techno-invasion. The study found no association was found between individuals' educational level and the four technostress generating creators (techno-overload, techno-invasion, techno-complexity, and techno-uncertainty) in the study. Based on the findings of a previous study, this review paper discovered that demographic information such as age, gender, and education among employees results in varying levels of technostress, therefore this matter cannot be ignored.

In the study of [Boyer-Davis \(2019\)](#), it was revealed that accounting managers perceived greater levels of techno-invasion, techno-complexity, and techno-insecurity than non-managers. However, accounting managers and accounting non-managers experienced non-significant differences in technological overload and uncertainty. In addition, [Boyer-Davis \(2020\)](#) reported that after the coronavirus pandemic spread and mandatory stay-at-home orders were issued across the country, faculty reported increasing experiences of techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty. Because employees continued to work remotely following the COVID-19 outbreak, this review paper believed that employees were more likely to experience technostress, which would affect employees' routine and activities, resulting in poor employee performance. As a result, this pandemic provides an opportunity for future research into the topic of technostress.

Moreover, within the context of a commitment to change, [Zainun et al. \(2020\)](#) discussed that techno-invasion and techno-insecurity were found to be adversely related to commitment to change, however techno-uncertainty was found to be positively associated with commitment to change. The reason for this is that when employees are uncertain about technology, they are more likely to seek high quality internal communication since this type of information channel provides clarity for them, which ultimately strengthens their commitment to change. For that reason, internal

communication moderated the association between techno-uncertainty and commitment to change. This paper contends that effective internal communication has the potential to mitigate the effects of technostress. In addition, as reported by [Brennan \(2021\)](#), techno-overload caused by changes in teaching methods was the primary cause of technostress among teachers. In this study, IT support provision was discovered to be the most prevalent inhibitor among teachers. However, it has been discovered that involvement facilitation is an efficient inhibitor of technostress. Finally, the leadership team has taken positive initiatives to reduce teacher technostress through resource and material sharing, IT support services, and decisive leadership. Thus, this review paper found that technostress inhibitors, such as organizational and technical support for employees, are important in reducing the effects of technostress.

From viewpoints on emotions and health of individuals at workplace, based on the findings of [Sarabadani et al. \(2020\)](#), techno-overload and techno-complexity are significantly related to negative emotions. In addition, while techno-complexity is correlated with negative emotions, techno-uncertainty is related with positive emotions. Employees' uncertainty about new technology provides new features that employees look forward to working with and that may give them positive emotions such as happiness and pleasure. Other technostress creators, such as techno-invasion and techno-insecurity, have a less clear impact on individuals' emotions. Furthermore, as claimed by [Califf and Brooks \(2020\)](#), the results showed that techno-insecurity, techno-invasion, and techno-overload significantly boost burnout, but that literacy facilitation can minimize the negative effects of techno-complexity, techno-insecurity, techno-invasion, and burnout. Then, burnout also has a significant positive influence on turnover intention. Pursuant to findings by [Gabr et al. \(2021\)](#), female participants, lecturers or higher positions, and participants without strong WiFi or modern computers were significantly more related to techno-overload, techno-invasion, and techno-complexity than males or participants who were teaching assistants or higher positions. Participants in rural locations had a much greater level of techno-overload and techno-complexity than individuals in urban areas, whereas those in practical institutions had a significantly higher level of techno-invasion than participants in theoretical colleges. Participants who did not participate in training showed a considerably higher level of techno-overload, techno-invasion, and techno-complexity than those who did. All three elements of the technostress scale show a very significant positive relationship with age. Participants with higher scores on the technostress subscales had greater blood cortisol levels. Based on prior studies, this review paper observes that stress influences an individual's health, work, and quality of life. That is why the issue of technostress is so concerning. And it was found that age, employment positions, gender, and workplace environment will influence the level of technostress experienced by employees.

Referring to the perspective of productivity, [Tarafdar et al. \(2007\)](#) stated that techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty were all shown to be significant, demonstrating an inverse relationship between technostress and productivity. Likewise, findings from the latest study, [Kim and Lee \(2021\)](#), revealed that techno-overload, techno-invasion, techno-insecurity, and techno-uncertainty all have a positive correlation with counterproductive work behaviour (CWB) and innovation resistance. Techno-overload, techno-invasion, techno-insecurity, and techno-uncertainty caused by new technologies exacerbate CWB for a short period of time, resulting in sabotage and employee victims and lower product quality. Then, in the long run, the introduction of new technologies to ensure competitiveness can have a detrimental impact on productivity. However, self-efficacy and technical support both

have a moderating effect on techno-stress and counter-productivity by interacting with techno-overload, techno-insecurity, and techno-uncertainty. Unquestionably, the productivity of employees is an essential factor in ensuring the proper functioning and success of any organization. This review paper views the importance of managing technostress issues among employees to achieve high rates of productivity. Thus, the issue of employee productivity necessitates research into the causes and solutions of technostress.

3.2. Accounting-related insights for future research in this area.

In this era of technology, the role of accountants will be transformed. Accountants must be aware of the development of emerging information technology and seek to improve their capabilities through the advancement of technology in order to thrive in this new technology era. The fourth Industrial Revolution (also known as Industry 4.0) is expected to be the most potent driver of innovation over the next few decades, triggering the next wave of innovation. For example, as technology evolves, the accounting software and systems keep changing and upgrading to ensure the business accounting process runs smoothly and efficiently. Therefore, in order to survive computerization and adapt to the job of a modern accountant, traditional accountants must acquire a new set of skills. The accounting professional's job description has changed and will continue to change as technology evolves. For that reason, the accounting profession will continue to play an important role in the adoption and implementation of new workplace technology. Thus, the profession must prepare not just for the wave of change, but also for the storm of technostress that may ensue. Thus, the relevance of studying technostress in the accounting profession is highlighted in this review paper. Inarguable, there are numerous benefits to using IT in the accounting profession, including increased efficiency, greater accuracy, faster processing, better reporting, and the availability of more software tools and platforms. Conforming to [Wahyuni \(2020\)](#), the deployment of digital data technologies in the industry, assists accountants in carrying out their work in the Industrial 4.0 era. In line with this, accounting university educators also must keep up with technology developments and the current digital transformation in order to ensure accounting graduates are ready for the labour market and future industrial requirements ([Dangi & Saat, 2018](#)). Therefore, examining technostress faced by university lecturers and finding solutions to it is crucial not just to sustaining university teachers' well-being, but also to contributing to the achievement of higher education's digitalization goals ([Li & Wang, 2021](#)).

Recently, in the year 2020, due to the COVID-19 pandemic, many measures were implemented to minimize its spread, the most notable of which was remote home working. Many organizations were obliged to adopt new digital technology and social media apps as key ways of communication and cooperation. Many workers and businesses were being unprepared by the abrupt transformation, and it is likely that workers' technology-related stress and exhaustion worsened ([Oksanen et al., 2021](#)). For example, the uncertainty of the end of Covid-19 allows for the formation of stress in teaching, particularly when using online teaching media or applications ([Christian et al., 2020](#)). A new awareness must be brought to light regarding technostress in the accounting profession, because accounting is always regarded as both practical and complex. It necessitates methodical work and thorough research. Therefore, this review paper agrees with [Boyer-Davis \(2019\)](#), that accounting is a great field to study technostress. This is due to the convergence of the requirements to adopt new technologies while concurrently acquiring a wide range of updated skills, which sets the

stage for unprecedented levels of technostress within the accounting profession. Therefore, this review paper urges future research to investigate the effects of technostress creators (techno-overload, techno-invasion, techno-insecurity, techno-complexity, and techno-uncertainty) on the accounting profession and education.

4. Conclusion

Technostress is a new problem that has emerged in recent decades as a result of the rising computerization and digitalization (La Torre et al., 2020). It is crucial to highlight that ICT use can create, or be associated with, technostress. Workplace pressures that can cause technostress are referred to as techno-stressors or technostress creators. The study's goal was to review the impact of technostress creators (techno-overload, techno-complexity, techno-insecurity, techno-insecurity, and techno-uncertainty) on employees. Based on the selected articles, this review paper found that there were mixed evidences regarding the effects of technostress creators (techno-overload, techno-invasion, techno-insecurity, techno-complexity, and techno-uncertainty) in the workplace. Employees at all levels of the organization suffer some level of stress when technology at work. Moreover, employees reported much greater technostress during the COVID-19 crisis than prior to the virus's existence. Thus, the COVID-19 crisis may have taught many organizations a valuable lesson about the wide range of skills required to use digital technologies to overcome the issue of technology.

Prior studies have been limited due to technostress, which has gotten minimal attention. The other aim of this review paper is to make recommendations for further research in this area, specifically from the accounting profession and education perspectives. Accounting is often seen as complex and practical, which means that a better understanding about technostress in the field is important. Therefore, this review paper therefore agrees that accounting is an area in which great to study technostress.

There are a few limitations to this review paper. The first limitation is that it did not explore the impact of other factors on individuals in the workplace. Next, it would be preferable if this study could go over the issue of technostress and, specifically, technostress creators in specific fields, such as accountancy.

Despite these limitations, the findings of this review may have implications for previous studies, specifically the use of technologies in the workplace. Not only that, the review's results could be used to improve the usage of technology in the workplace. Furthermore, it may be beneficial for organizations to address the impact of technostress creators on the workplace from several viewpoints.

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