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The impact of different organizational environments on technostress: Exploring and understanding the bright and dark sides before and during Covid-19

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The impact of different organizational environments on technostress: Exploring and understanding the bright and dark sides before and during Covid-19

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Abstract

The pandemic, Covid-19 has brought about digital transformations that are causing challenges in the world of work, such as increased technostress, which is stress caused by the use of ICTs. Although this condition can negatively impact individuals' well-being and organizational outcomes, the typical conceptualization of technostress as a "dark phenomenon" overlooks its "bright side", known as techno-eustress. Research in this area is minimal, which was identified as a research gap that this team was motivated to overcome by forming the aim: To explore, understand and explain the management and duality of technostress in different organizational environments. Using the themes of organizational culture and trust, a qualitative two-phase study used for analysis an interpretivist approach. The sample population of 12 individuals was drawn using a non-random, snowball, purposive and convenience sampling. Twenty-four Semi-structured interviews were conducted before and during the Covid-19 lockdowns and analysed using thematic analysis and open-coding drawn from Grounded Theory. The findings showed that an environment of low centralization and high innovation amplified individuals' techno-eustress perceptions both, when working in organizational premises and remotely. Conversely, lower levels of trust in more traditional organizations were found to intensify techno-distress, reducing job performance, engagement and job satisfaction.

Keywords: Technostress, Techno-Eustress, Organizational Culture, Trust, Centralization, IT Control, Telework, Interpretivism.

1.0 Introduction

The unprecedented advancements of Information and Communication Technologies (ICTs) have revolutionized how we live and work in modern societies. Presently, technologies are being used intensively in professional contexts where organizations are replying on ICTs to improve employees' performance and productivity (Tams et al., 2020). While modern technologies help organizations become more efficient and increase their benefits, their inescapable prevalence is causing "technostress", defined as "stress experienced by individuals due to the use of ICTs" (Ragu-Nathan et al., 2008).

The demands causing technostress to individuals in today's workplace include: having to work more or faster using various applications; feeling incapable of disconnecting from technologies; lacking time to learn how to use new tools; or having to constantly upgrade the ones currently being used (Tarafdar et al., 2020). Such situations are creating information overload, forcing individuals to multitask and leading to other serious conditions, such as anxiety, burn-out and depression (Lee et al., 2014; Salanova et al., 2013; Thomée et al., 2007). These are only some of the consequences on individuals' well-being that have unsurprisingly, spurred major concern from international organizations (ILO, 2019; WHO, 2015). For instance, the World Health Organization (WHO, 2019) estimated that US$ 1 trillion annual global loss in productivity emerged due to work depression and anxiety. Similarly, from an IS's (Information Systems) perspective, the detrimental effects of technostress in the workplace, such as decreased productivity, job satisfaction and organizational commitment (Tarafdar et al., 2007; Ragu-Nathan et al., 2008) have long been established. As expected, these wide-ranging impacts have led to technostress being viewed as a "dark phenomenon" (Tarafdar et al., 2017), while overlooking its "bright side", known as "techno-eustress".

Techno-eustress is a cognitive sub-process from the technostress process. While the negative experiences with ICTs actually belong to the "techno-distress" sub-process; techno-eustress happens when a potentially stressful ICT-related event is perceived as a positive challenge to overcome instead of a threat. Thus, instead of having a "fight or fly" response, the individual can regulate their coping strategies, positively affecting the outcomes. For example, individuals may adopt a problem-solving attitude and seek

information or assistance, instead of focusing on what is out of their control. It is therefore expected that the more an individual experiences techno-eustress instead of techno-distress, the better the impact on their well-being at work. Yet, as the extant IS research has predominantly focused on harmful technostress creators and outcomes, a holistic understanding of the technostress phenomenon is missing (Tarafdar et al., 2017).

For example, a review of the IS literature on technostress shows a dearth of research on the technology characteristics, organizational environments and organizational support mechanisms that may enhance techno-eustress. Presently, to the best of our knowledge, the only IS study that has conceptualized and empirically tested the technostress process including the two sub-processes, is Califf et al.'s (2020). Apart from this key study specific to the healthcare industry, emerging research that incorporates the bright side is still in its infancy. For instance, previous empirical research conducted by Wang et al., (2008) identified the organizational internal environments that cause the highest and lowest levels of techno-distress. However, there is an absent of empirical research on the environments that can could foster techno-eustress experiences instead.

Additionally, considering the current Covid-19 global pandemic (ILO, 2020), advancing knowledge in this area would prove particularly valuable for a post Covid-19 world. With lockdowns forcing organizations to adopt a rapid transformation in their work practices, leading to a "new normal" (ITU, 2021), the concept of working from home has become mandatory. Therefore, different dimensions of technostress are bound to be experienced by individuals. Hence, it has become more critical to identify technologies, environments and mechanisms that can foster techno-eustress at organizational premises or while working remotely.

In summary, this team has identified various gaps in knowledge that warrant researchers' attention. We consider that exploring and understanding the technology and organizational environments that help increase techno-eustress experiences can have significant practical implications for decision-makers in organizations. It could, for example, help elucidate strategies, policies and work practices that support individuals in their use of technologies to increase their job performance, engagement and job satisfaction, while caring for their well-being. It could also inform IT (Information Technology) developers so they can design applications that help enhance techno-eustress.

Therefore, motivated to overcome these research gaps, this team formed the aim of this study: To explore, understand and explain the management and duality of technostress in different organizational environments. Accordingly, we take an interpretative and qualitative approach to advance research on this new arena. The rest of this paper is organized as follows. Hereafter, to provide a background to our study, we review the concepts of techno-eustress, organizational culture and trust. Next, we provide a detail explanation of our research design. This is then followed by the analysis and discussion of the empirical findings from our study. Next, implications of this research for theory and practice are presented. Finally, limitations, future directions and conclusions are provided.

2.0 Theoretical Background

In this section we provide a background on techno-eustress; organizational culture; and trust, which serve as the theoretical foundation for our study.

2.1 Techno-Eustress

When technostress was initially investigated by psychologists Craig Brod (1984) and Weil and Rosen (1999), their clinical studies focused exclusively on techno-distress. More recently, IS scholars have also followed this path, conceptualizing technostress as a dark phenomenon by identifying negative technostress creators and outcomes (Tarafdar et al., 2007; Ragu-Nathan et al., 2008; Ayyagari et al., 2011; D'Arcy et al., 2014; Tarafdar et al., 2015). The key challenge with this approach is that it assumes that stressors are automatically perceived as threats or demands, prompting a "fly or fight" response. However, it is widely known by the extensively used transactional model of stress and coping (Lazarus and Folkman, 1984) that stress is a process, which has two sub-processes, distress and eustress (Selye, 1974). The influence of this model is remarkable as it remains the keystone of psychological stress and coping research across most disciplines. Correspondingly, individuals dealing with potentially stressful ICT-related incidents can experience techno-distress or techno-eustress (Sethi et al., 1987; Califf et al., 2015). This distinction is paramount because it means that the response to a stressful situation is formerly shaped by the person's negative or positive perception of the stressor, leading to either detrimental or helpful coping mechanisms and outcomes (Selye, 1974).

A focused analysis of the IS literature on technostress undertaken by this team revealed that only a handful of studies have been completed to date to investigate the complexity of the technostress phenomenon by including its bright side. Firstly, Srivastava et al. (2015) investigated the link between personality traits and job outcomes, empirically demonstrating that some personality types can shape the response to technostress, leading to job engagement. Additionally, Salo et al. (2018) explored the dynamics of the technostress process to understand negative and positive stress over smartphones' failures, though in the personal realm.

Finally, Califf et al. (2020) focused on the duality of technostress in the healthcare environment in the United States of America (USA). Their studies (Califf et al., 2015; Califf and Martin, 2016; Califf et al., 2020) are crucial because so far there was no model that holistically incorporated and examined positive and negative techno-stressors, their corresponding psychological responses, and job outcomes. What is also important, is that the authors identified three challenge techno-stressors linked to techno-eustress and increased job satisfaction. Namely, usefulness; technical support; and involvement facilitation. For the reader's convenience, challenge techno-stressors are individuals' perceptions on technology as an "opportunity for enhancing skills, tasks, and work-life activities" (Tarafdar et al., 2017). Notwithstanding, these studies are quite context specific, as they focus on Healthcare Information technology (HIT) only.

In conclusion, despite the relatively recent agreement emerging from the main technostress scholars on the need for techno-eustress knowledge to be expanded (Califf et al., 2020; Tarafdar et al., 2017; Tams, 2015), there is currently a paucity of research on this area, despite a strong motivation to do so. To address this, our study considers factors that tend to strongly permeate individuals' experiences with technologies in organizations, as established by the general IS literature (Orlikowski and Scott, 2008), such as organizational culture, with a focus on internal organizational environment and organizational support mechanisms; and trust. We discuss these factors in the next sub-sections.

2.2 Organizational Culture

The environment of an organization is, to a large extent, determined by its organizational culture, defined as: "a system of shared norms, beliefs, values, and assumptions that binds people together, thereby creating shared meanings (Gray and Larson, 2008:72)". The culture of an organization is complex, as it pertains to many different aspects historically engrained within the organization. Schein (1985), for example, defined three levels of organizational culture: artefacts (conspicuous but difficult to understand); espoused values (conscious strategies, goals and philosophies); and basic underlying assumptions (difficult to discern as they exist at a deeply unconscious level). Basically, it permeates all its aspects, from its present and future to the wellbeing of their employees and their performance. Hence, understanding the culture of an organization is of much importance to unravel the historical managerial processes that shaped the implementation and use of ICTs (Leider and Kayworth, 2006). As a result, we believe that exploring certain artefacts (e.g. technology characteristics; organizational internal environment); espoused values (e.g. work practices; organizational support mechanisms); and basic underlying assumptions (e.g. level of trust), we can uncover the aspects that enhance techno-eustress experiences in organizations.

For example, while the culture of an organization is difficult to change due to the complexities developed throughout its lifetime, the organization's internal environment can be more easily readjusted. The environment of an organization is comprised of both, its internal and external environment, and defined by all the potential factors or powers that influence the organization's operation and performance (Robbins, 1996). Within the internal environment, of much interest is the great impact of internal power structures on work-related stress (Weiss, 1983; Hendrix et al., 1995). Specifically, highly centralized organizations are linked to increased stress at work, while more employee involvement in less centralized organizations has been shown to lessen stress (Sheridan, 1992). Similarly, in the technostress literature, Wang et al. (2008) have empirically demonstrated that in organizations with low centralization and low innovation, technostress levels are the lowest. Conversely in organizations with high centralization and high innovation employees experience the highest levels of technostress.

Another factor that influences the interplay with technologies in organizations, and even technology acceptance and quality, is employee participation in the planning and

introduction of new ICTs (DeLone and McLean, 1992; McKeen et al., 1994). In the technostress literature, Ragu-Nathan et al. (2008) have conceptualized technostress inhibitors, defined as "organizational mechanisms that reduce stress from the use of ICTs", including literacy facilitation, technical support provision and involvement facilitation. These mechanisms were found to increase job satisfaction and organizational and continuance commitment. Later, Tarafdar et al. (2010) extended these findings by confirming that employee involvement and innovation support reduce technostress, lessening its detrimental effects on end-user satisfaction and performance; while increasing satisfaction with technologies and productivity. Finally, the positive perception of individuals about certain technology characteristics, e.g. usefulness, have been found to help reduce techno-distress (Ayyagari et al., 2011; Tarafdar et al., 2011). To summarize, it is recognised that certain technology characteristics, organizational support mechanisms and internal organizational environments help reduce techno-distress. However, apart from Califf et al.'s (2020) identification of three challenge techno-stressors in the healthcare environment, and Srivastava et al.'s (2015) link between personality traits and job engagement, comparable factors that may help enhance techno-eustress in organizations remain unknown. This is the focus of our study.

2.3 Trust

The final concept pertaining our theoretical background is trust, defined as "the willingness to be vulnerable based on positive expectations about the actions of others" (Zand, 1972) and considered to be a vital technology adoption determinant (Li et al., 2008). Trust has been included in this study because it has been shown to ease interactions and facilitate cooperation (Cummings and Bromiley, 1996). Yet, although cooperation is the linchpin of organizational success and trust the keystone of cooperation, in the technostress literature trust is barely investigated.

For instance, trust is known to influence relationships by increasing employees' confidence in the organization and the willingness to cooperate with one another (Oreg et al., 2008). Hence, employees who distrust their organization or Senior Management may become resistant to change (Oreg, 2006) and oppose or disregard their ICT initiatives. In fact, employees are more likely to be open to initiatives introduced by a manager they trust, because of the implicit reduced risk of failure or loss, which facilitates collaboration and innovative thinking. In contrast, in an untrusting

environment where employees are micromanaged, they may feel real or perceived vulnerability (Rich et al., 2010). Hence, because if present, trust increases productivity and performance (Costa et al., 2001); and when absent, it acts as a demotivating factor that hampers work engagement (Lewicki et al., 1998), we consider that a deeper understanding of trust in relation to technostress is vital.

In brief, despite its important in IS research, trust is empirically under-examined in the technostress literature, where we only found it as an indirect implication related to technostress outcomes in surveillance (Agrawal et al., 2018) and nomophobia (Tams et al., 2018) studies. We consider this may be due to trust being a complex concept that lays hidden in the many intricacies of organizational dynamics and interpersonal relations that influence the underlying assumptions of an organization's culture. Yet, for this very reason, we believe it can help us understand the positive and negative technostress experiences of individuals in their contextual environments.

2.4 Conceptual Framework

Having identified the current gaps in knowledge in the techno-eustress area and explained the motivation and aim of our research, what we can learn from this research study is: what, why, where, when and how individuals' insights on the management of technostress may help incentivize techno-eustress experiences in the work environment. To help answer such questions, a conceptual framework was created *(Figure 1)*. To determine the application of the theoretical aspects to reality, a research approach is required that is explained next.

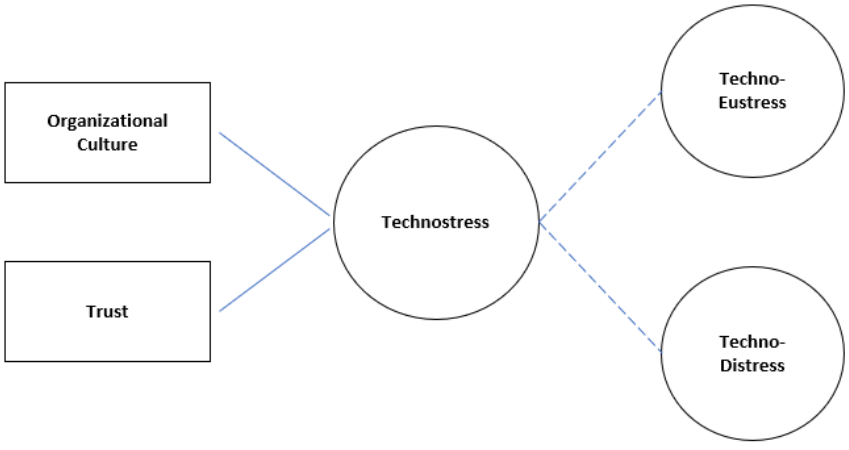

Figure 1. Conceptual Framework

3.0 Research Method

To examine the technostress phenomenon, this team took a subjective ontological position and an interpretive stance (Miles and Huberman, 1994). We chose this epistemological approach because interpretivism allows the researcher to advance knowledge by closely examining the perceptions and meanings that individuals attach to their experiences in their contextual situation (Orlikowski and Baroundi, 1991). Other approaches were deemed unsuitable due to the explorative nature of this study. For example, we decided to depart from the controlled standpoint of positivist or reductionist approaches as the techno-eustress arena is fairly nascent, despite the rich IS literature on technostress. Hence, being restricted by a limited subset of variables would have not yielded the level of granularity and richer contextual explanations sought by this research study to extend previous research. Instead, we deemed the interpretive approach particularly effective to advance an understanding on the duality of the phenomenon by exploring "how" and "why" various social and material factors influence individuals' management of technostress in different organizational environments. Accordingly, we also utilised a qualitative approach consisting of two phases (pilot and final) over a period of six months. For this, we selected a non-probability heterogeneous sample of 12 participants with miscellaneous demographics from large organizations and diverse sectors in the United Kingdom (UK) and Spain. The sample selection was based on the research team's judgement and a selection criterion, e.g. individuals who work in organizations with different internal environments, using a variety of ICTs to perform their daily tasks. Additionally, we ensured participants belonged to different levels of the organizations to guarantee the findings reflected diversity *(Table 1).* Finally, we ensured that theoretical saturation occurred because by using the 12 participants, we ensured that the level and depth of understanding was fulfilled. The numbers of participants also aligned with those suggested by Saunders and Townsend (2016).

Level in the Organization	Nature of Work	Age	Gender	Work Experience	Highest Educational Level	ICT Skills
High	Change Management	41 - 50	Male	15+ years	First Degree	Advanced
Low	Office Administration	18 - 30	Female	-5 years	Postgraduate Degree	Advanced
Middle	Service Management	51+	Male	-5 years	Postgraduate Degree	Intermediate
Low	Office Administration	18 - 30	Female	-5 years	A Level	Advanced
Middle	Workplace Wellbeing Consultancy	41 - 50	Female	15+ years	First Degree	Advanced
Middle	Financial Services	18 - 30	Female	5+ years	Postgraduate Degree	Advanced
Middle	Project Management	18 - 30	Female	-5 years	Postgraduate Degree	Advanced
Middle	Logistics Management	41 - 50	Female	5+ years	First Degree	Intermediate
Low	Office Administration	18 - 30	Female	-5 years	Postgraduate Degree	Advanced
Middle	Translation Services	31 - 40	Female	10+ years	Postgraduate Degree	Advanced
High	International Sales Management	31 - 40	Male	10+ years	Postgraduate Degree	Advanced
Low	Office Administration	41 - 50	Female	10+ years	BTEC/ College	Intermediate

Table 1. Participants' Demographics

In terms of the research site selection, both the UK and Spain have been among the 5 largest European economies for the last 4 decades (Statista, 2020). Additionally, 99.9% and 99.8% of the UK and Spanish population respectively, are covered by a mobile cellular network (ITU, 2020). Since this research study emphasises the use of ICTs in organizational premises and while working remotely, this factor was important. Hence, the sites were selected because this scenario provides a level playing field of 2 European countries with different cultures but similar internet penetration rates. Moreover, previous research shows that although 80% of European organizations present work-related stress, less than a third have adequate procedures in place to help their employees (EU-OSHA, 2015). Thus, it seemed pertinent to understand individuals' experiences of technostress within the contexts of organizations based in European countries.

The participants were interviewed twice, before and during the Covid-19 lockdowns, to capture their technostress perceptions and experiences both, while working in their

organizational premises and subsequently, while working remotely. Hence, 24 semi-structured interviews were conducted in total between February and July 2020.

During the first phase, interviews were done face-to-face where possible. During the second phase, lockdown measures adopted by both countries had already affected most organizations. In this context, online technologies (Zoom, MS Teams and e-mail) were used to interview the same participants while observing social distancing measures (ECDC, 2020; WHO 2020). The interview guides for both phases *(Appendices A and B)* were used consistently to validate the conceptual framework of this research.

Each semi-structured interview ranged in duration from 45 minutes to 1.5 hour. Open - ended questions were used to achieve a good level of granularity by asking "how" and "why" questions along with a predefined list of probs and prompts. Interviews were conducted until the research team agreed that more interviews would not generate new significant findings, which implied that theoretical and data saturation had been achieved. Finally, other data sources and methods used to triangulate the findings were: observations and reference to archival documents. These, alongside the field notes kept by the research team helped handling research bias, which is a concern in qualitative studies due to the rich nature of the data that can be interpreted in different ways.

3.1 Data Analysis

To analyse the findings from this study, a thematic analysis and an open coding approach that was a concept drawn from grounded theory (Urquhart, 2013) were employed, thereby, ensuring that data was gathered, analysed and reported meticulously to enhance replicability. Firstly, interviews were recorded and then transcribed. Afterwards, transcriptions were sent to the participants to seek further clarification or validation. Following this, data was analysed using thematic analysis and "open coding", a qualitative data analysis technique drawn from grounded theory (Strauss and Corbin, 1997). Through this process, "first-order data" was identified and extracted from the participants' narratives to create "key concepts" which were then further analysed in relation to the theory from an interpretivist viewpoint. Then, a technique called selective coding was used to form constructs, called "second-order concepts". By doing this, the relationships among the categories emerged. An example of this process can be seen in *Appendix C.*

4.0 Findings and Analysis

Upon analysing the findings from our study, two distinct patterns emerged, showing that the combined extent of centralization and innovation of the organizations regulated their strategies and work practices, which affected the overall levels of autonomy, perceived trust and perceived control of IT use of the individuals. Consequently, individuals' experiences of techno-eustress and techno-distress were influenced by the interplay of these factors. Correspondingly, these two patterns presented distinct outcomes in terms of job performance, engagement and job satisfaction. *Figure 2* presents a summary of our findings along these dimensions, which are analysed and discussed in the next sections.

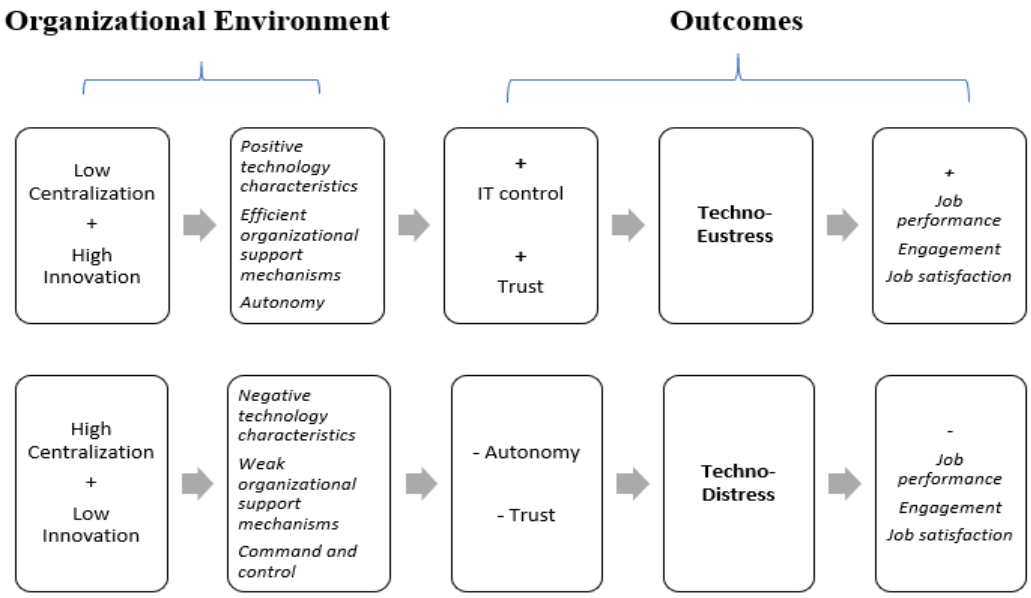

Figure 2. Summary of Empirical Findings

4.1 Techno-Eustress under Low Centralization and High Innovation

With regard to techno-eustress, it became evident quite early into our study that individuals who worked in organizations with a combination of low centralization and high innovation were generally benefitting from a supporting environment that amplified their positive experiences with technologies. This tendency was also observed during the second phase of our study, when work from home became mandatory. As we analysed and interpreted the data, the factors contributing to this

group's frequent experiences of techno-eustress emerged. Namely, positive technology characteristics; efficient organizational support mechanisms and autonomy.

4.1.1 Positive Technology Characteristics

Within the contexts of their highly innovative environments, this group of participants were using engaging digital tools that: 1) allowed them to solve problems efficiently; 2) were motivating; or 3) made them feel connected with other colleagues and involved with their organization.

Firstly, as an example of the first category, two different participants discussed with excitement *Word Lens*®, an augmented reality translation application from *Google Translate*®. This feature enables them to get a translation of a hard copy of a document into another language in real time by simply pointing their phone camera at it. Previously, participants had felt frustration at being forced to type hard copies of original documents posted from international clients to then do the manual translation. Reportedly, using *Word Lens*® provides them with *"a great sense of relief"* or *"an extra level of efficiency"* that helps *"cut down misery!"*, preventing task duplication. Secondly, in terms of motivating tools, a participant in the transport industry enthusiastically described the usefulness of a risk management software called *nTask*®. Typically, the ultimate goal of a scenario analysis is to reach important decisions that help achieve key milestones. Hence, the participant commented how both, her team and herself felt that predicting multiple scenarios in real time gave them "*power"* and felt *"amazing"* because it increased efficient decision-making in terms of time, costs and resources, minimizing former human error.

Thirdly, concerning tools perceived as deepening interpersonal connections within the organization, techno-eustress was reported in relation to several applications. An interesting example are global webcast technologies, such as *GlobalMeet*®, vivaciously discussed by a participant from a multinational organisation in charge of corporate communications: *"I feel employees from our company are treated equally because whenever there is a huge change, we are informed about any changes first…regardless of the position… not through the Media or outsiders. It's incredible that you can create a webcast where all employees form everywhere, every country and branch can connect at the same time. Not through a videoconference, because it would not handle it, but through a global webcast. This is actually an exciting and huge technological challenge"* – P006. Finally, in some of these organizations with a strong digital culture,

Senior Management would proactively incorporate the use of innovative technologies to promote health and well-being initiatives such as walking meetings and step-challenges. For this, smartphones and wristbands were being used and results would be synchronised using e.g., *Fitbit® or Strava®.* These technologies increased perceived techno-eustress as participants would still be focusing on work matters, while simultaneously engaged in improving their wellbeing. Interestingly, these interventions did not only enhanced work engagement, but also helped increase perceived trust towards Senior Management and the organization.

4.1.2 Efficient Organizational Support Mechanisms and Autonomy

In addition to their highly innovative environments, our findings reveal that the low level of centralization of the organizations from the participants in this group resulted in agile work practices and a more relaxed learning environment. As a result, they experienced increased autonomy, both in terms of the technologies they used and how they used them. Moreover, their ability to manage technostress efficiently appeared to be linked to this combination of autonomy and supportive learning environment, more than to other factors, e.g. age. For instance, our findings reveal that although participants from the younger age groups exhibited high self-efficacy, they were not always more tech-savvy than those in the older age group. To illustrate this, some of these younger participants remarked having learned IT skills from older work colleagues; or having *"techie parents"* they could seek assistance from when they were at a crossroads with IT-related issues. Interestingly, for these participants, irrespectively of whether an IT issue lied with the technology or themselves, the trusting environment and efficient organizational support mechanisms of their organization empowered them to engage more easily in positive coping strategies; such as IT control (Pirkkalainen et al., 2019) which resulted in techno-eustress. They would for instance, engage in self-dialogue to calm themselves and accept their emotions; learn at their own pace, prioritize their use of ICTs more mindfully; or ask for information or assistance. Likewise, they would adopt a systematic approach to dealing with IT-related issues; or even allow themselves the time to engage in essential workarounds, such as finding a more suitable tool to accomplish a task. Consequently, the satisfaction from solving issues through positive coping strategies enhanced their perceived techno-eustress. Examples of excerpts from interviews with participants from both types of organizational environments can be seen in *Appendix D.*

4.2 Techno-distress under High Centralization and Low Innovation

Contrary to the techno-eustress findings discussed on the previous section, in more traditional organizations with high centralization and low innovation, our findings revealed higher perceived distrust between Senior Management and employees, which in turn intensified feelings of techno-distress, reducing job performance, work engagement and job satisfaction.

For example, our findings show high levels of techno-complexity, a dimension of technostress caused by the short life cycles of technologies, among the younger participants from this second group. Two main reasons were identified as the cause of their techno-complexity. Firstly, these participants were aware of new applications that could enhance their efficiency and work performance, but they lacked time to learn how to use these newer tools. Secondly, they would usually report to Senior Management from older age groups who would either be resistant to depart from their traditional, sometimes outdated tools, or reluctant to investing in new technologies. In both situations, younger participants were frustrated because of the inefficiency of outdated technologies or frequent systems breakdowns. Remarkably, although these participants exhibited high self-efficacy and would normally use positive coping strategies on the personal realm, the mutual undercurrent of distrust with Senior Management demotivated them from engaging in e.g., IT control coping strategies. Instead, they would restore to venting or disengagement, which resulted in techno-distress.

Equally, distrust was also observed in various participants from this group when questioned about IT support. Their disengagement and frustration became evident as they complained about not being listened to by their IT department; not feeling confident seeking assistance from IT staff; or feeling that Senior Management simply did not care and therefore *"nothing will ever change".*

Additionally, unlike the low centralized, highly innovative organizations, these traditional organizations did not seem to promote enough initiatives to engage employees or promote involvement. When they rarely did, the lack of initial involvement meant that their initiatives were out of tune with the participants' expectations. For example, we denoted enthusiasm when some participants from the former mentioned corporate benefits' applications used by their organizations, due to the rewards matching their values. Notwithstanding, participants from the latter showed either disengagement or disregard when questioned about their corporate benefits' applications.

4.3 Comparative of Technostress Perceptions while Working from Home

Our findings show that participants from highly innovative organizations with low centralization exhibited higher levels of techno-eustress and consequently, increased work performance and engagement also while working remotely during the Covid-19 lockdowns. Naturally, this is not to say that initial hurdles did not occur, giving that the Covid-19 pandemic was an unexpected event that disrupted all facets of life.

However, the digital readiness of their organizations allowed them to telework efficiently while the culture of agility and autonomy extended to their home offices, enhancing their perceived workload and IT control, which had a positive impact in their work-life balance.

For example, these participants reported having gained instant access to the necessary technologies needed to telework or being given the option to buy them and have the costs reimbursed. Also, the culture of trust an innovation seemed to have been consistent through the lockdown. This can be observed when participants eagerly talked about interactive tools adopted during the lockdown to do work tasks, have discussions with colleagues or socialise. For instance, some used *Doodle*® to create polls and coordinate meetings; or *Slack*®'s dedicated channels to organize discussions about specific projects. Interestingly, even innovative but more widespread tools were using sometimes in engaging ways. For example, a participant reported that Senior Management had made a point of starting each Monday of the lockdown in a positive light with what they called a "happy meeting" on *MS Teams*®. In general, using such tools allowed participants to engage and depart from traditional email communications whereas possible, with many reporting having developed a preference for these new applications perceived as promoting *"a collaborative online culture"*, compared to email, *"used mostly to give and receive orders"*. In brief, these participants felt enhanced job satisfaction, performance and engagement while teleworking during the lockdown.

In comparison, the participants from more traditional organizations reported higher techno-distress due to various factors. Firstly, a few of them had to work without adequate hardware for weeks and sometimes, months. This is because the organizations' policies did not allow them to take their usual equipment home, or they were not given the option to buy similar technologies. Sometimes even those at higher levels were not able to perform basic functions such as accessing their desktops. Eventually, some ended up unwillingly going to their offices during the lockdown,

despite having the option to work from home. Saliently, one participant expressed her concern to Senior Management about feeling less productive having to log in from her personal laptop because it was slow but also, because she found it harder to separate her personal and professional emails and notifications, which increased distractions and interruptions. She expressed her disbelief when in response, she was instructed to meet half-way with another colleague and share a company laptop on alternative weeks.

Finally, the findings from this study show that trust also shaped the technostress experiences of individuals in various ways during the lockdown. For instance, most participants from traditional organizations would like to continue teleworking, even if some days per week, once the Covid-19 situation is resolved. Although their Senior Managers have acknowledged that productivity has not declined during mandatory remote work and continuing to do so would save office space costs, the option of working remotely after the pandemic does not seem plausible. *Figure 3* shows the updated conceptual framework for our study.

4.4 Updated Conceptual Framework

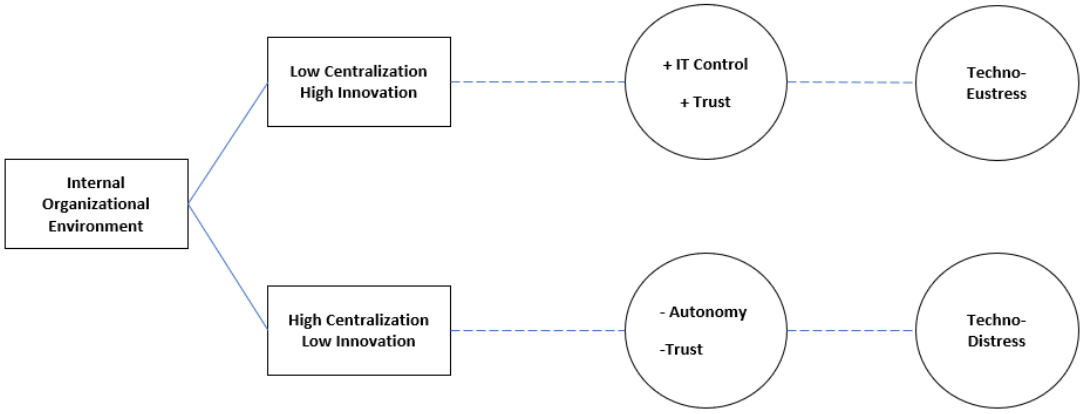

Figure 3. Updated Conceptual Framework

5.0 Discussion

This study aimed to advance understanding on the techno-eustress area by exploring the influence of diverse internal organizational environments on the management and duality of technostress of individuals working in large organizations in the UK and Spain before and during the first Covid-19 lockdowns. The findings from our study

highlight several important factors that are conducive to techno-eustress in the work environment.

Firstly, our study extends Wang et al.'s (2008) study on centralization and innovation, by including techno-eustress. Our findings indicate that the internal environment of an organization plays a pivotal role in the techno-eustress experiences of individuals, through the extent of perceived trust and autonomy of their work environment. Particularly, our findings suggest that the agility and work practices of organizations with low centralization and high innovation cultivate the optimal span of autonomy and organizational support mechanisms to instil collaboration, trust and engagement. As a result, this internal organizational environment configuration amplifies individuals' perceptions of techno-eustress both, in organizational premises and also while working from home. Thus, this study supports that organizations with a strong digital culture and efficient organizational support mechanisms, e.g. a relaxed learning environment, employee involvement in the implementation and use of ICTs and adequate IT support, have a positive effect on the coping strategies used by individuals to manage technostress. Furthermore, trust in the organization was also shown to increase as the technological requirements of individuals are considered through their involvement.

These findings are consistent with the importance of organizational support mechanisms, such as employee involvement and innovation support to reduce techno-distress, as well as their positive effects on organizational outcomes (Ragu-Nathan et al., 2008; Tarafdar et al., 2010). Importantly, our findings support Califf et al.'s (2020) identification of three challenge techno-stressors: usefulness; technical support; and involvement facilitation. The findings from our study extend this knowledge by highlighting organizational support mechanisms as buffers of techno-eustress, through increased trust and productive coping mechanisms. Specifically, under this configuration environment, individuals were found to enjoy more autonomy than in traditional organizations. In turn, they experience higher IT use autonomy, which is the control over how they use ICTs, found in the technostress coping literature to lessen the effects of techno-distress (Tarafdar et al., 2020). As a result, our findings indicate that these individuals tend to use IT control (Pirkkalainen et al., 2019) as a coping mechanism, which results in increased techno-eustress.

Secondly, another important finding from our study is the positive technology characteristics that stimulate techno-eustress experiences. Namely, digital tools that help solve problems efficiently; are motivating; or increase connection with other

colleagues and involvement with the organization. Moreover, our findings indicate that these positive technology characteristics not only increase techno-eustress but also help prevent future techno-distress by boosting efficiency; saving time; and aiding decision-making. Interestingly, the findings from our study are in line with a survey of 20,0000 respondents conducted in organizations in 21 countries that found that in practice, employees working in organizations with a strong digital culture felt twice as productive and four times more engaged than those working in less innovative ones (Microsoft, 2018; BBC News, 2018). This suggests that rethinking ICT strategies and investing in innovative technologies can have a profound effect on employees' well-being and productivity.

Thirdly, our findings also show that the vertical hierarchy of traditional organizations coupled with low innovation tend to strip individuals of involvement over their choice and use of ICTs. Additionally, in this internal organizational environment, open communication and general employee autonomy tends to be lower, hindering trust. This imbalance is reflected in the intense perceptions of techno-distress from the participants, and their reduced job performance, engagement and job satisfaction in organizational premises and while working from home. In the early organizational behaviour literature (Wilkins and Ouchi, 1983; Spreitzer and Mishra, 1999) noticed that micromanaging employees limited their productivity; while giving them autonomy increased mutual trust, which empowered them, resulting in more innovation. Similarly, Cooper et al. (2001), sustain that mechanisms encouraging experimentation and active learning are also regarded as important to lessen employees' IT-related stress. We found our findings have important implications for traditional organizations. This is particularly applicable to remote working and online environments that are becoming the norm, where increased trust in Senior Management and the organization could enhance cooperation and engagement, critical for employees to navigate each day while working from home.

Finally, our findings revealed high levels of techno-complexity among younger participants in traditional organizations. Mostly, due to a perceived misfit between their desired technological environment and the negative assessment of the mandatory tools from their organizations. As per Tarafdar et al. (2020), individuals with good IT skills tend to use their confidence in their abilities to manage technostress more efficiently when faced with an IT-related issue, which offsets the decrease in productivity from techno-distress. However, an interesting finding from our study was that although this

participants had high self-efficacy and would normally use productive coping strategies to manage technostress, under an environment of distrust, they would restore to unhelpful emotional coping strategies, such as venting or disengagement. This finding has significant implications for highly centralized organizations with low innovation. We believe that they should provide adequate organizational support mechanisms that buffer these individuals' "resource accumulation and mastery" (Pirkkalainen et al., 2017) rather than hindering them. Having discussed the findings from our study, the next section highlights implications for theory and practice.

6.0 Theoretical Contributions and Practical Implications

This study provides various theoretical contributions and practical implications. First, our study helps bridge a gap in the technostress literature by introducing a new conceptual framework that incorporates techno-eustress as a construct, providing a holistic perspective that expands previous research limited to techno-distress. Moreover, previous empirical research (Wang et al., 2008) had identified the organizational internal environments that cause the highest and lowest levels of techno-distress. Our study extends their research by identifying the organizational internal environments that help foster techno-eustress experiences instead. Additionally, the theme of trust has also been incorporated. The intersection of these constructs had not been empirically investigated in the technostress literature. Furthermore, IS scholars (Califf et al., 2020; Tarafdar et al., 2017) had suggested that techno-eustress should be studied in different contexts. This research contributes by providing a novel perspective on the management of technostress by means of a two-phase study done in the context of the Covid-19 pandemic. Finally, most technostress studies are quantitative in nature. Thus, conducting this qualitative study and applying the lens of interpretivism has been immensely beneficial as it has allowed us to identify not only internal organizational environments but also technology characteristics and organizational support mechanisms that contribute to enhance techno-eustress experiences. This would have not been possible had we conducted a quantitative study.

Our findings also offer crucial practical implications for practitioners.

Firstly, by identifying technology characteristics that help enhance techno-eustress. Secondly, by providing a deeper understanding of the role of centralization and innovation extents on the management of technostress. For example, our findings

suggest that in traditional organizations with low innovation, the importance of employee involvement, open communication and greater autonomy over their choice and use of ICTs should not be ignored, as doing so leads to decreased trust and higher levels of techno-distress. This is an important implication for Senior Management in highly centralized organizations with low innovation, who should be aware of the benefits that a culture of innovation, agility and autonomy could have on the management of technostress in their organizations. Thus, they could use these findings as evidence to enhance their decision-making when introducing participation mechanisms, ICT strategies and work practices that help increase perceptions of techno-eustress.

Additionally, as techno-distress can bring adverse consequences for individuals both, at organizational premises or while teleworking, interventions can be enriched through more tailored training and development, toolkits, or guidance towards these specific work environments. Managers who recognise this could not only enhance the well-being, job satisfaction and performance of employees but also reduce staff sickness and absenteeism, while improving employee retention. Finally, for Policymakers, the findings could contribute to the development of future policies and guidelines, especially at a time when the societal and economic costs from work stress due to the Covid-19 pandemic need robust policies to protect the workforce. Thus, Policymakers could absorb the findings to help develop policies adapted to the radical reconsideration of working arrangements precipitated by the pandemic, such as teleworking or hot-desking.

7.0 Limitations and Future Work

Despite being one of the early empirical IS studies on the impact of different organizational environments on techno-eustress, our study is not without limitations. Firstly, this research is qualitative in nature and restricted to a small number of participants. Thus, the findings cannot be generalised to the larger population and relatability is sought instead. To overcome this limitation, future studies should use a large sample population and quantitative methods to provide generalization. Additionally, future research could also include SMEs to contrast the impact of their particular centralization and innovation configuration on technostress perceptions with those of individuals working in large organizations.

Secondly, our research was conducted at a time when the first lockdowns in the UK and Spain were taking place to contain the initial wave of Covid-19. Thus, changes in work practices and perceptions of technostress were still evolving. To extend our findings beyond the context of the Covid-19 pandemic, upon finishing this study, we started a longitudinal study based on our conceptual framework. Accordingly, we are currently in the process of collecting data with the aim of explaining the long-term impact of the dynamics of teleworking on technostress. Furthermore, we have expanded our research to Germany and Ireland to enable further cross-cultural comparisons among different geographical locations.

8.0 Conclusions

This research explored and explained the impact of different internal organizational environments on the management of technostress before and during the Covid-19 lockdowns. In essence, due to the outbreak of Covid-19 across the globe, organizations were forced to disrupt and rethink their work practices to adapt to the new normal, where the concept of working from home became mandatory. With these changes, different dimensions of technostress were bound to be experienced by individuals depending to a great extent on the technology characteristics, organizational support mechanisms and internal organizational environments of their workplace. As a result, this research investigated the management of technostress using an interpretivist approach on a sample population of 12 professionals employed in diverse organizations in the UK and Spain.

Our findings suggest that the agility and work practices of organizations with low centralization and high innovation tend to create an environment that fosters connection, collaboration and instils trust. As a result, this internal organizational environment configuration amplifies individuals' perceptions of techno-eustress both, in organizational premises and also while working remotely. In contrast, our findings also show that the vertical hierarchy of traditional organizations coupled with low innovation tend to strip individuals of involvement over their choice and usage of ICTs. Additionally, in this internal organizational environment, open communication and employee autonomy tends to be lower, hindering trust. In turn, this configuration intensifies perceptions of techno-distress, reducing job performance, engagement and job satisfaction in organizational premises and while working from home. The findings

have important practical implications, especially in a technology-dependant post Covid-19 world. For traditional organizations, the findings suggest that more effort is needed to develop and implement strategies that foster an internal environment of innovation, agility and trust to enhance employees' techno-eustress.

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Appendices

Appendix A: Interview Guide First Phase

Overall Theme	Example of interview questions (First Phase - Pre-Covid-19 lockdowns)
Background Information	**What's your job title?** **How long have you been working for the organization?** **What are your main responsibilities?**
Working Practices	**Can you walk me through what a typical workday is for you?** **Can you describe how you do your daily tasks? (e.g. meetings, conference calls, processes, etc.)** **Probe:** Can you describe all the different ICTs you use to accomplish your tasks? **Probe:** Has the organization introduced any of these ICTs more recently or have you been using them since you started? **Probe:** If new ICTs: Can you explain to me how these new ICTs were introduced? **Probe:** If new ICTs: What kind of training, if any, did you receive? Prompt: training; literacy facilitation; technical support **Probe:** How have these new ICTs affected the way you do your work? **Probe:** How have you dealt with these changes? **Probe:** Are there any other ICTs that you use? **Prompt:** desktop, mobile devices, OSN, cloud computing, AI, videoconferencing software, online collaboration tools, etc. **What do you do if you still have tasks due at the end of the day?** **Prompt:** e-mails/phone calls outside working hours/weekends/holidays **Prompt:** Work-life balance
Techno-Distress	**So, you mentioned using x, x and x ICTs. Can you tell me the feelings that you associate with using these ICTs in your workday?** **Probe:** You mentioned feeling … Can you give me an example? **Probe:** Why do you think you felt that way? **How do you normally react to those feelings?** **Probe:** How does it go for you when you manage your feelings that way? **Prompt:** job outcomes; well-being; performance; productivity **Probe:** What do you do to accomplish your tasks when this happens? **Prompt:** asking for help; training; technical support; venting **What is your favorite/least favorite part of using these technologies?** **Probe:** Why? What does that do to you? **Probe:** How do you deal with your feelings when x happens?
Techno-Eustress	**You mentioned experiencing (negative feelings) when using (x ICTs). I am also interested in finding about people's positive emotions when using ICTs. So, can you tell me about any experiences or events where using ICTs made you feel positive emotions?** **Prompt:** satisfaction, engagement, flow, joy, motivation, confidence, resilience. **Probe:** Why do you think you felt that way? **Probe:** How did feeling those positive emotions affected the way you do your work? **Probe:** How do these positive experiences compare with the negative ones we talked about before in terms of the results? **Can you think of any additional positive experiences with ICTs?** **Ideally, how would you like to feel when using ICTs at work?** **Probe:** Can you think of anything that could help you have more positive experiences with ICTs? **Probe:** Can you now think of anything that could help you reduce negative experiences with ICTs? **Probe:** Finally, would you like to add anything else?

Appendix B: Interview Guide Second Phase

Overall Theme	Example of interview questions (Second Phase - Post-Covid-19 lockdowns)
Background Information	**Has your work situation changed due to the Covid-19 lockdown?** **Probe:** If yes, how? Why? Where? **How has the organization been coping with the Covid-19 situation?** **Probe:** Can you describe what changes have taken place? How? Where? Why? Whom has been affected? **How have your responsibilities been affected -if they have- since the start of the Covid19 lockdown?**
Working Practices	**Can you walk me through how a typical workday was for you during the Covid-19 lockdown?** **Can you describe how you did your daily tasks during the lockdown?** **Probe:** What ICTs did you use the most/least during the lockdown? Why? **Probe:** Have these changes affected the way you do you work? Why? How? **Probe:** Has your perception of these ICTs changed? How? Why? **Probe:** Did you use any ICTs which you had not used before? E.g. Zoom; MS Teams, etc. If so, did you receive any training? **Probe:** How have you dealt with these changes? **How did you manage your work-life balance during the lockdown?** **Probe:** Where were you working? **Probe:** Were you working longer or less hours? Why? **Probe:** How were you doing your daily tasks compared to how you used to do them before the lockdown? **Probe:** How has your productivity been affected? **Probe:** Has your wellbeing been affected? If yes, why? How?
Techno-Distress	**So, you mentioned using x, x and x ICTs the most/the least during the lockdown. Can you tell me the feelings that you experienced when using these ICTs?** **Probe:** Why did you feel this way? **How did you react to those feelings?** **Probe:** How did it go for you when you managed your feelings that way? **Prompt:** job outcomes; well-being; performance; productivity **Probe:** What did you do to accomplish your tasks when this happens? **Prompt:** asking for help; training; technical support; venting **What did you enjoy/dislike the most about using these ICTs during the lockdown?** **Probe:** Why? **Probe:** (If negative feelings) In retrospect, what could have helped you enjoy your use of these ICTs more?
Techno-Eustress	**As you know, I am particularly interested in finding out about people's positive emotions when using ICTs. So, can you recall situations when using ICTs during the lockdown made you feel positive emotions?** **Prompt:** satisfaction, engagement, flow, joy, motivation, confidence, resilience. **Probe:** Why do you think you felt that way? **Probe:** How did feeling those positive emotions affected the way you do your work? **Probe:** How do these positive experiences compare with the negative ones we talked about before in terms of the results? **Can you think of any additional positive experiences you had while using ICTs during the lockdown?** **What would you have done differently to increase your positive experiences with ICTs during the lockdown?** **Probe:** Why? How? Where? When? **What changes has the organization made to adapt to the "new normality"? How will these changes affect you?** **Probe:** Finally, would you like to add anything else?

Appendix C: Example of Interpretation Process

Theme	First-Order Data	Key Idea	Second-Order Data
Techno-Eustress	*"There is an application that you can download in your computer and if you focus the camera on the text that you are viewing, it translates it automatically. That was amazing! I can speak a few languages so for me, European languages, such as English, French and Spanish are not a problem but we've got bills from Dubai, China, Thailand, Russia and firstly we don't speak these languages but also those languages have different alphabets. But with this tool we could do automatic translations... If I have an invoice in Chinese, I can't understand anything so it was a really, really helpful tool… Automatically, you see a picture with the text in German or Spanish instead of in Chinese of Russian… I felt release... It was like: "OK, I can go on with my work" because otherwise, you have to process the invoice, to introduce details in your system that you can't get from this paper because you don't understand anything… You can't do your job… but by having this translation you can go on with your daily tasks."* - P009	This feature enables the participant to get a translation of a hard copy of a document into another language in real time by simply pointing their phone camera at it. Previously, participants had felt frustration at being forced to type hard copies of original documents posted from international clients to then do the manual translation.	Innovative tools that increase efficiency by simplifying otherwise time-consuming tasks are deemed useful by the participant, who does a positive assessment of the technology characteristics of this tool. The perceived usefulness acts as a buffer of techno-eustress.
Techno-Complexity	*"There are lots of things I could be doing and I would like to start implementing, but there's another barrier as I would have to invest some time learning how to do that before I actually put it into practice. So it's that kind of trade-off of how much time you put in at the beginning, when you just want to get work done and how much time you would save eventually if you were using these better structures. I think for me a lot of distress comes from feeling annoyed with myself and not having done things better. In that I know if I had taken the time to learn how to use this tool I will be working more efficiently and that's the kind of frustration, I guess…"* - P008 *"So, actually in this area I do feel technostress because I could never invest enough time or resources to really have a feeling that I can control these ICTs… so I always had this feeling that I could have managed these tools better or finding more tools that could help me do my job."* - P007	These participants from the younger age group describe feelings of frustration due to experiencing one specific dimension of technostress: techno-complexity; which is not having enough time to learn about new tools or keep up with technological advances	Despite these participants having a high level of self-efficacy and belonging to the younger age group, they experience techno-complexity. The feeling is particularly frustrating because they are aware of how they would benefit from the productivity they would gain if they could invest time in learning.

Appendix D: Evidence from Interview Excerpts

Construct	Evidence from Interview Excerpts
Techno-eustress	*"My boss introduced the 'happy meeting' routine via MS Teams to start some meetings by sharing positive experiences from the previous days. It was a good way to achieve a positive mindset. It was fun to use 'gifs' and nice to receive unexpected calls from colleagues just to say 'hello', trying to replace the missing contact at work. It helped to balance the negative emotions and remain motivated. The positive experiences were less but more powerful thanks to these tools" – P011*
Positive technology characteristics	*"Slack is a really good mobile App. It's definitely the kind of project management and workplace management tools that are the most comfortable. I remember sending a message to the general channel on Slack and it gives you a warning: 'you are going to notify 115 people in 13 different time zones. Are you sure you want to continue?'... That's quite good because then it makes you think about who's actually going to read the messages, rather than just sending them out into the void in the way that lots of messages get sent." - P009*
Efficient Organizational support mechanisms	*"OK, so…here's another very good thing that our company has done for us: they paid for new equipment when we started working from home. So, I got myself an ergonomic chair, a screen, a laptop. Obviously, I paid with my own money, but then I provided the company with the invoice. I must tell you that since then my quality of work has changed. Finally, I'm comfortable, nothing is sore! A lot of people applied for this, because everyone would, given the opportunity. Also, if I resign from work, they are not taking anything back, it's all mine to keep!" – P006* *"Sometimes I think I have such a good relationship with IT because someone told me just to take my time, get comfortable with it, not just: 'do it, do it, we are using this to work!'... Instead, the culture was like: 'It's a good tool, so many people are using it, it's not complicated'... So it was also about how the message was conveyed…I mean, when you take time you are faster than when you are under pressure, because you are just relaxed, your mind is working, it's not under stress." - P002*
Autonomy	*"I'm very lucky because my work allows me to switch off easily. Unless I'm on a work trip I don't need to worry about emails once I've finished work, I just switch off my mobile phone and my laptop. You always have the temptation to take a look and check: 'is everything OK?', but I don't need to do that. I'm neither forced nor expected to do that.– P011*
IT control	*"I accept there will be IT issues and I am really aware of how lucky I am to have the circumstances that I have, so I allow myself a quick moan because it's for free, normal and sometimes therapeutic; but then I quickly focus on the solution or on the positive side. I will stand up and go outside for 5 minutes, drink water, breath; try to analyse the situation from a different perspective and ask for help if necessary." – P010*
Trust	*"Our company has introduced work from anywhere in the middle of Covid-19, for office associates. I like the idea of this, as there is an immense sense of trust and gives us a little freedom. We had a global survey recently asking associates how they felt about working from home and in the office. Most responses came back with 'would prefer to work from home'. It allows us to be flexible." – P005*

Techno-distress	*"During the lockdown I was experiencing much more eye strain than usual and I also had palpitations because I felt unproductive while doing my daily tasks due to the lack of suitable tools. I felt frustrated and annoyed in general with the situation" – P003*
Negative technology characteristics	*"IT crashing is a major issue in our company because our HR system would always crash…I just feel like in this day and age, things like a slow system or crashing like that… that shouldn't be a thing. Such a basic thing, just fix it, being such a massive company. it's not just affecting us internally; it's actually affecting customers because their customers can't get a quote because the system is down… But I don't understand how they don't see that as an issue. If you're not going to do it for the staff members, you're going to surely want to do it for the customers who are making you the money." – P004*
Weak organizational support mechanisms	*My organization had us taking turns to work from home one or two weeks per month. The only changes taken place have been negative because we have been forced to use our own computer at home, with our own mobile phones… and pay all the typical bills, such as electricity and heating from our pocket… I can only say that my daily tasks were done very uncomfortably... Very slowly comparing with when I was at the office. I had no printer, no scanner and no second screen… I am less productive and I've told them how I feel but they don't care. The solution they gave me was to share a work laptop with another work colleague. They told us to meet somewhere in the middle between work and home to share the same laptop!" – P008* *It's very frustrating trying to try to get the message across to IT, it's just almost like you're talking to a brick wall…. I'm sorry, but I have to say it: we just sit in the office and b*#ch about IT…there's nothing else, I mean: we've said it to them, said it to our managers and nothing's changing so…apart from that, what else is there rather than to sit there and moan about it all day long? You just got used to it." – P004*
Command and control	*"Working from home is not going to become the norm for us, in my opinion, because Senior Management would rather have their employees close to them. They do not focus on our results, only on the hours we work at the office" – P003*
Techno-complexity	*"I want to be able to choose the tools I work with; I don't want someone else to choose for me. Especially if you move into a new workplace, and you know there are more efficient systems out there, but you have to use their systems in order to be compatible. Sometimes some systems are clunky, you know, and it seems like there is a more streamlined solution… and that's frustrating" – P007*
Distrust	*"Um, so, I think in my life I've rarely used IT support partly because I'm a little intimidated by them, because I feel like I can't necessarily speak the language that they speak, and that they will think I'm stupid. If I've made a mistake or messed something up and broken something, I'm afraid of them knowing what I've done. I think partly it's because sometimes people make fun of you for doing stupid things with your computer, and I don't like that. I want to feel competent. I think partly it's also that I'm a woman. I want to show that I can deal with technology and that computing isn't just a men's thing. So I want to be self-reliant and I don't want to waste people's time" – P012*