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Technological stress and the intention to stay in organizations: Do the quality of life and work-home conflict mediate this relationship?

Estresse tecnológico e a intenção de permanecer nas organizações: A qualidade de vida e o conflito trabalho-lar medeiam essa relação?

Estrés tecnológico e intención de permanecer en las organizaciones: ¿La calidad de vida y el conflicto trabajo-hogar median en esta relación?

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ABSTRACT
This quantitative descriptive study discusses the effects of technostress on work-home conflict, on quality of life and on intention to stay in organizations among the Information and Communication Technology (ICT) users' in their daily work. It is a descriptive and quantitative research with 473 respondents from both public and private companies. The results confirm the negative effects of technostress creators and the positive effects of technostress inhibitors in work-home conflict, quality of life, and the intention to stay in organizations. Finally, quality of life partially mediates the relationship between technostress and the intention to stay in the organizations.
Keywords: technostress; work-home conflict; quality of life; intention to stay; organizations.

RESUMO
Este estudo descritivo quantitativo discute os efeitos do estresse tecnológico no conflito trabalho-casa, na qualidade de vida e na intenção de permanecer nas organizações entre os usuários de Tecnologia da Informação e Comunicação (TIC) em seu trabalho diário. É uma pesquisa descritiva e quantitativa com 473 respondentes de empresas públicas e privadas. Os resultados confirmam os efeitos negativos dos criadores do estresse tecnológico e os efeitos positivos dos inibidores do estresse tecnológico no conflito trabalho-casa, na qualidade de vida e na intenção de permanecer nas organizações. Por fim, a qualidade de vida medeia parcialmente a relação entre o estresse tecnológico e a intenção de permanecer nas organizações.
Palavras-chave: estresse tecnológico; conflito trabalho-lar; qualidade de vida; intenção de permanecer; organizações.

RESUMEN
Este estudio descriptivo cuantitativo analiza los efectos del estrés tecnológico en el conflicto trabajo-hogar, en la calidad de vida y en la intención de permanecer en las organizaciones entre los usuarios de las Tecnologías de la Información y la Comunicación (TIC) en su trabajo diario. Se trata de una investigación descriptiva y cuantitativa con 473 encuestados de empresas públicas y privadas. Los resultados confirman los efectos negativos de los creadores de estrés tecnológico y los efectos positivos de los inhibidores del estrés tecnológico en el conflicto trabajo-hogar, la calidad de vida y la intención de permanecer en las organizaciones. Finalmente, la calidad de vida media parcialmente la relación entre el estrés tecnológico y la intención de permanecer en las organizaciones.
Palabras clave: estrés tecnológico; conflicto trabajo-hogar; calidad de vida, intención de permanecer; organizaciones.

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1 INTRODUCTION

Users of information technology experience the organizational phenomenon of technological stress or technostress understood as the employees' inability to deal with new technologies healthily (Tarafdar, Tu, Ragu-Nathan & Ragu-Nathan, 2007). Technostress comes from the constant technological changes and the need to adapt to the dynamics of the external environment, which has modified social relations and the notions of space and time (Andrade, Oliveira & Hatfiel, 2017). It is manifested by the resistance to accept new technologies, generating workers' phobia and aversion to computers (Anyaoku, Osuigwe & Oguaka 2015).

Information and Communication Technology (ICT), according to Afolabi and Abidoye (2011, p. 114), refers to the 'use of electronic devices such as computers, telephones, internet, satellite system, to store, retrieve and disseminate information in the form of data, text image and others'. ICT covers personal computers as well as corporate, manufacturing, collaborative applications and connectivity tools, which demand different knowledge domains in order for the user to obtain better results with their use. On the one hand, such technologies contribute to the flexibility of work routines, optimization of results, and more efficient management of processes through instant messaging applications on cell phones. On the other hand, these technologies lead to greater surveillance due to remote supervision, social isolation, abstraction from work or even mental and physiological tension (Ragu-Nathan, Tarafdar & Ragu-Nathan, 2008; Lee, Lee & Suh, 2016).

The increasing growth in work demands generated by ICT use has also significantly influenced the total time devoted to labor practice. It is now common to receive messages related to work after daily work activities or during periods of rest, vacation and absence. Such occurrences can be understood as intrusions into the worker's personal life, compromising her/his quality of life (Carlotto & Wendt, 2016). Recent evolution of digital technologies goes beyond organizational limits, bringing impacts not only for work and career development, but also for these professionals' personal and family lives (Molino et al., 2020; Andrade, Oliveira & Hatfiel, 2017). As a result, it becomes a breeding ground for technological stress (Carlotto & Wendt, 2016).

Thus, the vagueness of boundaries between work and family life acts as an additional tension trigger, in face of the limitation of individual resources as time and energy and that increases the conflict between these two stamens of her/his life. New gadgets (equipment that has a specific purpose and function, practical and valuable in everyday life) and software are resources that keep the professional connected to work. In other words, the work is carried out beyond the organization space (Ayyagari, Grover & Purvis, 2011), guiding the routine of career-oriented professionals. These individuals, in turn, are also affected by family interaction through ICT within their work environment (Cappellozza, Moraes & Muniz, 2017). This ambiance forces the professional to remain connected to work, such as access to e-mail, even outside the work environment (Brown, Duck & Jimmieson, 2014). Consequently, the creators of technostress and increasing work-home conflicts increase emotional, physical and mental exhaustion, affecting the professionals' turnover intention (Carliff & Brooks, 2020; Califf, Sarcker & Sarcker, 2020; Boyer-Davis, 2019).

Given these arguments, this research aims to discuss the effects of technostress on work-home conflict, on quality of life and on the intention to stay in organizations among workers who use Information and Communication Technology (ICT) on daily basis labor.

There are several studies in the Scopus Elsevier database on the creators of technostress in several countries. Some more recent studies are those by Molino et al. (2020), who analyzed the relationships between the creators of this stress in the work-home conflict and behavioral stress during the Covid-19 pandemic in Italy. Califf, Sarcker and Sarcker (2020) researched the relationship between two types of technostress: onene related to challenge (promoting the fulfillment of tasks) and the other related to impediment (obstacles that prevent the fulfillment of tasks). They investigated, satisfaction, exhaustion at work and healthcare professionals employees' intention of turnover in the United States. Christ-Brendemühl and Schaarschmidt (2020) studied the relationship between technostress in service segment employees and customer's satisfaction and delight.

Pirkkalainen, Salo, Tarafdar and Makkonen (2019) showed how information technology users are dealing proactively and reactively with technostress creators. Also, Boyer-Davis (2019) analyzed the relationship between organizational commitment and job, and life satisfaction with technostress creators and the intention of job turnover among accounting professionals in the United States. The study by Hauk, Göritz and Krumm (2019) addressed the interaction between chronological age and technology-related tension, through technostressors and choices of coping strategies in organizational environments, with professionals from Germany, Austria and Switzerland.

In Brazil, in turn, there are few studies published in the Anpad Spell (Scientific Periodicals Electronic Library) database on technostress. As a latent dependent variable, technostress was used by Sousa and Cappellozza (2019) to discuss the effects of different professional leadership styles and the effect of internet addiction on the perceived technostress in the workplace.

As an independent construct, it can be found in the research by Marchiori et al. (2020), who discussed the impacts of technostress on job satisfaction and on organizational commitment of public servants and in Crispim's. Besides, Cappellozza (2019) covers the relationships between conflict of roles, trust in management, distributive justice, and technostress with employees' emotional, physical and mental exhaustion. Duarte, Motoki and Mainardes (2018) investigated the relationship between technostress creators and job satisfaction. The studies by

Marchiori and Mainardes (2016; 2015) addressed the relationship between the factors that create technostress and the perceived quality of internal information technology services. There are also researches about the differences between men and women concerning technostress and coping strategies, by Carlotto (2011), and those that address the relationship with career, life satisfaction and work-family interaction, by Carlotto and Wendt (2016). Unlike the studies cited above, the latter two do not use the Ragu-Nathan, Tarafdar and Ragu-Nathan (2008) and Tarafdar et al., 2007) scale.

In other words, this theme is little researched, according to Beltrame and Bobsin (2021). They conducted a bibliometric study with 327 academic publications on technostress in 2000-2020, using the Web of Science database. Also, there are still no studies covering the constructs proposed in this research in an integrative model, and most studies use only the technostress creators.

This study goes beyond the technostress creators. It also analyses the inhibitor effects. Thus, this research contributes with an integrative model by showing the creator and inhibitor effects in the work-home conflict, the quality of life, and the intention to stay in the organization. It highlights the partial mediating role of quality of life in the relationship between technostress and the intention to continue working in the same organization. It also contributes to showing the relevance of strategic people and technology management policies to mitigate the effects of the work-home conflict and avoid more significant employee turnover.

2 THEORETICAL FRAMEWORK

2.1 Technostress

Information and Communication Technology (ICT) was introduced in the public sector to improve processes and offer better services to citizens, comprising an advance in administrative bureaucracy, due to the quick and precise responses to requests for consultations (Garcia & Belinni, 2013). The popularization of computers led to expanded advances to the detriment of ICT use, such as the need to automate the bureaucratic routines typical of public administration, creating intense pressure on the government to search for change (Reis, Dacorso & Tenório, 2015). In the private sector, ICT was introduced to give more flexibility, modernity and speed to business processes. A practical example of these changes is in the banking sector, one of the pioneers in technological innovation (Jollivet, 2003).

Arnetz and Wiholm (1997) pointed out, in the 20th century, that employees in modern office environments reported suffering from psychosomatic symptoms related, in part, to high mental demands combined with a lack of sufficient skills. This organizational phenomenon continues in the 21st century due to the introduction of new digital technologies (Stadin et al., 2021; Califf & Brooks, 2020; Molino et al., 2020). The perceived low organizational efficiency correlates with the high mental stress among employees. Some adverse effects of using technologies in the workplace are loss of personal contact, social isolation and difficulties with supervision and teamwork. Other effects are the increase of work at home, removing the borders between work and home, and an expectation that workers will always be available. This trend has been called 'technologically linked workers' (Murray & Rostis, 2007).

Although there are positive impacts of technology at the individual, organizational and societal levels, evidence indicates that human-machine interaction, in a private and organizational context, can lead to observable stress perceptions in users in the workplace. This type of stress is called technostress or technostress. It is characterized by feelings of anguish, loss of sleep, disturbances during vacation, due to the possibility of job loss or due to being replaced by new, better-trained professionals (Ferreira, 2006).

Workplace stress occurs when an individual is presented with a task or situation that he/she believes is beyond his/her ability to complete or failing to complete the task has negative consequences (Tarafdar, Tu, Ragu-Nathan & Ragu-Nathan, 2010). Work stress or job stress or occupational stress is often experienced as depression, anxiety, frustration, feelings of oppression or job dissatisfaction, among other outcomes. In organizational psychology, the term stressor 'is a predictor of stress and a strain is a consequence of stress' (Bewett, Shaw, LaMontagne & Dollard, 2006, p. 10).

How individuals change due to technology is manifested in two distinct and correlated ways. The first is called technophobia, which is the aversion to technological means, and the second, technophilia, believes that their success depends on technology (Osiceanu, 2015).

In this context, the factors that create technostress in the employee are: (i) techno-overload: understanding that he/she needs to work faster because of technology; (ii) techno-invasion: it is unable to separate personal and professional contexts; (iii) techno-complexity: as technology advances, one's skills are outdated concerning colleagues'; (iv) techno-insecurity: his/her position in the organization is threatened due to the lack of adaptation to technological changes; and (v) techno-uncertainty: their knowledge is obsolete due to the transformations resulting from the submission of the work environment to technology (Ragu-Nathan, Tarafdar & Ragu-Nathan, 2008; Tarafdar et al., 2007).

The factors that inhibit this stress are (i) literacy facilitation: through training; (ii) technical support provision: through available professional and helpdesk; and (iii) involvement facilitation: communicating changes, benefits and opportunities with the insertion of new technologies (Ragu-Nathan, Tarafdar & Ragu-Nathan, 2008; Tarafdar et al., 2007).

ICT allows to connect people almost anywhere and anytime. However, to keep up with the fast pace of new information and communication technologies, employees

need to constantly renew their technical skills and withstand the pressure of a more complex system and higher productivity expectations (Joly, 2004). Studies have found that technostress has a significant negative impact on employee productivity (Tarafdar et al., 2007). In highly centralized and innovative organizations, the general level of technostress is the highest. On the other hand, in organizations with low centralization and innovation, technostress is the lowest (Wang, Shu, Tu & 2008).

Ragu-Nathan, Tarafdar and Ragu-Nathan (2008) suggest that technostress inhibitors are organizational mechanisms that reduce this type of stress. They cover tools and organizational adjustments capable of mitigating the negative effects of using information technologies, such as technical support for end-users and organizational support, especially in the first days of user adaptation. Thus, through training, discussions about new technology projects, or planning technological changes, there is an anxiety reduction, whose implementation is done in stages and with the end user's participation.

Given the above, the triggering constructs impact workers' quality of life negatively, while inhibitors influence it positively (Tarafdar et al., 2007). In other words, technologies contribute to both positive and negative aspects with regard to exhaustion and stress.

2.2 Work-Home Conflict

Recent research on the work-home connection implies the use of current research, which integrates the boundary between the work domain and the home domain as a social construction (Cerqueira, Felix, Galon & Souza, 2016; Cappi & Araújo, 2015). The existing literature addresses the work-home theme from three issues: (i) time management; (ii) conflict between roles (overload and interference of those roles); and (iii) organization and planning for the care of dependents (Bielenski et al., 2002).

The Boundary Theory attempts to answer questions related to roles and the work-home connection. The focus is on understanding the creation of boundaries and how the simplification and organization of the environment in which the individual is inserted occur (Cappi & Araújo, 2015). Such theory aims to understand how the work-home relationship is created and sustained and how the individual changes his boundaries to balance the world around him/her. Thus, these borders have the objective of delimiting the contour of the domain since the individual tries, in a certain way, to minimize the effects of the role transition due to their desire to increase the efficiency of all the obligations that he/she has taken (Cerqueira et al., 2016; Cappi & Araújo, 2015).

Since the 1960s, studies on the links between professional and family roles have been increasing. They were originally related mainly to women and work-at-home stress (Lewis & Cooper, 2005). New concepts have emerged, such as work-home balance, work-home accommodation, work-home remuneration, work-home segmentation, work-home enrichment, work-home expansion and conflict, or work-home interference (Burke, 2004).

The concept of work-home balance precededs the concept of work-life balance and entails: 'to what extent individuals are equally involved and satisfied with their role at work and their role in the family' (Greenhaus & Singh, 2003, p. 2). Therefore, it is implied that the work-home conflict could be easily resolved by giving equal priority to both performances. In focusing on employees with family responsibilities, however, the notion of work-home balance was seen in practice as a trigger to a reaction in the workplace among non-parents (Haar & Spell, 2003).When employees' needs are not met, they are expected to experience stress in their professional lives. For those without responsibilities to care for dependents, stress can be partially or totally compensated by other factors, such as material rewards or good job performance (Gallie, 2005; Green & Tsitsianis, 2005).

Priorities for balancing employees' work-home are considered within three general categories: (i) working hours (total hours of work and flexibility); (ii) rights to parental leave - maternity, paternity, parents and guardians (for those with parental or other care responsibilities); (iii) daycare - subsidies or direct provision (McDonald, Brown & Bradley, 2005; Thornthwaite, 2004).

European research suggests that the unmet demand for work-life balance (especially a mismatch between the desired hour load and the actual one) increases, with possible adverse consequences for employees' well-being and performance at work (Gallie, 2005; Green & Tsitsianis, 2005).

Currently, as we pinpoint workers and professionals from various areas of activity, it is commom to see conflicts between the reality of the home and the obligations of work (Chang, McDonald & Burton, 2010). This way, the work-family conflict can be understood as 'a form of conflict between roles, that is, mutual incompatibility between performance pressures in the domains of work and family. Participation in the role of work (family) is made difficult by participation in the role of family (work)' (Greenhaus & Beutell, 1985, p. 77).

Molino et al. (2020) found positive relationships between the creators of this stress in the work-at-home conflict and in behavioral stress during the Covid-19 pandemic, in Italy. Ayyagari, Grover and Purvis (2011) showed that utility, complexity, reliability, intrusiveness and the pace of technological changes are related to work overload, the ambiguity of roles, invasion of privacy, conflicts at home and insecurity in the work in the United States employees.

Thus, this study proposes:

Hypothesis (H1): Technostress creators positively affect the work-home conflict.

Hypothesis (H2): Technostress inhibitors negatively affect the work-home conflict.

2.3 Quality of Life

Quality of life is a multifaceted concept measured by the use of several instruments, which, in turn, embrace several factors, such as physical and psychological quality of life, leisure time, learning, friends and friendship (Medvedev & Landhuis, 2018; Panzini et al., 2017; Lindner et al., 2016; Ruževičius, 2013; Theofilou, 2013).

It is an essential concept in many fields of science – sociology, political science, philosophy, marketing, environmental studies, medicine – but each academic discipline develops different perspectives (Ruževičius, 2013). That is, it 'has intersections with biological and functional concepts, such as health status, functional status, and disability; social and psychological concepts such as well-being, satisfaction, and happiness' (Panzini et al., 2017, 264). For the World Health Organization (WHO, 2021), quality of life is the 'individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns'. Its questionnaire, translated into several languages, it covers the quality of physical and psychological life in social and environmental domains. Medvedev and Landhuis (2018) showed high positive correlations between happiness, psychological and health domains of quality of life (using the WHO questionnaire), life satisfaction and positive affect among Australian university students.

Quality of life can be understood from two dimensions: subjective and objective. Subjective quality of life refers to personal assessments of the individual's living conditions (income, security, health, education), that is, how people appreciate their lives (e.g., how safe they feel on the street, how satisfied they are with income, security, health, education). Objective quality of life refers to impartial assessments of these living conditions, referring to observable success criteria (Chesters, Simona & Suter, 2021; Nakamura & Managi, 2020; Şahin, Özer & Yanardağ, 2019; Veenhoven, 1996).

Thus, the measurement of quality of life can also include subjective measures of workers such as leisure time (e.g. 'I am satisfied with my leisure time: I have the opportunity to do what I want in order to relax and enjoy myself'), creativity (e.g. 'I am satisfied with opportunities to be creative – to get to use my imagination in my everyday life, in a hobby, on the job, or in my studies'), learning (e.g., 'I am satisfied with my learning – I have the opportunity and desire to learn new, exciting things and skills that interest me'), friends and friendship (e.g. 'I am satisfied with friends and friendships – I have friends that I associate with and who support me (as many friends as I want and need)' (Lindner et al., 2016).

Arnetz (1997), a study on physical, mental and psychophysiological reactions of office workers who used ICT regularly had already shown that several stress-related- psychosomatic disorders had been identified. These disorders include sleep disorders, psychophysiological stress and somatic complaints. Lee, Lee, and Suh (2016) showed that technostress based on social interaction stressors (excessive communication, social insecurity and compulsive use) by the use of ICT, in particular, the use of instant messaging through mobile applications, after hours, has a positive effect on tension, which in turn negatively influences the productivity and quality of life of Korean employees. Crispim and Cappellozza (2019) pointed out that both the role conflict between employees and technostress positively impact work exhaustion related to the physical, mental and emotional exhaustion of professionals working in Brazil. Moro, Ramos and Rita (2020) revealed that exhaustion is the main reason for dissatisfaction with the work of IT employees. Pfaffinger, Reif and Spie (2020) showed the negative effects of technostress involving the demands of ICT on the well-being of employees in Germany concerning stress, tension and quality of sleep.

Considering that 'an employee's quality of life is an important factor for the well-being of the society' and that the perceived tension can affect both productivity and the quality of life of employees (Lee, Lee & Suh, 2016, p. 7), the hypothesis is proposed:

Hypothesis (H3): Technostress creators negatively affect the quality of life.

Institutions have searched for knowledge and formulation of policies to support employeesso that they can reach a common denominator of balance, aimed at professionals' quality of life. Thus, these policies aim at facilitating and contributing to the fullfillment of responsibilities in both the professional and family spheres (Beauregard & Henry, 2009). Fuglseth and Sørebø (2014) showed that employees' perceptions of technostress inhibitors in their organizational environments are positively associated with their level of satisfaction with ICT use. However, there is no relationship between the inhibitors and the intention to extend the use of ICT. Pfaffinger, Reif and Spie (2020) also pointed out that technostress inhibitors moderate (weaken) the effects of the creators of this type of stress on the well-being of employees in Germany, regarding stress, tension and sleep quality.

Thus, the following hypothesis is also proposed:

Hypothesis (H4): Technostress inhibitors positively affect the quality of life.

2.4 Intention to Stay in Organization

The decision of employees to stay or leave may depend on whether the job is challenging and whether they receive support for personal growth. Although individual effort is emphasized, the career literature has shown a convergence between individual and career development taking into account an organized and planned effort to balance the individual's professional needs and the organization's needs (Lips-Wiersma & Hall, 2007).

The consequences of technostress include the commitment to the organization and the intention to stay,

both characterized by the belief in the acceptance of the organization's objectives (Ragu-Nathan, Tarafdar & Ragu-Nathan, 2008). Cappi and Araújo (2015) add that the intention to stay in the job is a behavioral attitude, which, when carried out, culminates in the complete separation between the individual and the organization. They also add that the intention to stay concerns certain deviations in the behavior of employees, generating a loss to the organization of that valuable workforce.

According to Ragu-Nathan, Tarafdar Ragu-Nathan (2008), remaining at work establishes a positive relationship with commitment due to the employee's perception of perceived costs as well as their less attractive alternatives if they decide to leave the company. Therefore, the lower the commitment to the organization, the lower the identification with the institution's objectives, reducing the perceived costs of leaving (greater attractiveness to other alternatives). This finding maintains that the factors that inhibit technostress expect to increase the commitment to stay.

Technological stress at work and its symptomatic effects, on the other hand, are associated with the susceptibility to leave the job. Thus, greater stress leads to greater employee turnover since this factor is directly related to the intention not to stay, according to the study by Gamage and Herath (2013) with information technology professionals, in Sri Lanka.

As exhaustion increases, there is less job satisfaction and, therefore, increased levels of intention to turnover. This satisfaction refers to cognitive, affective and behavioral responses to work activity. They are evaluated through work features, emotional responses to events that occur, and job-related behavioral intentions (Angulo & Begoña Osca, 2012).

Individuals who suffer from constant stress perceive little or no chance of changing this reality. So, understandably, they experience dissatisfaction with their work: a state that is psychologically draining. The way to get rid of this unpleasant situation is to consider leaving their current job, the source of their pain (Tziner et al., 2015).

Carliff and Brooks (2020) found evidence that technostress creators increase the emotional, physical and mental exhaustion of teachers in the United States, which, in turn, have a positive effect on turnover intent. That is, the greater the Burnout Syndrome, the greater the intention to leave the organization. Another study with healthcare professionals in the United States showed that two types of technostress related to the challenge (promoting the fulfillment of tasks) and the impediment (obstacles that make it challenging to accomplish the tasks) are connected to positive and negative psychological responses, respectively. Moreover, such responses are linked to job satisfaction and wear and tear, which impact the turnover intention of these professionals (Califf, Sarcker & Sarcker, 2020).

Boyer-Davis (2019) analyzed the relationships between organizational commitment, satisfaction with life and work with the creators of technostress, indicating a relationship between this type of stress and turnover intention among accounting professionals in the United States.

The study by Ragu-Nathan, Tarafdar and Ragu-Nathan (2008) confirmed the positive effect of inhibitors on staying at work. They add that the factors that inhibit technostress increase the commitment to stay. Liu, Zhu, Wu and Mao (2019) pointed out that stress positively influences rotation intention, that is, the intention to stay in the organization. In this scenario, the following hypotheses are proposed:

Hypothesis (H5): The technostress creators negatively affect the intention to stay in the organization.

Hypothesis (H6): The technostress inhibitors positively affect the intention to stay in the organization.

Al Zamel Abdullah, Chan and Piaw (2020), through a literature review, found evidence that several factors such as job satisfaction, environment and intimidation, and quality of life are associated, negatively and positively, with the nurses' turnover intention to leave or stay in the organization, respectively. Another study done with nurses in Malaysia showed a negative relationship between quality of life and the turnover intention, partially mediated by organizational commitment (Al Zamel Abdullah, Chong and Chua, 2020).

Given the above, this study proposes:

Hypothesis (H7): The quality of life positively affects the intention to stay in the organization.

The work-home conflict has been one of the main discussions in the work-home balance, even being considered one of the leading causes of the intention to change jobs (Colombo & Ghislieri, 2008; Boyar, Maertz, Pearson and Keough, 2003; Allen, 2001). Particularly, the interaction between worker-technology-organization has triggered in the professional, the loss of quality of life until he/she reached the point of abandoning work due to having his/her personal life invaded (Carlotto, 2011).

Nelson et al. (2020) studies on elderly professional caregivers highlighted job satisfaction, work-home conflict, stress and the intention to leave the job, based on qualitative and quantitative data. Findings show that 24% had the intention to leave job due to the conflict between the latter and the family. The study by Yamaguchi et al. (2016) stated that the intention to leave is more frequent in nurses who work in hospitals. In that environment, the work-home conflict was more evident due to the difficulty of reconciling family and professional obligations.

Therefore, this study also argues that technostress can impact the intention to stay in the organization. Thus, the following hypothesis is also proposed:

Hypothesis (H8): The work-home conflict negatively affects the intention to stay in the organization.

Figure 1 shows the theoretical model for this research.

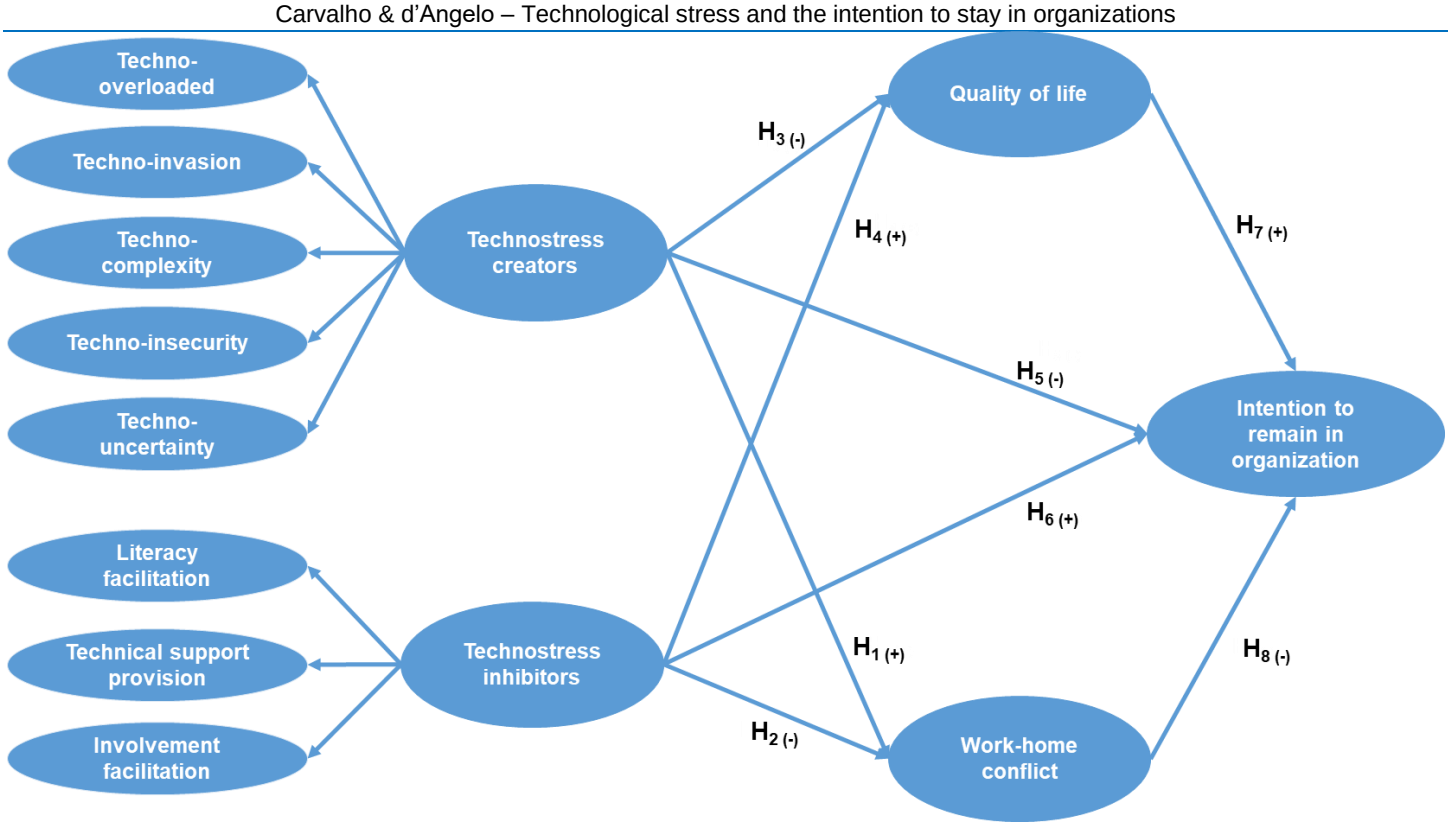

Figure 1. The proposed theoretical model.
Source: Developed by the authors.

3 METHODOLOGY

This research aims to identify the consequences of technostress associated with the variables: quality of life, work-home conflict, and intention to stay in organization. Given this, a quantitative, descriptive and cross-sectional study has been conducted. The population includes employees who use information technology from public and private companies operating in Brazil. The questionnaire consists of 63 (sixty-three) items, with a control question: 'Are you currently working?' Those who were not working were excluded from the final sample.

Scales validated in several studies in Brazil and abroad were used to measure the constructs of the theoretical model. For the technostress construct, the Ragu-Nathan, Tarafdar and Ragu-Nathan (2008) scale was used. It is a scale that has two constructs of second-order: technostress creators and inhibitors. The technostress creators construct includes five other first-order constructs: techno-overload, techno-complexity and techno-insecurity (five statements), techno-invasion and techno-uncertainty (four statements). Each of these constructs is measured by five statements. The stress inhibitor construct encompasses three other first-order constructs: literacy facilitation, technical support provision, involvement facilitation. These constructs is measured by four statements, except for the construct literacy facilitator, measured by five statements.

The Lindner et al. (2016) scale consisting of 12 items was used to measure the quality of life construct. It is the Brunnsviken Brief Quality of life scale (BBQ). The construct work-home conflict was analyzed by the Netemeyer, Boles and McMurrian (1996) scale, composed of ten items. Finally, for the intention to stay, the Shore and Martin (1989) scale with three variables was used. For all the statements, the five-point Likert scale was used, ranging from 1 [strongly disagree] to 5 [strongly agree], except for the intention to stay construct, which was also measured by a five-point Likert scale, however ranging from 1 [I will definitely not from 1 [I will definitely not leave] to 5 [I will definitely leave], from 1 [I am presently looking and planning to leave] to 5 [It is vey unlikely that I would ever consider leaving this organization], from 1 [I Prefer very much to continue working for this organization] to 5 [Prefer very much not to continue working for this organization], and from 1 [It is of some importance at all] to 5 [It is very important for me to spend my career in this organization].

The questionnaire was supplemented with demographic questions to determine the profile of the sample, such as sex, age, income, marital status, education of the respondent, as well as the sector of activity, the type of company (whether public or private), company time and region where they work. Then it was sent to the respondents through social networks (Facebook, Linkedin, Instagram, Whatsapp groups) and e-mails. The technique known as 'snowball' was adopted. The procedure is that the first respondents of the research indicate new participants and pass on the questionnaire, generating a chain of respondents.

The data were analyzed based on the multivariate data technique called Structural Equation Modeling via SmartPLS (Ringle, Wende & Becker (2015), by means of a bootstrapping of 5,000 sub-samples and observing the criteria of 300 iterations as recommended by Hair Jr. et al. (2012). The questionnaire reached 618 respondents, of

which 145 were excluded from the analysis because they answered 'no' to the control question. Thus, the research sample was composed by 473 valid responses.

As shown in Table 1, the sample profile indicates that most respondents are male (65%), and the age group with the highest incidence is between 36 and 46 years (37%). Regarding marital status, 59% of respondents are married. Income proved to be well divided, with a higher frequency in the ranges of R$ 1,000.00 to R$ 3,000.00 (25%), between R$ 5,000.00 and R$ 10,000.00 (24%) and R$ 3,000.00 to R$ 5,000.00 (22%). Regarding education, most respondents have a degree of specialization (37%) and an average of 2 to 10 years in the company (55%). The services sector proved to the majority in the sample (61%), and the type of organization were mostly private companies (72%). Finally, most respondents work in the Northeast part of Brazil (53%).

4 ANALYSIS OF RESULTS

4.1 Validity of the Measurement Model

The validity of the measurement model was done in two stages. Firstly, the first-order constructs, and then the second-order constructs.

4.1.1 First-Order Constructs

As shown in Table 2, although some outer loadings are below 0.700, they were maintained to ensure the validity of construct content and to contribute to replication in other studies and contexts, as recommended by Bido and Silva (2019), Devellis (2016), Netemeyer, Bearden and Sharma (2003) and Little et al. (1999. Mainly because, as shown in Table 3, Cronbach's Alpha, the coefficient rho_A and Composite Reliability coefficients were above 0.70 for all constructs. Also, the Average Variance Extracted is above 0.50. Thus, convergent validity is supported for the first-order constructs.

Discriminating validity is also sustained. First, by the criterion of Fornell and Larcker (1981), as it reveals that the square root of the average variance extract (AVE) of each construct is greater than the correlations between the same constructs, according to Table 3. Second, by Chin's cross loadings criterion (1998), shown in Table 4. It shows that the indicators have higher loadings in their respective latent variables (the constructs).

Table 1
Sample profile

Characteristics		n	%
Respondents' Profile			
Gender	Male	306	65.0
	Female	167	35.0
Age	Up to 25 years	35	7.4
	Between 26 and 35 years	157	33.2
	Between 36 and 46 years	175	37.0
	Between 47 and 57 years	82	17.3
	Above 58 years	24	5.1
Marital status	Married	281	59.0
	Single	117	25.0
	Common-law marriage	54	11.4
	Divorced	18	4.0
	Widower	3	0.6
Working time in the same company	Up to 1 year	82	17.3
	Between 2 and 5 years	139	29.4
	Between 6 and 10 years	121	25.6
	Between 11 and 15 years	47	10.0
	Between 15 and 20 years	43	9.0
	Above 20 years	41	8.7
Income	Up to R$ 1,000.00	31	6.5
	Between R$ 1,000.00 and R$ 3,000.00	120	25.3
	Between R$ 3,000.00 and R$ 5,000.00	106	22.4
	Between R$ 5,000.00 and R$ 10,000.00	113	24.0
	Between R$ 10,000.00 and R$ 15,000.00	64	13.5
	Between R$ 15,000.00 and R$ 20,000.00	14	3.0
	Above R$ 20,000.00	25	5.3
Education	Specialization	174	36.8
	Under Graduation	136	28.7
	Master	92	19.5
	High school	42	8.9
	Doctorate	29	6.1
Data from organizations where respondents work			
Company sector	Services	288	61.0
	Industry	135	28.5
	Business	50	10.5
Type of organization	Private	341	72.0
	Public	132	28.0
Region	North East	253	53.5
	South	136	28.7
	Southeast	35	7.4
	North	22	4.7
	Midwest	27	5.7

Source: Research data.

Table 2
Constructs outer loadings

Constructs		Mean	Standard Deviation	Outer loadings
Technostress creators (Ragu-Nathan, Tarafdar & Ragu-Nathan, 2008, p. 426)				
Techno-overload				
TOVE1	I am forced by this technology to work much faster.	2.775	1.388	0.823
TOVE2	I am forced by this technology to do more work than I can handle.	2.437	1.287	0.876
TOVE3	I am forced by this technology to work with very tight time schedules.	2.579	1.387	0.879
TOVE4	I am forced to change my work habits to adapt to new technologies.	3.112	1.390	0.746
TOVE5	I have a higher workload because of increased technology complexity.	2.545	1.375	0.805
Techno-invasion				
TINV1	I spend less time with my family due to this technology.	2.636	1.424	0.826

Constructs		Mean	Standard Deviation	Outer loadings
TINV2	I have to be in touch with my work even during my vacation due to this technology.	2.928	1.442	0.839
TINV3	I have to sacrifice my vacation and weekend time to keep current on new technologies.	2.509	1.346	0.853
TINV4	I feel my personal life is being invaded by this technology.	3.088	1.457	0.821
Techno-complexity				
TCOMPL1	I do not know enough about this technology to handle my job satisfactorily.	2.471	1.238	0.844
TCOMPL2	I need a long time to understand and use new technologies.	2.416	1.199	0.851
TCOMPL3	I do not find enough time to study and upgrade my technology skills.	2.649	1.290	0.808
TCOMPL4	I find new recruits to this organization know more about computer technology than I do.	2.448	1.278	0.749
TCOMPL5	I often find it too complex for me to understand and use new technologies.	2.505	1.233	0.816
Techno-insecurity				
TINSEC1	I feel constant threat to my job security due to new technologies.	2.205	1.251	0.840
TINSEC2	I have to constantly update my skills to avoid being replaced.	3.021	1.362	0.769
TINSEC3	I am threatened by coworkers with newer technology skills.	2.234	1.181	0.862
TINSEC4	I do not share my knowledge with my coworkers for fear of being replaced.	1.623	1.068	*
TINSEC5	I feel there is less sharing of knowledge among coworkers for fear of being replaced.	2.539	1.312	0.682
Techno-uncertainty				
TUNCER1	There are always new developments in the technologies we use in our organization.	3.482	1.288	0.763
TUNCER2	There are constant changes in computer software in our organization.	3.038	1.291	0.881
TUNCER3	There are constant changes in computer hardware in our organization.	2.805	1.258	0.868
TUNCER4	There are frequent upgrades in computer networks in our organization.	3.128	1.261	0.864
Technostress inhibitors (Ragu-Nathan, Tarafdar & Ragu-Nathan, 2008, p. 426)				
Literacy facilitation				
LFAC1	Our organization encourages knowledge sharing to help deal with new technology.	3.249	1.340	0.834
LFAC2	Our organization emphasizes teamwork in dealing with new technology-related problems.	3.257	1.350	0.874
LFAC3	Our organization provides end-user training before the introduction of new technology.	3.033	1.290	0.850
LFAC4	Our organization fosters a good relationship between IT department and end users.	3.040	1.297	0.859
LFAC5	Our organization provides clear documentation to end users on using new technologies.	2.763	1.263	0.836
Technical support provision				
TSUP1	Our end-user help desk does a good job of answering questions about technology	3.105	1.214	0.912
TSUP2	Our end-user help desk is well staffed by knowledgeable individuals.	3.234	1.213	0.888
TSUP3	Our end-user help desk is easily accessible.	3.209	1.247	0.930
TSUP4	Our end-user help desk is responsive to end-user requests.	3.234	1.251	0.932
Involvement facilitation				
IFAC1	Our end users are encouraged to try out new technologies.	3.147	1.280	0.800
IFAC2	Our end users are rewarded for using new technologies.	2.439	1.233	0.809
IFAC3	Our end users are consulted before introduction of new technology.	2.340	1.233	0.839
IFAC4	Our end users are involved in technology change and/or implementation.	2.575	1.263	0.819
Work-home conflict (Netemeyer, Boles & McMurrian, 1996, p. 410)				
CONFL1	The demands of my work interfere with my home and family life.	3.344	1.336	0.753
CONFL2	The amount of time my job takes up makes it difficult to fulfill family responsibilities.	3.052	1.346	0.813
CONFL3	Things I want to do at home do not get done because of the demands my job puts on me.	2.790	1.337	0.838
CONFL4	My job produces strain that makes it difficult to fulfill family duties.	2.972	1.384	0.837
CONFL5	Due to work-related duties. I have to make changes to my plans for family activities.	3.198	1.322	0.800
CONFL6	The demands of my family or spouse/partner interfere with work-related activities.	2.581	1.325	0.767
CONFL7	I have to put off doing things at work because of demands on my time at home.	2.219	1.247	0.679
CONFL8	Things I want to do at work don't get done because of the demands of my family or spouse/partner.	1.993	1.156	0.637
CONFL9	My home life interferes with my responsibilities at work such as getting to work on time. accomplishing daily tasks. and working overtime.	2.287	1.309	0.638
CONFL10	Family-related strain interferes with my ability to perform job-related duties.	2.395	1.363	0.690
Quality of life (Lidner et al., 2016, p. 192)				
QUAL1	I am satisfied with my leisure time: I have the opportunity to do what I want in order to relax and enjoy myself	3.463	1.273	*
QUAL2	My leisure time is important for my quality of life.	4.598	0.809	0.620
QUAL3	I am satisfied with how I view my life: I know what means a lot to me, what I believe in. and what I want to do with my life.	4.126	1.025	0.788

Constructs		Mean	Standard Deviation	Outer loadings
QUAL4	How I view my life is important for my quality of life.	4.517	0.828	0.756
QUAL5	I am satisfied with opportunities to be creative: to get to use my imagination in my everyday life, in a hobby, on the job, or in my studies.	3.754	1.123	0.698
QUAL6	Being able to be creative is important for my quality of life	4.266	0.927	0.629
QUAL7	I am satisfied with my learning: I have the opportunity and desire to learn new, exciting things and skills that interest me.	4.046	0.968	0.797
QUAL8	Learning is important for my quality of life.	4.391	0.930	*
QUAL9	I am satisfied with friends and friendship: I have friends that I associate with and who support me (as many friends as I want and need).	4.549	0.803	0.723
QUAL10	Friends and friendship are important for my quality of life	4.008	1.014	0.706
QUAL11	I am satisfied with myself as a person: I like and respect myself.	4.247	0.963	0.830
QUAL12	My satisfaction with myself as a person is important for my quality of life.	4.486	0.906	0.781
Intention to stay (Shore & Martin, 1989, p. 637)				
ISTAY1	Which of the following statements most clearly reflects your feelings about your future with this organization in the next 12 months?	2.158[a]	1.096	0.807
ISTAY2	How do you feel about leaving this organizatiion?	3.403[b]	1.293	0.805
ISTAY3	If you were completely free to choose, would you prefer or not prefer to continue working for this organization?	2.126[c]	1.242	0.858
ISTAY4	How important is to you personally that you spend your career in this organization rather than some other organization?	3.441[d]	1.392	0.707

Source: Research data.
Note: *The variables TINSEC4, QUAL1 and QUAL8 were deleted because the outer loadings were below 0,600.
The variables mean for the constructs of technostress inhibitors, work-family conflict and quality of life must be interpreted according to the five-point Likert scale, ranging from 1 [strongly disagree], 2 [partially disagree], 3 [neither disagree nor agree], 4 [partially agree] and 5 [strongly agree].
For the construct, intention to stay in the organization, the mean must be interpreted according to the following five-point Likert scales:
(a) 1 [I will definitely leave], 2 [I probably will leave], 3 [I am uncertain], 4 [I probably will not leave], 5 [I definitely will not leave].
(b) 1 [I am presently looking and planning to leave], 2 [I am seriously considering leaving in the near future], 3 [I have no feelings about this one way or the other, 4 [As far as I can see ahead, I intend to stay with this organization], and 5 [It is vey unlikely that I would ever consider leaving this organization].
(c) 1 [Prefer very much not to continue working for this organization], 2 [Prefer not to work here], 3 [Do not care either way], 4 [Prefer to work here] and 5 [Prefer very much to continue working for this organization].
(d) 1 [It is of some importance at all], 2 [I have mixed feelings about its importance], 3 [It is of some importance], 4 [It is fairly important] and 5 [It is very important for me to spend my career in this organization].

Table 3
Convergent and discriminant validity by Fornell and Larcher (1981) – First-order constructs

	Mean	Standard Deviation	α	rho_A	CR	AVE	TOVE	TCOMPL	TUNCER	TINSEC	TINV	LFAC	IFAC	TSUP	CONFL	QUAL	ISTAY
TOVE	2.690	1.127	0.884	0.885	0.915	0.685	**0.827**										
TCOMPL	2.498	1.014	0.872	0.874	0.908	0.663	0.560	**0.814**									
TUNCER	3.113	1.076	0.866	0.872	0.909	0.715	0.419	0.382	**0.845**								
TINSEC	2.324	0.921	0.799	0.811	0.870	0.627	0.524	0.637	0.439	**0.792**							
TINV	2.790	1.183	0.855	0.857	0.902	0.697	0.692	0.563	0.404	0.548	**0.835**						
LFAC	3.068	1.113	0.905	0.906	0.929	0.724	0.024	0.030	0.451	0.035	-0.004	**0.851**					
IFAC	2.625	1.024	0.835	0.842	0.889	0.667	0.105	0.105	0.346	0.151	0.053	0.680	**0.817**				
TSUP	3.196	1.127	0.935	0.936	0.954	0.838	0.098	0.081	0.387	0.082	0.106	0.711	0.602	**0.915**			
CONFL	2.683	0.986	0.914	0.930	0.927	0.561	0.414	0.344	0.219	0.356	0.508	-0.178	-0.033	-0.115	**0.749**		
QUAL	4.204	0.677	0.911	0.928	0.921	0.541	-0.242	-0.230	-0.010	-0.216	-0.216	0.215	0.175	0.144	-0.196	**0.736**	
ISTAY	2.782	0.469	0.807	0.827	0.873	0.634	-0.165	-0.074	0.037	-0.193	-0.155	0.186	0.148	0.133	-0.133	0.193	**0.796**

Source: Research data.
Note: α: Cronbach's Alpha; CR: Composite Reliability; AVE: Average Variance Extracted; TOVE: Techno-overload; TCOMPL: Techno-complexity; TUNCER: Techno-uncertainty; TINSEC: Techno-insecurity; TINV: Techno-invasion; LFAC: Literacy facilitation; IFAC: Involvement facilitation; TSUP: Technical support provision; CONFL: Work-home conflict; QUAL: Quality of life; ISTAY: Intention to stay in organization.

Table 4

Discriminant validity by cross loadings criteria (Chin, 1998) – First-order constructs

	TOVE	TCOMPL	TUNCER	TINSEC	TINV	LFAC	IFAC	TSUP	CONFL	QUAL	ISTAY
TOVE1	0.820	0.413	0.376	0.414	0.494	0.072	0.091	0.099	0.246	-0.171	-0.078
TOVE2	0.876	0.499	0.283	0.438	0.610	-0.052	0.060	0.015	0.384	-0.243	-0.163
TOVE3	0.879	0.453	0.341	0.399	0.613	0.006	0.068	0.072	0.394	-0.216	-0.185
TOVE4	0.748	0.432	0.445	0.446	0.541	0.129	0.111	0.200	0.308	-0.089	-0.092
TOVE5	0.807	0.505	0.301	0.465	0.596	-0.047	0.093	0.028	0.370	-0.232	-0.152
TCOMPL1	0.436	0.841	0.249	0.466	0.456	-0.008	0.076	0.059	0.281	-0.189	-0.038
TCOMPL2	0.444	0.850	0.296	0.538	0.470	0.005	0.122	0.016	0.296	-0.209	-0.050
TCOMPL3	0.557	0.801	0.326	0.514	0.554	0.002	0.048	0.069	0.351	-0.204	-0.143
TCOMPL4	0.415	0.757	0.347	0.521	0.362	0.101	0.098	0.104	0.220	-0.148	-0.006
TCOMPL5	0.416	0.819	0.320	0.525	0.436	0.029	0.108	0.087	0.242	-0.163	-0.048
TUNCER1	0.329	0.237	0.791	0.310	0.328	0.463	0.291	0.423	0.113	0.114	0.049
TUNCER2	0.349	0.353	0.871	0.407	0.367	0.345	0.246	0.280	0.201	-0.035	0.039
TUNCER3	0.356	0.368	0.850	0.402	0.327	0.319	0.312	0.242	0.233	-0.071	0.053
TUNCER4	0.384	0.327	0.865	0.377	0.343	0.412	0.284	0.385	0.184	-0.006	-0.013
TINSEC1	0.458	0.619	0.309	0.826	0.452	-0.049	0.119	-0.007	0.300	-0.239	-0.161
TINSEC2	0.401	0.383	0.443	0.789	0.464	0.183	0.187	0.216	0.221	-0.058	-0.126
TINSEC3	0.437	0.595	0.324	0.854	0.441	0.017	0.163	0.037	0.319	-0.226	-0.145
TINSEC5	0.356	0.397	0.313	0.687	0.377	-0.040	0.010	0.024	0.287	-0.123	-0.188
TINV1	0.629	0.471	0.281	0.472	0.830	-0.059	0.027	0.069	0.475	-0.217	-0.167
TINV2	0.508	0.396	0.330	0.374	0.838	0.036	0.058	0.099	0.418	-0.119	-0.108
TINV3	0.547	0.497	0.343	0.461	0.853	0.006	0.050	0.109	0.391	-0.193	-0.119
TINV4	0.620	0.501	0.396	0.518	0.818	0.005	0.039	0.080	0.415	-0.153	-0.121
LFAC1	0.087	0.047	0.506	0.070	0.055	0.832	0.491	0.543	-0.114	0.184	0.162
LFAC2	0.072	0.017	0.458	0.036	0.024	0.872	0.543	0.570	-0.159	0.209	0.137
LFAC3	-0.030	0.024	0.327	0.058	-0.016	0.850	0.556	0.613	-0.143	0.162	0.189
LFAC4	0.009	0.044	0.337	0.008	-0.002	0.861	0.613	0.671	-0.207	0.186	0.136
LFAC5	-0.029	0.003	0.343	0.013	-0.075	0.838	0.619	0.621	-0.129	0.166	0.169
IFAC1	0.108	0.030	0.399	0.071	0.057	0.691	0.767	0.664	-0.044	0.243	0.139
IFAC2	0.098	0.077	0.310	0.136	0.035	0.523	0.809	0.438	0.008	0.089	0.093
IFAC3	0.054	0.139	0.173	0.158	0.042	0.458	0.862	0.386	-0.019	0.081	0.112
IFAC4	0.075	0.117	0.218	0.151	0.034	0.509	0.834	0.426	-0.046	0.104	0.132
TSUP1	0.054	0.018	0.326	0.054	0.079	0.657	0.514	0.911	-0.130	0.105	0.145
TSUP2	0.092	0.089	0.355	0.095	0.111	0.639	0.519	0.888	-0.108	0.149	0.149
TSUP3	0.119	0.120	0.399	0.105	0.125	0.644	0.549	0.930	-0.092	0.135	0.110
TSUP4	0.094	0.071	0.377	0.076	0.073	0.666	0.558	0.932	-0.092	0.144	0.085
CONFL1	0.378	0.266	0.214	0.250	0.443	-0.098	-0.048	-0.035	0.754	-0.057	-0.053
CONFL2	0.399	0.305	0.217	0.293	0.490	-0.129	-0.081	-0.102	0.812	-0.109	-0.112
CONFL3	0.393	0.300	0.195	0.281	0.492	-0.146	-0.035	-0.075	0.839	-0.144	-0.140
CONFL4	0.413	0.300	0.186	0.303	0.492	-0.204	-0.082	-0.104	0.837	-0.220	-0.167
CONFL5	0.349	0.249	0.203	0.303	0.445	-0.098	0.019	-0.088	0.803	-0.119	-0.120
CONFL6	0.260	0.260	0.088	0.251	0.287	-0.186	-0.038	-0.145	0.765	-0.155	-0.126
CONFL7	0.218	0.223	0.107	0.238	0.264	-0.154	0.035	-0.136	0.679	-0.145	-0.092
CONFL8	0.199	0.225	0.108	0.236	0.218	-0.087	0.075	-0.058	0.635	-0.227	-0.029
CONFL9	0.145	0.185	0.079	0.189	0.187	-0.117	0.008	-0.062	0.636	-0.141	-0.038
CONFL10	0.173	0.210	0.132	0.287	0.287	-0.098	-0.004	-0.056	0.689	-0.165	-0.047
QUAL10	-0.183	-0.131	0.028	-0.127	-0.158	0.170	0.161	0.100	-0.135	0.708	0.140
QUAL11	-0.197	-0.199	-0.016	-0.159	-0.190	0.166	0.115	0.083	-0.228	0.835	0.137
QUAL12	-0.108	-0.157	0.037	-0.142	-0.108	0.155	0.036	0.116	-0.162	0.799	0.124
QUAL2	0.031	-0.038	0.058	-0.055	0.028	0.079	0.019	0.121	-0.011	0.642	0.033
QUAL3	-0.239	-0.217	-0.043	-0.214	-0.231	0.152	0.112	0.079	-0.239	0.783	0.137
QUAL4	-0.092	-0.092	0.074	-0.086	-0.057	0.166	0.054	0.151	-0.057	0.769	0.102
QUAL5	-0.239	-0.165	-0.063	-0.207	-0.252	0.179	0.204	0.083	-0.127	0.673	0.209
QUAL6	-0.038	-0.033	0.009	-0.063	-0.025	0.052	0.080	0.079	0.026	0.630	0.089
QUAL7	-0.274	-0.277	-0.014	-0.214	-0.202	0.188	0.198	0.155	-0.159	0.786	0.190
QUAL9	-0.050	-0.109	0.074	-0.040	-0.021	0.159	0.045	0.141	-0.031	0.741	0.086
ISTAY1	-0.124	-0.050	0.017	-0.157	-0.141	0.133	0.132	0.092	-0.132	0.165	0.811
ISTAY2	-0.077	-0.049	0.046	-0.164	-0.097	0.147	0.065	0.104	-0.119	0.115	0.813
ISTAY3	-0.186	-0.057	0.024	-0.165	-0.163	0.193	0.160	0.142	-0.094	0.152	0.855
ISTAY4	-0.120	-0.076	0.036	-0.127	-0.078	0.108	0.089	0.077	-0.081	0.161	0.699

Source: Research data.

Note: TOVE: Techno-overload; TCOMPL: Techno-complexity; TUNCER: Techno-uncertainty; TINSEC: Techno-insecurity; TINV: Techno-invasion; LFAC: Literacy facilitation; IFAC: Involvement facilitation; TSUP: Technical support provision; CONFL: Work-home conflict; QUAL: Quality of life; ISTAY: Intention to stay in organization.

4.1.1 Second-Order Constructs

As shown in Table 5, convergent validity is also sustained for second-order constructs. Cronbach's Alpha, rho_A and Composite Reliability coefficients are all above 0.70 and the Average Variance Extracted is above 0.50. The discriminant validity is also supported by the Fornell and Larcker (1981) criterion, which shows that the square root of the Average Variance Extract (AVE) of each construct is greater than the correlations between the same constructs, also according to Table 5.

Table 5
Convergent and discriminant validity by Fornell and Larcher (1981) – Second-order constructs

	Cronbach's Alpha	Rho_A	CR	AVE	CREA	INHI	CONFL	QUAL	ISTAY
CREA	0.933	0.936	0.888	0.616	**0.648**				
INHI	0.938	0.941	0.911	0.775	0.166	**0.760**			
CONFL	0.914	0.930	0.927	0.561	0.477	-0.134	**0.749**		
QUAL	0.911	0.928	0.921	0.541	-0.246	0.203	-0.196	**0.736**	
ISTAY	0.807	0.827	0.873	0.634	-0.148	0.178	-0.133	0.193	**0.796**

Source: Research data.
Note: Note: CR: Composite Reliability; AVE: Average Variance Extracted; CREA: Tecnhostress creators; INHI: Technostress inhibitors; CONFL: Work-home conflict; QUAL: Quality of life; ISTAY: Intention to stay in organization.

4.2 Hypotheses test

Regarding the relationship between the technostress creators and inhibitors and the work-home conflict of users of information and communication technology (ICT), the evidence, shown in Table 6 and in Figure 2, supports the hypotheses (H1) – technostress creators positively affect (β = 0.506) the work-home conflict and Hypothesis (H2) – technostress inhibitors negatively affect (β = -0.212) the work-home conflict. Both are statistically significant at the 99% confidence interval (p-value = 0.000).

Table 6
Structural model – direct effects

Structural model	Hypotheses	Path coefficients (β)	Standard deviation	t-value	p-value	R^2 Adjusted
CREA → CONFL	H1-	0.506	0.040	12.528	0.000	0.312
INHI → CONFL	H2+	-0.212	0.044	4.834	0.000	
CREA → QUAL	H3-	-0.288	0.047	6.134	0.000	0.129
INHI → QUAL	H4+	0.251	0.045	5.526	0.000	
CREA → ISTAY	H5-	-0.137	0.060	2.274	0.023	0.087
INHI → ISTAY	H6+	0.174	0.055	3.176	0.002	
QUAL → ISTAY	H7+	0.120	0.052	2.285	0.022	
CONFL → ISTAY	H8-	-0.021	0.060	0.343	0.732	

Source: Research data.
Note: R^2 Adjusted: coefficient of determination for the structural model evaluation; CREA: Tecnhostress creators; INHI: Technostress inhibitors; CONFL: Work-home conflict; QUAL: Quality of life; ISTAY: Intention to stay in organization.

As to the relationship between the technostress creators and inhibitors and the quality of life of users of information and communication technology (ICT), Hypothesis (H3) – technostress creators negatively affect the quality of life – was supported, as it is statistically significant (p-value = 0.000) and the relationship is negative (β = -0.288). So is hypothesis (H4) – technostress inhibitors positively affect the quality of life – it is also statistically significant (p-value = 0.000), and the relationship is positive (β =0.251).

The relationships regarding the intention to stay in the organization of users of information and communication technology (ICT) and the technostress creators and inhibitors were supported. That is, the hypotheses (H5) – the technostress creators negatively affect the intention to stay in the organization (β = -0.137 and p-value = 0.023) – and the Hypothesis (H6) – the technostress inhibitors positively affect the intention to stay in the organization (β = 0.174 and p-value = 0.002).

The hypothesis (H7) – the quality of life positively affects the intention to stay in the organization – was supported because is statistically significant (p-value = 0.022) and has a positive structural coefficient (β = 0.120). Finally, the hypothesis (H8) – the work-home conflict negatively affects the intention to stay in the organization (p-value = 0.732) – was not supported, as it is not statistically significant.

The explanatory power of exogenous variables in endogenous ones, that is, the effects on quality of life (R^2 = 0.118) and the intention to stay (R^2 = 0.069), are considered small. In contrast, the effects on work-home conflict (R2 = 0.270) are considered high, according to Cohen (1988).

Additional analysis was carried out regarding the indirect effects shown in Table 7. Only quality of life partially mediates the relationship between technostress creators and inhibitors and the intention to stay in organization among ICT users. Therefore, there is no mediation of the work-home conflict in these relationships. This evidence indicates that, while the direct effect between the technostress creators and the intention to stay in the organization is 14%, the indirect effect of partial mediation of quality of life in this relationship is 3%. Therefore, the total effect rises to 17%. In the relationship between technostress inhibitors and the intention to stay in the organization, the direct effect is 17%. The indirect effect of partial mediation of quality of life is also 3%. Therefore, the total effect rises to 20%.

Table 7
Structural model – indirect effects

Structural model	Path coefficients (β)	Standard deviation	t-value	p-value	Mediation type
CREA → CONFL → ISTAY	-0.010	0.030	0.342	0.733	-
INHI → CONFL → ISTAY	0.004	0.013	0.334	0.738	-
CREA → QUAL → ISTAY	-0.034	0.017	2.018	0.044	Partial
INHI → QUAL → ISTAY	0.030	0.014	2.196	0.028	Partial

Source: Research data.
Note: CREA: Tecnhostress creators; INHI: Technostress inhibitors; CONFL: Work-home conflict; QUAL: Quality of life; ISTAY: Intention to stay in organization.

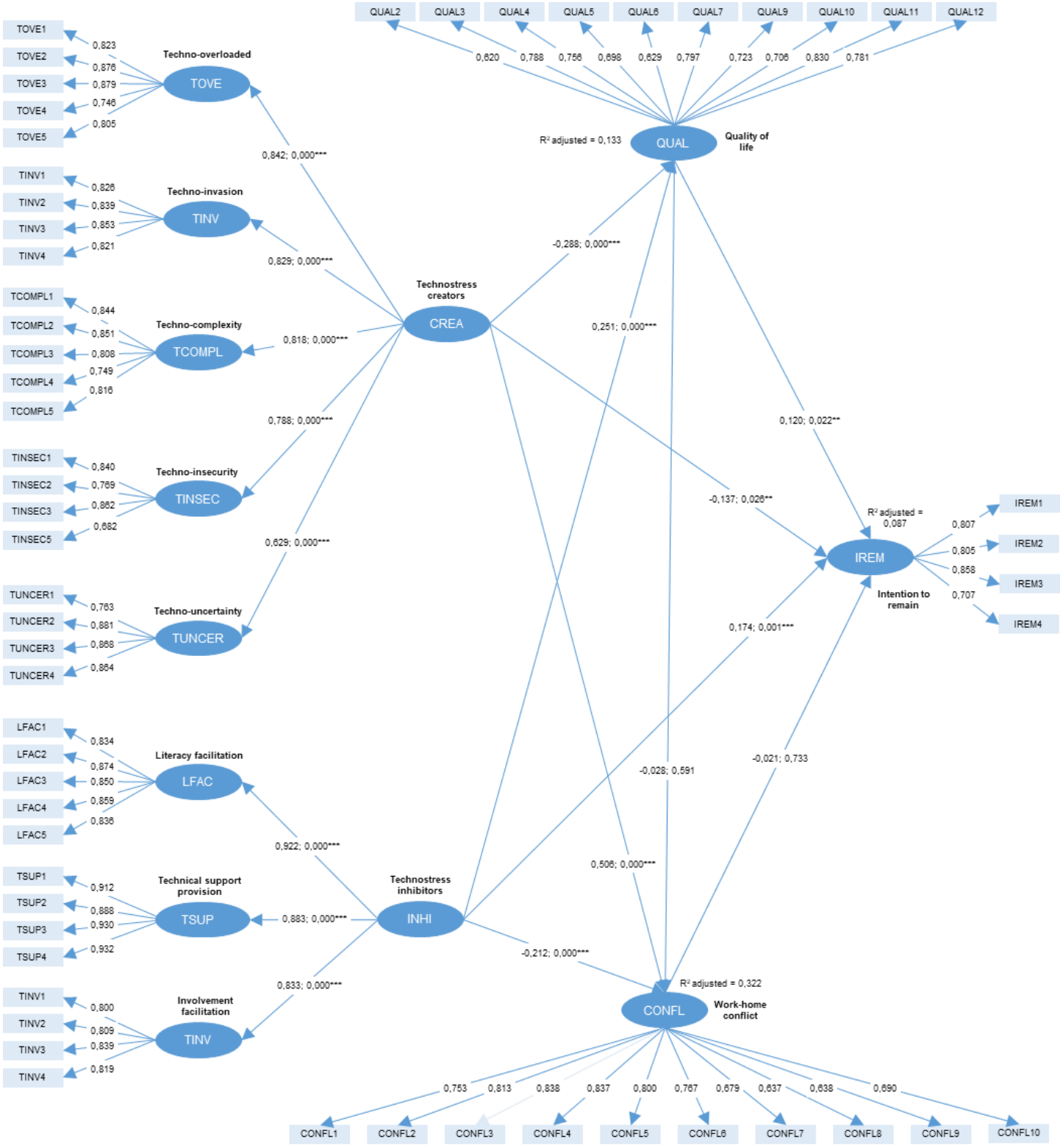

Figure 2. The final structural model.
Source: developed by the authors.

5 DISCUSSION OF RESULTS

Taking up the research problem, what are the effects of technostress on the work-home conflict, quality of life and the intention to stay in organizations among workers who use ICT in their daily work routine?

The model proposed in this research corroborates Molino et al. (2020), in Italy, during the Covid-19 pandemic, and by Ayyagari, Grover and Purvis (2011) in the United States. They only addressed the creators of technostress by showing that they can negatively influence the work –home conflict. Hence, the evidence from this research also contributes to complement these studies by showing the positive influence of technostress inhibitors in reducing this conflict.

On the one hand, the evidence in this study shows that work overload (working more and faster on tight schedules), invasion in the family context, not being able to separate work from family life, and uncertainty about work, accompanying more complex technological innovations and insecurity in adapting to these innovations (Tarafdar, Ragu-Nathan & Ragu-Nathan, 2008; Tarafdar et al., 2007) interfere in family life. These stress creators make it challenging to fulfill family responsibilities, just as family life interferes with work responsibilities, such as getting to work on time due to family requirements (Netemeyer, Boles & McMurrian, 1996).

Lewis and Cooper (2005) and Burke (2004) have already pointed out that the bonds between professional and family roles have increased due to communication and information technologies. The authors Gallie (2005) and Green and Tsitsianis (2005) have also pointed out that unmet demands to balance work and personal life increase the adverse negative consequences on these users' personal and professional lives.

On the other hand, the ease of learning new technologies through training, knowledge sharing, teamwork, the availability of explanatory material and the technical support received from the help desk team (Ragu-Nathan, Tarafdar & Ragu- Nathan, 2008; Tarafdar et al., 2007) contributes to reducing work-home conflicts (Netemeyer, Boles & McMurrian, 1996). Thus, as policies aimed at encouraging to experiment with new technologies, rewards, and greater user involvement in the implementation of technological innovation (Ragu-Nathan, Tarafdar & Ragu-Nathan, 2008; Tarafdar et al., 2007) they have also a contributory role in reducing work-home conflicts (Colombo & Ghislieri, 2008).

Considering that quality of life also involves the emotional state (appreciation, esteem, stress, self-motivation, job satisfaction, and work safety), the physical state (stress, fatigue, wear and tear, and workload), safety and work environment (Ruževičius, 2013) then, this research also corroborates Arnetz's (1997) findings. This author pointed out that the quality of life can receive negative influences from communication and information technologies. The research also corroborates the studies by Moro, Ramos and Rita (2020) and Crispim and Cappellozza (2019), in Brazil, by showing that techno-overload, techno-invasion, techno-complexity, techno-insecurity and techno-uncertainty (Ragu-Nathan, Tarafdar & Ragu-Nathan (2008; Tarafdar et al., 2007) influence quality of life in a negative way.

Evidence from this research also complement these studies by showing the positive influence of technostress inhibitors – literacy facilitation, technical support provision and involvement facilitation of ICT users (Ragu-Nathan, Tarafdar & Ragu-Nathan, 2008; Tarafdar et al., 2007) – in the increase of satisfaction with life, that is, with opportunities to be creative, to learn new things and skills, and to have free time to relax and have fun (Lindner et al., 2016).

As far as impacts on the intention to stay in the organization are concerned, the model proposed in this research corroborates the studies by Tziner et al. (2015) and Angulo and Begoña Osca (2012). They showed that stress increases dissatisfaction with work and, therefore, raises the intention of turnover. In particular, the studies by Carliff and Brooks (2020), Califf, Sarcker and Sarcker (2020), Boyer-Davis (2019) and Gamage and Herath (2013) indicated that the creators of technostress (techno-overload, techno-invasion, techno-complexity, techno-insecurity and techno-uncertainty) (Ragu-Nathan, Tarafdar & Ragu-Nathan, 2008; Tarafdar et al., 2007) might imply an intention to leave the organization.

The model also reinforces the studies of Al Zamel Abdullah, Chan and Piaw (2020), Al Zamel Abdullah, Chong and Chua (2020) and Kournka, Hoonakker and Carayon (2008) by showing that satisfaction with life, with opportunities to be creative, to learn new skills, new things and having free time to relax and have fun. That quality of life (Lindner et al., 2016) contributes to the intention to stay in the organization (Shore & Martin, 1989).

With regards to the impacts of the work-home conflict on the intention to stay in the organization, the proposed model corroborates the studies by Nelson et al. (2020), Yamaguchi et al. (2016), Colombo and Ghislieri (2008), Boyar, Maertz, Pearson and Keough (2003) and Allen (2001)as it reveals that the conflict at home, that is, the difficulties of fulfilling both family and work responsibilities (Netemeyer, McMurrian and Boles, 1996), contribute to ICT users turnover. That means that employees may not want to stay in the organization. The model also complements the study by Tarafdar et al. (2007) by showing the positive performance of inhibitors on the intention to stay. However, there is no mediating effect of the work-home conflict on the relationship between technostress and the intention to stay in the organization.

Contrary to quality of life, being essential to note that the evidence indicates its partial mediating role in the relationship between technostress creators and inhibitors, and the intention to stay in the organization,employees' quality of life increases the total effect on the relationship between technostress and the intention to stay working in

the organization. Thus, this aspect shows the relevance of organizational policies to improve employees' quality of life (Lee, Lee & Suh, 2016) and to mitigate the effects of technostress creators (Pfaffinger, Reif & Spie, 2020).

These findings are in line with the understanding of authors such as Backes, Silva, Siqueira and Erdmann (2007), Franco, Barros and Nogueira-Martins (2005) and Feliciano, Kovacs and Sarinho (2005). They highlighted the role of organizational culture, the way in which organizations deal with the difficulties to adapt to technological innovations. In other words, that should happen through greater involvement among organizational actors andmore spontaneous learning, by blocking negative aspects about the quality of life of people who use Information and Communication Technology.

Technologies may not be the most crucial trigger for stress in occupational environments, and technostress may be avoided (Koolhaas et al., 2013). However, the use of ICT is necessary for the organization to perform effectively (Changki, Jungioo & Jinjoo, 2007) and remain competitive (Rubel, Kee & Rimi, 2020). Thus, the best way to avoid technostress is to protect the organizational culture of the workplace and provide support in the implementation of new technologies, a culture focused on information sharing, management support, employee participation based on a system of recognition and rewards and training, which positively impacts the user's adaptation to the new technologies adopted by the organization (Rubel, Kee & Rimi, 2020). Organizations can also make use of social support networks (networks of social ties based on positive and negative emotions) and informational ones (networks for sharing information about a task to be developed (Wu et al., 2017; Bruque, Moyano & Eisenberg, 2008).

6 FINAL CONSIDERATIONS

This study, by discussing the effects of technostress on work-home conflict, quality of life, and the intention to stay in organizations among workers who use Information and Communication Technology (ICT) in their daily work, has come up with four contributions to literature, andtwo practical contributions. First, while previous studies on technostress generally use the creators of technostress as first-order latent variables, in this study, both the technostress creators and inhibitors were discussed as second-order constructs.

Second, previous studies either have addressed relationships with other constructs, such as technostress and customer satisfaction and delight (Christ-Brendemühl & Schaarschmidt, 2020), technostress and performance (Tarafdar et al., 2010), technostress and productivity (Tarafdar et al., 2007), or they were partially analyzed, such as technostress, work-home conflict and behavioral stress (Molino et al., 2020), technostress and satisfaction, strain at work and the professional's intention of turnover (Califf, Sarcker & Sarcker, 2020). This study, on the other hand, presents a more integrative model to discuss the consequences of technostress among the latent variables work-home conflict, quality of life, and intention to stay in the organization among workers who use ICT in their daily work. That is, in addition to corroborating and complementing previous research that partially addressed these constructs by showing the significant direct effects between these latent variables, this study also shows that there is not either a direct effect of the work-home conflict on the intention to stay in the organization nor a mediating effect in the relationship between the technostress creators and inhibitors and the intention to continue working in the organization. In other words, the technostress creators and inhibitors are robust factors in themselves, which impact employees' intention to continue working in the organization, with no need to involve the conflict experienced by these workers in their daily work due to the ICT use tension.

Thirdly, unlike the work-home conflict, this study shows both the direct effect of quality of life on the intention of employees to stay in the organization and its mediating effect on the relationship between the creators and inhibitors of technostress and their intention to continue working in the organization. That way, it collaborates to show the contributory role of actions such as technical support, greater involvement of users in the implementation of technological innovations, and more training and sharing of experiences and knowledge to mitigate the negative effects of technostress creators.

Fourth, the results of this study offer empirical research that reinforces the positive and negative effects of technostress by replicating the technostress scale of Ragu-Nathan, Tarafdar and Ragu-Nathan (2008) and Tarafdar et al. (2007) in a South American country in addition to the traditional contexts such as the United States, Europe and China. Doing so favors the generalization and extension of the results and reduces the limitations of this scale through incremental procedures (Tsang and Kwan, 1999).

This study, however, does not address the quality of life at work, which encompasses the employees' perception of their physical and psychological health and well-being (Moda et al., 2021; Kong et al., 2019). It does not encompass other factors such as job security, career planning, skills development, work-life balance either (Brown et al., 2004); the culture and climate of the organization, relationship and cooperation, training and development, remuneration and rewards, facilities, job satisfaction, job security, work autonomy, and adequacy of resources (Nanjundeswaraswamy & Swamy, 2013), which are factors surrounding the work environment. Leitão, Pereira and Gonçalves (2021) showed that hygiene factors associated with quality of life at work, such as a safe work environment and occupational health, positively influence employees' productivity in Bulgaria, Cyprus, Spain, Greece, Portugal and Italy.

Although there are some studies connecting quality of life to quality of life at work (Alrawadieh et al., 2020; Narehan et al., 2024; Daubermann & Tonete, 2012; Nguyen & Nguyen, 2012; Elizur & Shye, 1990), there are no studies

linking the creators and inhibitors of technostress, quality of life and quality of life at work, simultaneously. Also, some studies have discussed the quality of life in different generations, such as the eldest (Şahin, Özer & Yanardağ, 2019) or the youngest (Medvedev & Landhuis, 2018). There is a daily coexistence of different generations that cohorts in organizations – baby boomers, X, Y and Z – and the Beta in a few years. Therefore, it is recommended that a comparative study between generations is also made, listing the creators and inhibitors of technostress, quality of life and quality of life at work. Berg-Beckhoff, Nielsen and Larsen (2017), through literature review, found no evidence that older employees experience more stress or exhaustion when using ICT compared to younger ones.

Another research suggestion is to insert the organizational culture as a dependent, independent, or even mediating and moderating variable, such as Gallivan and Strite's (2005) vitelline onion model, based on Social Identity Theory to study information technology and culture on national and organizational levels. Finally, qualitative research, such as case studies, is also recommended in order to deepen the understanding of the relationships between technostress creators and inhibitors, quality of life, quality of life at work, work-home conflict and the intention to continue working in the organization.

This study has some limitations, mainly because it is a non-probabilistic sample due to accessibility. Most respondents work in the service sector and in the Northeast region which may have contributed to distort the results. Therefore, the results need to be interpreted with caution.

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