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REVIEW ARTICLE

A Literature Review on Technostress Creators and Accounting Lecturers' Basic Psychological Needs: An SDT Perspective

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ABSTRACT

This literature review explores the influence of technostress creators on basic psychological needs of accounting lecturers, specifically autonomy, competence, and relatedness, as outlined by Self-Determination Theory (SDT). The rapid integration of technology into educational environments, accelerated by the COVID-19 pandemic, has significantly altered the teaching process, presenting both opportunities and challenges (Adarkwah, 2021; Afshan & Ahmed, 2020; Akmal et al., 2021). The increasing reliance on technology has also led to increased technostress among educators (Ab Wahab et al., 2022; Li & Wang, 2021), particularly accounting lecturers, who must continuously adapt to evolving technologies. Technostress creators, including techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty, disrupt the fulfillment of these psychological needs, impacting motivation, well-being, and satisfaction. This review synthesizes existing research to highlight how these stressors undermine lecturers' autonomy, competence, and relatedness. Additionally, it offers recommendations for mitigating technostress by fostering environments that support these basic psychological needs. The findings underscore the importance of addressing technostress in educational settings to enhance lecturers' motivation, performance, and well-being.

Contribution/Originality: This study contributes to the existing literature by examining the influence of technostress creators on the basic psychological needs of accounting lecturers, using Self-Determination Theory (SDT) as a framework. It is one of very few studies that have investigated how technostress disrupts autonomy, competence, and relatedness, offering recommendations for mitigating its effects.

1. Introduction

The rapid advancement of technology in the 21st century has profoundly impacted all aspects of life, including education, often outpacing the ability of many universities to adapt (Kamp, 2019; Talib et al., 2022). As technology becomes increasingly integrated into educational settings, it has transformed traditional teaching methods and introduced new challenges for lecturers. These challenges include navigating digital tools, managing online classroom dynamics, ensuring equitable access to technology, and addressing the diverse levels of digital literacy among students. The role of teaching is changing as lecturers are progressively expected to incorporate technology to prepare students with skills needed for the 21st century (Ahmad et al., 2019). Lecturers are now tasked with managing classroom environments that incorporate 21st century teaching practices, including the effective use of technology, amid these rapid changes and challenges. These rapid technological advancements, though beneficial, have also exposed lecturers to a particular type of stress associated with technology use, often referred to as technostress. This stress arises from difficulties in adapting to or coping with both the technology itself and the changes it brings (Brod, 1984).

The application of technology in the classroom has revolutionized traditional education by creating engaging and interactive online learning environments. This shift has transformed the traditional classroom, where lecturers typically teach from the front of the room, into more interactive, technology-based methods. Online learning, virtual learning, open and distance learning, and other forms of remote education have become integral to the modern educational landscape (Anuar et al., 2022; Asadullah, 2023; Guasch et al., 2010; Hasan et al., 2023; Masrani et al., 2023; Saidi et al., 2021; Shanthi et al., 2021; Welch & Napoleon, 2015). The rise of virtual classrooms and digital communication tools haves profoundly altered the dynamics of interaction between educators and students (Postolov et al., 2017). These changes have introduced new complexities in the teaching process, making it challenging for lecturers to manage their responsibilities effectively. Balancing these evolving demands amidst a continuously changing educational landscape can be particularly daunting for lecturers.

The Ministry of Higher Education (MOHE) in Malaysia has indeed integrated online and distance learning into the higher education system as part of its strategic planning, which is reflected in the Ninth, Tenth, Eleventh, and Twelfth Malaysia Plans. These plans have progressively emphasized the incorporation of modern technologies to enhance the quality and accessibility of education in Malaysia. The Malaysia Higher Education Blueprint MEB (HE) 2015–2025 further emphasizes globalized online learning, encouraging a shift from traditional methods to innovative, technology-driven approaches to enhance education quality and accessibility (Chan et al., 2019; Ganapathy, 2016). These efforts are in line with the broader objectives of the National Transformation Plan (TN50), which aims to integrate advanced technologies into various sectors, including education, as part of Malaysia's strategy to become a high-income nation and enhance its global competitiveness (Rahman et al., 2017; Shanmugam et al., 2019).

The education sector has continually evolved, particularly through the various industrial revolutions, with the 4th Industrial Revolution (IR 4.0) having a profound impact on modern work and learning environments (Oke & Fernandes, 2020). In response, Education 4.0 was introduced, emphasizing the integration of online learning platforms and digital tools into higher education to ensure graduates are well-prepared for the

demands of the modern workforce. As higher education institutions (HEIs) adapt to these advancements, they are expanding their distance learning offerings and utilizing online communication tools to align with the Education 4.0 era (Safiullin & Akhmetshin, 2019). Recently, the focus has shifted towards Industrial Revolution 5.0 (IR 5.0), further advancing these trends. Because accounting is closely related to technology, incorporating technology has become increasingly important in accounting education (Hermawan et al., 2022). In fields like accounting, this shift is particularly significant. The Malaysian Institute of Accountants (2018) notes that accountants will increasingly need to use new digital and smart technologies. Consequently, universities must equip accounting students with the necessary skills and knowledge to meet IR 4.0 challenges and enhance their employability, making online learning an essential component of modern accounting education (Bonekamp & Sure, 2015; Ghani & Muhammad, 2019; Shamsudin et al., 2023). This places significant demands on accounting lecturers, requiring them to continually adapt to new technologies to integrate them into their teaching and meet current industry standards. As a result, technostress has become a major concern in the educational sector, especially for accounting lecturers who are deeply involved in this digital transformation.

Furthermore, the recent COVID-19 pandemic accelerated the global adoption of digital transformation, leading to mandatory changes across all aspects of life. In particular, the education sector experienced an abrupt transition to online and open distance learning (ODL) platform worldwide (Aziz et al., 2022). According to Javier (2020), the pandemic caused a swift and significant change in teaching methods, compelling lecturers and institutions to adopt new practices more quickly than they might have otherwise. Consequently, this unforeseen crisis has accelerated the shift towards digital education, establishing it as the 'new normal' for teaching and learning (Shamsudin et al., 2023). The shift from face-to-face classrooms to online learning often requires lecturers to continuously update their skills, manage digital resources, and navigate the complexities of online teaching, which can result in feelings of overwhelm and exhaustion. This situation is even more pronounced in accounting, a field widely regarded as highly practical (Grabinski et al., 2020) and perceived by many as challenging and complex (Qhosola, 2016). Teaching accounting online presents significant difficulties (Ali et al., 2021) due to its practical nature, which makes it less suitable for full ODL (Makhlouf & Alani, 2022; Yacob et al., 2023). In this context, accounting lecturers face the dual challenge of mastering complex subject matter while integrating various technologies into their teaching. This dual expectation can lead to increased levels of technostress, potentially affecting their well-being and overall job satisfaction.

Self-Determination Theory (SDT) is a psychological framework that emphasizes the role of basic psychological needs in driving human motivation and well-being (Deci & Ryan, 1980, 2000). Despite its relevance, SDT has received very limited attention from technostress scholars (Kotek & Vranjes, 2022). However, SDT offers valuable insights into how technostress creators, which represent specific technological demands, affect the satisfaction of psychological needs, subsequently influencing stress levels and overall well-being (Hu et al., 2021). Day et al. (2019) highlighted that individuals' needs for autonomy, competence and relatedness can significantly influence employee motivation and well-being in the context of ICT use. When viewed through the lens of SDT, it becomes clear how technostress creators can disrupt the three basic psychological needs, thereby influencing the type of extrinsic motivation and indirectly affecting overall satisfaction (le Roux & Botha, 2021). By examining technostress through the lens

of SDT within the ODL context, a deeper understanding can be obtained on how these factors impact the well-being and motivation of accounting lecturers.

1.1. Problem of the study

The rapid integration of technology in education has created both opportunities and challenges, especially in HEIs. In recent years, emerging technologies like tablets, smartphones, laptops, and other smart devices have introduced new trends in education, significantly enhancing the teaching and learning experience (Huda et al., 2018). As a result, online learning has increasingly become a focus of educational practice and research (Wang et al., 2021). While technology improves teaching and learning experiences, it also requires lecturers to constantly adapt to new tools and platforms. This constant need for adaptation has led to the phenomenon known as technostress, where individuals experience stress due to the overwhelming demands of technology. The term "technostress" combines "technology" and "stress" to describe this phenomenon (Agboola & Olasanmi, 2016). This stress is often triggered by factors such as managing multiple applications, staying constantly connected, dealing with information overload, frequent system updates that cause uncertainty, and the continual need to relearn new systems, which can lead to job-related insecurities and technical issues (Tarafdar et al., 2010). Accounting lecturers, who are frequently required to manage complex software and digital tools, may experience heightened levels of technostress, which prior studies argued can negatively impact their well-being and performance (Fuglseth & Sørebø, 2014; Galanxhi & Nah, 2021; Salanova et al., 2013; Tarafdar et al., 2015).

The increasingly technology-driven work environment has made technostress a widespread issue in organizations, further exacerbated by the COVID-19 pandemic (Bondanini et al., 2020; Panisoara et al., 2020; Rodríguez-González-Moro et al., 2020; Srivastava et al., 2015; Tarafdar et al., 2015). According to Li (2021), before the COVID-19 pandemic, online learning was not widely used, but during the pandemic, it became the primary mode of education. This shift led to widespread adoption, various challenges, and a reassessment of teaching methods in the post-pandemic era. Since the pandemic, the unintentional reforms in teaching have led to increased levels of depression, anxiety, and stress among educators (Ozamiz-Etxebarria et al., 2021; Santamaría et al., 2021). As a result, technostress has become a prominent issue, marked by technostress creators such as techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty (Tarafdar et al., 2015; Tarafdar et al., 2007). Factors that contribute to the development of technostress are referred to as technostress creators or techno-stressors (Krishnan, 2017; Tarafdar et al., 2019). Technostress can arise from any technology but is more prevalent with new technologies or unfamiliar situations (Shu et al., 2011). However, Chandra et al. (2015) emphasized that although previous studies have used these five technostress creators: techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty, to measure technostress, the specific effects of each dimension, especially in educational settings, have not been thoroughly investigated. As a result, there are limited studies available for comparison. These stressors can have a profound impact on the well-being of lecturers, leading to negative outcomes such as burnout, demotivation, reduced job satisfaction, and decreased mental health.

The continuous advancement of ICT has been associated with rising levels of technostress among lecturers (Uğraş & Gömleksiz, 2023). Monitoring technostress of

faculty members is essential for their well-being and for successfully integrating digital technologies in higher education (Li & Wang, 2021). Lecturers often need to adapt to new technologies more frequently than those in many other professions (Wang et al., 2021). Although the literature on technostress has explored its impact across various professions, there is a lack of comprehensive studies specifically examining how these technostress creators interact with the fundamental psychological needs outlined in SDT, namely autonomy, competence, and relatedness, particularly in the context of accounting lecturers. SDT has been extensively utilized to explore the factors influencing educators motivation (Li, 2021). SDT contributes to this understanding by examining how these three basic psychological needs are influenced by technostress creators and how this, in turn, affects motivation and behavior in online learning. Widely applied across fields such as the workplace, commercial and educational services, SDT is recognized as one of the most empirically supported motivation theories (Sun et al., 2019), making it highly relevant for understanding the effects of technostress in educational settings. According to Ryan and Deci (2017), the fulfillment of these basic psychological needs is essential for fostering motivation and supporting overall well-being. SDT posits that individuals are motivated to seek out and thrive in environments that support these basic needs (Ciyin & Erturan-İlker, 2014). Therefore, considering the issues discussed and the existing research gap, this paper will review how the three basic psychological needs identified in SDT are influenced by technostress creators.

1.2. Research Objectives

This review paper aims to achieve the following research objectives:

i. To examine how technostress creators influence the basic psychological needs, rooted in Self-Determination Theory (SDT), of accounting lecturers, namely autonomy, competence, and relatedness.
ii. To provide recommendations for mitigating technostress among accounting lecturers through strategies that support basic psychological needs.

2. Methodology

This review paper is structured into three stages: planning, conducting, and reporting the review. In the planning stage, the paper emphasizes the importance of clearly defining the research objectives. During the conducting stage, relevant literature is identified by selecting appropriate keywords and manually applying inclusion and exclusion criteria. Initially, the review aimed to focus exclusively on articles published within the last five years. However, due to the limited number of relevant articles, the search timeframe was extended to include publications from 2012 to 2024. The selection criteria for the articles included availability in electronic databases, being written in English, and specifically addressing technostress creators, Self-Determination Theory (SDT), and basic psychological needs. After thoroughly reviewing the selected literature, the findings are systematically presented.

3. Results

In the context of SDT, autonomy, competence, and relatedness are identified as the three universal psychological needs essential for an individual's overall well-being and must be met through supportive environments to foster both intrinsic and extrinsic motivation, which are crucial for healthy psychological development (Deci et al., 2017; Deci & Ryan, 2000, 2008). To thrive, stay motivated, and perform optimally in both life and work, it is

necessary to fulfill these basic needs (Deci et al., 2017). Although many studies have demonstrated the importance of these needs, educators' basic psychological needs are often not given enough attention or consideration. Research in educational settings has primarily focused on fulfilling these needs with an emphasis on students rather than educators (Klassen et al., 2012; Korthagen & Evelein, 2016). With the shift to distance learning, these needs may have been affected, underscoring the importance of understanding how they are met in the context of online education (Müller et al., 2021). Gaining such insights could provide valuable insights into better supporting educators in integrating technology effectively into their teaching practices (Aiyoob et al., 2024). Technostress creators, stressors arising from the use of technology, may disrupt the fulfillment of these critical needs, potentially affecting lecturers' motivation, well-being, and overall ability to function effectively.

SDT posits that three basic psychological needs drive human behavior: autonomy, competence, and relatedness (Lepinoy et al., 2023). Among these, autonomy is crucial, as individuals inherently prefer the freedom to choose how they act (le Roux & Botha, 2021). Autonomy is the essential need to organize and control one's actions in a way that aligns with personal values and beliefs (Garn et al., 2019). It reflects the desire to make choices freely and act according to one's own will, with the assurance that these actions are truly self-determined (Ciyin & Erturan-İlker, 2014; Hu et al., 2021; Wall et al., 2013). This need for autonomy is closely tied to the desire for control over one's behaviors and goals, as well as the subjective experience of psychological freedom and the ability to make independent choices (Deci & Ryan, 2000; Vansteenkiste et al., 2020). According to Salikhova et al. (2020), within educational settings, digital technologies provide significant opportunities to meet the need for autonomy, but they also pose challenges to satisfying the need for relatedness. This means that while these technologies allow students and educators to have more control over their learning and teaching, they can make it more difficult to establish meaningful connections with others. This sense of autonomy is essential for individuals to feel in control of their own lives and actions. For educators, this sense of autonomy includes having the flexibility and freedom in their teaching practices and in setting learning objectives according to students' needs (Li, 2021). Educators appreciated online learning for its flexibility, the autonomy it offers, opportunities for personalized learning, and enhanced peer interactions (Chieu & Herbst, 2016). Sørebø et al. (2009) argued that when educators perceive a high level of autonomy, it significantly enhances their intrinsic motivation to implement online learning in the classroom.

Next is the need for a sense of competence, which involves feeling effective in one's skills and abilities when carrying out tasks (Ebersold et al., 2019). Competence, also known as competency, refers to the need to develop personal abilities and skills, as well as to interact effectively with one's environment (Garn et al., 2019; Vansteenkiste et al., 2020; Zhou et al., 2024). It is the need to feel efficient and capable of bringing about change, a need that is fulfilled when individuals successfully tackle challenges, but not when they engage in tasks that are too easy (Hu et al., 2021; Müller et al., 2021; Ryan & Deci, 2017). When individuals achieve their goals by positively impacting their environment, they feel competent, as this success validates their skills and abilities. This drive for competence is evident in employees' efforts to feel capable and effective in their roles (Klassen et al., 2012). It is connected to the desire to manage and respond successfully to various challenges encountered in their surroundings, akin to the concept of self-efficacy (Ciyin & Erturan-İlker, 2014; Wall et al., 2013). Competence is the strongest predictor of self-determined motivation, followed by autonomy, and then relatedness (Bureau et al.,

2022; Levesque-Bristol et al., 2020). Furthermore, competence has been highlighted as a significant factor influencing motivation in online settings (Huang et al., 2019; Martinek et al., 2021; Wang et al., 2019). It also relates to confidence in one's ability to complete optimally challenging and personally meaningful tasks while feeling effective (le Roux & Botha, 2021; Ryan & Deci, 2000a, 2000b). In educational contexts, Khan et al. (2018) found that perceived competence and relatedness significantly influence intentions to adopt educational technology. Therefore, developing a strong sense of competence is crucial for educators, as it enhances their effectiveness in using educational technology, such as online learning, and motivates them to integrate technology into their teaching practices.

The need for relatedness involves a desire for belonging, connection, interaction, and attachment to others (Kaplan & Madjar, 2017). It involves the need to feel connected to others, to belong to a group, and to form close and intimate relationships (Deci & Ryan, 2000; Wall et al., 2013). This need is fulfilled through experiences of intimacy and closeness, which help foster a sense of connection (Ryan, 1995). Within SDT, relatedness pertains to an individual's need to establish and sustain close, stable relationships and this includes the experience of being connected with and cared for by others, as well as feeling engaged and having a sense of belonging (Müller et al., 2021; Ryan & Deci, 2000b, 2017). Although relatedness is less explicitly studied compared to autonomy and competence in the literature (Filak & Sheldon, 2008; Trenshaw et al., 2016), ensuring that educators experience a sense of relatedness through positive interactions with students, colleagues, and university staff (Li, 2021) can significantly enhance their engagement and motivation, particularly in online settings. During the COVID-19 pandemic, educators experienced reduced autonomy in teaching and felt diminished relatedness with students, colleagues, and other community members due to the shift to ODL (Li, 2021; Wong, 2023). Although SDT research in workplace settings generally defines relatedness as a connection with colleagues, in teaching environments, this need extends to relationships with both colleagues and students (Klassen et al., 2012) as well as other stakeholders. However, empirical evidence supporting this view of relatedness within the SDT framework remains limited.

In today's digital work environments, technostress is becoming an issue (Bondanini et al., 2020; Molino et al., 2020; Spagnoli et al., 2020; Tarafdar et al., 2020). This issue is particularly significant for educators, including accounting lecturers, who face unique stressors due to the rapid integration of technology into teaching. The constant demand to adapt to new educational technologies can negatively influence their basic psychological needs: autonomy, competence, and relatedness, as outlined by SDT. When educators experience autonomy in arranging their teaching process, they feel a sense of competence in using educational technology, and would foster positive connections that enhance relatedness, motivation and well-being that improve significantly, leading to higher overall satisfaction with their teaching experience, including in online settings (Poulou, 2020; Wang et al., 2021). This highlights the importance of addressing these needs to ensure educators remain effective and motivated. To become more effective, educators need to be aware of their own psychological needs and how these needs are influenced by technostress (Ciyin & Erturan-İlker, 2014). Addressing these influences is critical for maintaining their well-being, motivation, and ability to effectively support students (Ciyin & Erturan-İlker, 2014; Jeno et al., 2019; Li, 2021; Sheldon et al., 1996; Sun et al., 2019; Wang et al., 2019). Despite the importance of this issue, there is a notable scarcity of studies examining how technostress creators influence these basic psychological needs within educational settings, particularly among accounting lecturers.

This gap underscores the need for research that explores these influences and provides recommendations for mitigating technostress through strategies that support the fulfillment of these fundamental needs.

3.1. Technostress creators influence the basic psychological needs outlined in Self-Determination Theory (SDT) for accounting lecturers, particularly autonomy, competence, and relatedness

3.1.1. Techno-overload

Techno-overload has been identified as the most prevalent cause of technostress (Chandra et al., 2019; Pirkkalainen et al., 2019; Srivastava et al., 2015). Techno-overload refers to the overwhelming burden of technology-related tasks and responsibilities. In educational settings, techno-overload occurs when universities pressure lecturers to rapidly adopt and use technology for durations that extend beyond typical working hours, often due to strict deadlines or university demands (Karr-Wisniewski & Lu, 2010). This situation also describes how individuals feel pressured to work longer hours and at a faster pace because of technological demands (Ragu-Nathan et al., 2008; Tarafdar et al., 2007). Techno-overload is characterized by the amount of work required, the speed at which it must be completed, changes in work practices, increased complexity of tasks, reduced free time, and constant work-related contact (Li & Wang, 2021). As a result, educators are driven to work harder and longer because of the increased workload, which extends their workdays and significantly changes their work patterns (Ismail et al., 2022; Tarafdar et al., 2010).

Techno-overload often forces educators to work longer hours and manage increased workloads, leading to work demands that extend beyond typical working hours (Ismail et al., 2022). This increased pressure can undermine autonomy, as lecturers may feel compelled to meet excessive demands, leaving them with little control over their work pace and priorities. Additionally, it can affect competence, as managing the high volume of tasks can be challenging, leading to feelings of inadequacy. Information overload occurs when educators are overwhelmed by excessive information, making it difficult to process and use effectively, which can further diminish their sense of competence and lead to feelings of inadequacy (Tarafdar et al., 2011). The extension of working hours beyond typical boundaries disrupts work-life balance (Dahabiyeh et al., 2022), reducing the time available for meaningful connections with colleagues, students, and social networks, thereby weakening their sense of relatedness. When overwhelmed by the sheer volume of technology-related tasks, lecturers may find it challenging to maintain meaningful connections with others. This overload can lead to feelings of isolation or disconnection, as the demands of managing excessive technological responsibilities limit the opportunities for fostering relationships, collaboration, or community within the workplace. In summary, techno-overload may compromise accounting lecturers' autonomy, challenge their competence, and weaken their sense of relatedness, ultimately affecting their overall well-being, motivation, and satisfaction.

3.1.2. Techno-invasion

The rapid growth of technology has drawn global attention to the issue of techno-invasion (Benlian, 2020; Chen et al., 2022; Srivastava et al., 2015). Techno-invasion refers to the intrusion of technology into personal time and space due to constant connectivity, which can blur the lines between work and personal life (Perera, 2021).

This constant connectivity makes it challenging to disconnect, thereby impacting relatedness by interfering with personal relationships and reducing opportunities for meaningful interactions. Additionally, it can undermine autonomy, as lecturers may feel their personal time is being encroached upon by work demands. Techno-invasion leads to stress and conflict between work and family life, as users feel pressured to respond to work duties at any time, including weekends, which jeopardizes their personal lives and overall well-being (Cataldo et al., 2023; Gaudioso et al., 2017). This intrusion forces users to stay connected outside of work hours, disrupting their work-life balance (Boyer-Davis & Berry, 2022). In online education, techno-invasion occurs due to the expectation that educators are available to students at all times, including weekends (Dahabiyeh et al., 2022). The need to keep up with technology and work beyond regular hours leads to a constant feeling of being overwhelmed by work, with limited time free from technological intrusion (Talib et al., 2022; Upadhyaya & Acharya, 2021). While technology can improve performance, frequent updates or extensive use of technology outside regular working hours can lead to increased intrusion from technology (Wu et al., 2017). To conclude, techno-invasion disrupts the balance between work and personal life, compromising accounting lecturers' autonomy and weakening their sense of relatedness, which in turn affects their well-being, motivation, and satisfaction.

3.1.3. Techno-complexity

Techno-complexity refers to the difficulty users face when trying to understand and use complex technologies (Atanasoff & Venable, 2017). As technology becomes more intricate over time, users may feel that their skills are not sufficient to manage the increasing complexity (Ragu-Nathan et al., 2008). This issue is evident in education, where new technologies can create a gap between what educators know and what they need to use (Califf & Brooks, 2020). Users of technology may feel incompetent to handle and use new technologies due to their complexity (Sweeney & Summers, 2002). Techno-complexity demands significant time and effort to master, which can detract from other important tasks (Tarafdar et al., 2011; Zhao et al., 2020). Educators may experience anxiety and dissatisfaction due to the constant need to learn about new technologies to meet organizational demands, especially as their knowledge quickly becomes outdated, thus highlighting techno-complexity as a significant threat to their mental health and well-being (Al-Ansari & Alshare, 2019; Nimrod, 2018). Educators also continue to struggle with the demands of using increasingly complicated technology for teaching, with techno-complexity being a significant stressor as they must constantly adapt to evolving technologies (Marchiori et al., 2019; Ragu-Nathan et al., 2008; Syakina et al., 2023). This situation affects lecturers' competence and can also impact their autonomy. The ongoing need to learn and adapt to new technologies can limit educators' control over their work and decision-making, making them feel less independent in their roles. Ultimately, techno-complexity challenges accounting lecturers' competence and autonomy, impacting their motivation, satisfaction, and overall well-being.

3.1.4. Techno-insecurity

Techno-insecurity refers to the anxiety employees feel about potentially losing their jobs to others who are more skilled with current technologies, especially given the fast pace of technological change (Atanasoff & Venable, 2017; Ragu-Nathan et al., 2008). While public servants generally have strong job security and are less likely to face such concerns, they often endure significant pressure and feelings of inadequacy when comparing their ICT skills to colleagues that are proficient (Boyer-Davis et al., 2023;

Marchiori et al., 2019; Sellberg & Susi, 2014). This pressure compels them to make personal sacrifices to stay abreast of technological advancements (Csinger, 2021). As technology evolves, many individuals worry that their skills and knowledge are insufficient to effectively use new technologies (Ragu-Nathan et al., 2002). This concern is particularly relevant in education, where lecturers may experience heightened insecurity about their ability to keep up with technological advancements. Techno-insecurity arises when educators feel threatened by colleagues with superior technological skills while also struggling to find the time to effectively learn and use new technologies (Csinger, 2021). This insecurity, along with fear and anxiety about learning new technologies, can cause psychological and emotional resistance, making it harder for individuals to engage with technology (Booker et al., 2014). Consequently, techno-insecurity primarily affects competence, impacting motivation and satisfaction, and make accounting lecturers' feel less confident and engaged in their roles. Given its profound impact, techno-insecurity is a significant source of stress that can adversely affect both their well-being and health (Chirumbolo et al., 2017).

3.1.5. Techno-uncertainty

Techno-uncertainty involves the constant changes and updates in technology that create a sense of unpredictability and unease (Boyer-Davis et al., 2023). This uncertainty arises from the rapid technological advancements and ongoing transformations in the workplace, which necessitate continuous learning and adaptation (Boyer-Davis & Berry, 2022; Gennaro et al., 2020; Yin et al., 2014). For example, lecturers may feel they lack control over the technology they use for teaching due to frequent updates and changes. This can adversely affect their sense of sense of autonomy and competence in managing their educational tasks effectively. Additionally, frequent technology upgrades and new implementations across various fields, driven by ongoing advancements, can heighten techno-uncertainty, leading to increased employee frustration and job dissatisfaction (Ranathunga & Rathnakara, 2022). While high levels of uncertainty may deter some users from adopting new technology (Hofstede, 2003), it can also motivate others to embrace it (Tipuric et al., 2007). In fact Sarabadani et al. (2020) observed that techno-uncertainty can be linked to positive emotions, as employees' curiosity about new technology can lead to feelings of excitement and pleasure. Ragu-Nathan et al. (2008) described techno-uncertainty as a situation where technology users feel insecure because their skills and knowledge quickly become obsolete due to continual technological developments and advancements. Similarly, Agboola and Olasanmi (2016) noted that ongoing technological changes and upgrades prevent employees from gaining a solid foundation of experience with specific technology, as they must constantly update their knowledge to keep pace with the rapid advancements. Therefore, considering the influence of techno-uncertainty, accounting lecturers' autonomy and competence may be compromised, impacting their motivation, satisfaction, and overall well-being.

3.2. Recommendations for alleviating technostress among accounting lecturers through strategies that bolster basic psychological needs.

3.2.1. Supporting Autonomy

According to Roth et al. (2007), when university administrators, such as deans or department heads, provide autonomy support to lecturers, it can enhance their autonomous motivation. This support includes involving lecturers in decision-making processes, delegating authority in areas like curriculum development and teaching

methods, and fostering a university environment that addresses lecturers' basic needs for relatedness and competence. By doing so, university administrators can help lecturers feel more intrinsically motivated, leading to greater engagement, job satisfaction, and effectiveness in their academic roles. The ability for educators to choose teaching methods that best meet their students' needs is another critical aspect of supporting educator motivation (Li, 2021). Wong (2013) argued that when university administrators provide autonomy, lecturers are more likely to have the flexibility to choose professional development activities that align with their needs and preferences. Building on this, providing flexible teaching tools is also essential to further support lecturers' autonomy. By allowing lecturers to choose from a range of technological tools that align with their teaching style and course needs, such as different learning management systems (LMS) or communication platforms, they gain greater control over how they incorporate technology into their teaching. This flexibility not only supports their autonomy but also enables them to cater to the diverse learning needs of their students, making the learning experience more engaging and increasing student participation (Zheng, 2023). Additionally, offering personalized training sessions tailored to individual needs, preferences, and learning pace of lecturers can further support their autonomy. Such training can be customized to address specific areas where a lecturer may need additional support or wish to develop new skills, allowing them to feel more in control of their professional growth. In line with this, Bahar et al. (2020) recommended that universities offer both training and resources to assist lecturers in effectively integrating technology into their teaching practices. This approach is particularly crucial as reluctance to adopt new technology, often due to insufficient knowledge or inadequate training, has been identified as a significant barrier to effective distance learning (O'Doherty et al., 2018). Implementing these strategies can create a supportive environment that empowers lecturers, enhances their motivation, and leads to better outcomes in their academic roles.

3.2.2. Enhancing Competence

Providing ongoing training and resources helps lecturers stay current with the latest technological tools and teaching methods. For instance, workshops that guide lecturers step-by-step through useful features of educational technology tools that are commonly used in teaching and learning environments, such as setting up virtual classrooms or creating interactive presentations, can boost their confidence in using these tools effectively. This aligns with the idea that well-designed training programs are key to building competence and confidence in new technology, as highlighted by Ragu-Nathan et al. (2008) and Tarafdar et al. (2014). While the mode of training, whether online or offline, is less critical, the effectiveness of building competence relies heavily on how well the training program is designed and delivered (Salikhova et al., 2020). Furthermore, the integration of digital training not only equips faculty members with the necessary skills but also introduces innovative teaching approaches that enhance their ability to support students effectively (Park & Son, 2022). Additionally, as Slone (2024) noted, training helps educators understand the tools and resources available for online classes, which further strengthens their confidence and effectiveness. Providing opportunities for peer training and collaborative learning sessions with colleagues who are more knowledgeable about complex technologies can further enhance lecturers' competence in integrating these tools into their teaching. Together, these strategies create a supportive environment that alleviates technostress, fosters professional growth, and improves the overall teaching experience.

3.2.3. Fostering Relatedness

Encouraging the use of collaborative platforms can help lecturers work together, share resources, and exchange ideas more effectively, which, as Sternad Zabukovšek et al. (2022) argued, will facilitate seamless communication among them. For example, creating online communities or forums where lecturers can discuss challenges and solutions related to technology use fosters a sense of connection and support. Building social connections among lecturers helps them feel more connected to their peers, which can reduce feelings of isolation (Zeng et al., 2015). According to Li (2021), to enhance the sense of relatedness among lecturers, especially during times when face-to-face interactions are limited, university administrators can organize virtual activities such as online gatherings, collaborative workshops, and informal meetings. These efforts can help maintain strong connections between lecturers, their colleagues, and university administrators, reducing feelings of isolation. Butz and Stupnisky (2017) and Salikhova et al. (2020) highlighted the importance of organizing and participating in forums to fulfill the need for relatedness among lecturers, as these forums help build and strengthen relationships with their peers. Such connection and support are particularly valuable for lecturers, as they can provide reassurance, reinforce a sense of structure, enhance motivation, and fulfill the need for community, especially during challenging or stressful times (Raptis, 2022). Additionally, organizing regular meetings or informal check-ins provides lecturers with opportunities to express their concerns, share experiences, and receive feedback from their peers or department heads. These interactions help build a sense of community and belonging, reducing feelings of isolation that can result from excessive reliance on technology. Together, these strategies create a supportive environment that enhances collaboration, mitigates technostress, and strengthens the overall teaching experience.

4. Conclusion

This literature review highlights the impact of technostress creators on basic psychological needs of accounting lecturers, focusing on the challenges brought by rapid technological advancements in educational settings. Using SDT as a framework, the analysis explains how techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty disrupt the needs for autonomy, competence, and relatedness. These disruptions weaken lecturers' motivation and well-being, making it difficult for them to effectively integrate technology into their teaching processes. Addressing these issues is essential to create an educational environment that supports lecturers' psychological needs, which can improve their motivation, satisfaction, and overall effectiveness. The review also provides recommendations to reduce technostress, such as offering autonomy support, enhancing competence through targeted training, and fostering relatedness among lecturers. Understanding and addressing the influence of technostress creators is important to support the well-being and professional development of accounting lecturers in an increasingly digital educational landscape.

Ethics Approval and Consent to Participate

Not applicable

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