Bulletin of Business and Economics, 13(2), 825-837
https://bbejournal.com
https://doi.org/10.61506/01.00397

Unscrambling the Digital Dilemma: Navigating Techno-Stress in Pakistan's Banking Realm - A Journey into the Interplay of Thoughts, Emotions, and Commitments

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Abstract
Pakistan's banking sector is at the forefront of digital transformation, but this progress comes with a hidden cost-techno-stress. Our study, designed with your professional needs, explores how information overload, work-life intrusion, and other tech-related anxieties impact employee well-being and commitment. We examine the prevalence of techno-stress and its links to negative thinking, emotional detachment, and career satisfaction. We aim to develop practical strategies to reduce techno-stress, fostering employee well-being and organizational effectiveness. Using surveys, we analyze how different forms of rumination affect mental health and productivity. We propose interventions to boost employee satisfaction and organizational efficiency by minimizing negative tech stressors and promoting healthy detachment. We analyze the complex relationships between techno-stress and related factors through rigorous methodology. This research underscores the need for context-specific solutions in Pakistan's banking sector, offering valuable insights and actionable recommendations to cultivate a supportive work environment that thrives alongside technological advancements.
Keywords: Techno-stress, Techno-overload, Techno-invasion, Techno-complexity, Techno-insecurity, Techno-uncertainty, Career commitment, Emotional detachment, Rumination

1. Introduction

As they illustrate loyalty, productiveness, and workability in time difference, committed workers are significant advantages (Ahmad et al., 2014). However, together with the benefits of technology, a new problem known as techno-stress has also occurred. The term "techno-stress," which was foremost used by (Ragu-Nathan et al., 2008), narrates the untimely psychological and physical reaction that workers have businesses gaze to maintain worker potency and welfare as technology goes well with more and more amalgamate into both the individual and professional realm (Tarafdar et al., 2007). The five main components of techno-stress were recognized by Tarafdar et al. (2007) as techno-overload, techno-invasion, techno-complexity, techno-uncertainty, and techno-insecurity.

The term "techno-overload" refers to immersion in responsibility and detail that can originate pressure and minimize potency (Califf & Brooks, 2020; Harris et al., 2022). The professional-life stability is perverted by technological conquering, who compel it forceful to detach from work and results in persistent integration (Akram et al., 2021, 2022; Ramzan et al., 2023; Wu et al., 2022; 2020; Das, 2024). According to Califf and Brooks (2020) and Christian et al. (2020) techno-complexity is a consideration of the difficulties associated with using a nexus technological structure, which can create dissatisfaction and emotion of insufficiency. Techno-uncertainty is made up of anxiety and tension coming from the unforeseen aspect of evolution in technology, which might compromise employment expectations (Califf & Brooks, 2020);(Li et al., 2021; Ramzan et al., 2023). Last but not least, Anxiety about the secrecy of details, security menace, and software reliability outcomes in techno-insecurity, leading to greater sensitivity (Califf & Brooks, 2020; La Torre et al., 2019; Audi & Masri, 2024).

Digital conversion has become a decisive feature of day-to-day functioning in Pakistan's banking sector, which has skillful remarkable technical progress. But nothing is familiar about the certain issues that techno-stress in these surroundings poses. The motive of this study is to look into how organizational commitment and worker welfare are pretentious by technological stress in the banking industry in Pakistan (Chandra et al., 2019). The objective of this study is to find out how common it is and what type of technological stress bank workers in Pakistan overlook. The research will additionally examine the links among technological stress, rumination, emotional detachment, and career commitment between bank workers. Developing concentrating solutions and strategies to reduce the negative effects of technological stress and increase employee welfare in Pakistan's banking sector is the utmost objective (Porcari et al., 2023; Serani, 2024).

This study can make an offering to the academic and practical realm by investigating the compound connection between techno stress and its impact on the bank workforce in Pakistan. Our understanding of techno-stress in a specific industry and cultural setting can be made better by these outcomes. It can also recommend perceptive information on the mediating elements that influence organizational commitment and employee's welfare. Moreover, this research can help Pakistan's banking industry produce empirical-based interference that will uplift employees' welfare and raise organizational effectiveness. Besides this, in connection to the body of comprehension on techno stress theory, this study could result in realistic solutions that advantage businesses and employees in Pakistan's exchange banking sector as a consequence of using technology.

2. Literature Review and Conceptual Framework

The study will add to the understanding of techno-stress theory and its practical applications by looking at the precise elements of techno-stress and their effect on employee outcomes. Techno stress (TS) has been defined as "any negative impact on attitudes, thoughts, behaviors, or body physiology that is caused either directly or indirectly by technology" (Holtskog et al., 2018). Another definition of TS is "direct human interaction with ICT, as well as perceptions, emotions, and thoughts regarding the implementation of ICT in organizations and its pervasiveness in society in general" (Riedl, 2012).

2.1. Rumination and Emotional Detachment

Rumination and emotional indifference depend in a way that has enthralled scholars, mainly when it comes to the workplace (Li & Akram, 2023; Ramzan et al., 2023; ZALESKI et al., 1973). When it is first set up, the detachment intends to leave the office. But despite that, the idea now encompasses mental detachment as well as the position to entirely turn off notions linked

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to work when not in the workplace. The theory of "psychological detachment" was initiated by (Brown et al., 2005)to focus on this cognitive portion of putting work on detain during free time. Antagonistic rumination is a persistent pattern of unmanageable, negative beliefs that are frequently immersed in fright about the future (Akram & Abdelrady, 2023; Akram et al., 2022; Ramzan et al., 2023; Chen & Ramzan, 2024; Ahmad et al., 2018). Despite the existence of examination in clinical situations at first, research has shown its broad influence on a range of psychological issues. Rumination about implementation, though, isn't just one thing. Emotional rumination and analytic review are two separate subcategories. Emotional rumination means focusing on unsuitable job situations, resulting in mental torment (Watkins & Roberts, 2020). However, examining while addressing problems is a more positive strategy, to execute stronger, people observe their work-related hurdles in this area. Research has exhibited a blazing difference: emotional ruminating is a major reason for extreme tiredness, whereas scrutinizing solutions to problems is linked with less tiredness. This exhibits that thinking related to one's work matters not just in quantity but in quality as well. Rumination has effects that go beyond psychological health. Negative information may also be inhibited and our capacity to regulate our attention may be compromised. Reduced cognitive function and diminished problem-solving abilities result from this (Araújo et al., 2021). Rumination that continues over time has the ability to become electronic. Depression signs can aggravate when workers find it hard to break away from uncomfortable thoughts, which can lead to a brutal cycle. There is still a notable knowledge vacuum regardless of research that gives insight into the distinct influence of multiple rumination subtypes on worker prosperity. It is compulsory to combine both features of rumination with psychological disconnection. We can acquire a lot about how these variables inter-relate to affect worker's prosperity by minimizing the information gap (Watkins & Roberts, 2020).

There are predominant consequences for understanding the connection between rumination and disconnection. It can assist with the creation of concentrated interference meant to elevate employee satisfaction and, one after the other it raises productivity within the company. By way of cognition of this multiplex cavort, we can provide employees with the technique to remove psychologically from their jobs and uplift more positive feedback to work-related problems, which will, in the end, outcomes in more vigorous and coherent employees (La Torre et al., 2019). The following hypotheses are proposed for the current investigation based on the literature mentioned above

H1: There is a positive and significant relationship between emotional detachment and rumination.

2.2. Rumination and Career Commitment

According to Levy and Henry (2003), the chasing of goals, a constant process of setup objectives and evaluate development, is what handle our daily existence. Stretch out these aims often calls for compatible duties, and running into barriers or depression can create us to uncertainty our commitment to an explicit professional track (VanVoorhis & Morgan, 2007). Environment and pursuing personal career objectives are common characteristics of career dedication, which is delineated as a commitment to a chosen profession ((Blau, 1985);(Carson & Bedeian, 1994)). People that are extremely committed to their profession commonly put in a lot of endeavors and don't capitulate on their goals in the workplace (Jan et al., 2022; Noor et al., 2021). But trial meaningless goals neglectful might be unhealthy to our welfare. There are circumstances, according to Ehsan and Ali (2019), when it might be better to discard a job route in benevolence of pursuing other goals. Rumination, or the susceptibility to focus on the missed chance to fulfill a goal, is one possible reason for this (Abbas & Dogan, 2022). Studies show that when challenged with the expectation of failing to achieve an objective, we tend to become condensed on the inconsistency between our optimistic outcomes and the actual state of the incident (Zhao et al., 2023). Ruminating on adverse intent ideas has been associated with rumination Brown et al. (2005), which has been linked to a decline in (Levy & Henry, 2003).

Moreover, superficial variables may aggravate the harsh effects of rumination on job dedication (Lau et al., 2013). Reorganizations, downsizing, and economic downturns can elevate employee worry about job security, which may have an influence on their level of career dedication (Hall, 1996);(Nolen-Hoeksema & Morrow, 1993). As stated by Aryee and Tan (1992) indicate that attribute such as family contribution and the number of dependents may have a minimum influence on career commitment, but they should still be hold into account in addition to other cohort factors. For this reason, H2 has been proposed under this study as:

H2: There is a negative relationship between Career Commitment and Rumination.

2.3. Techno Overload and Rumination

Our sustained entrance to technology generates a hard problem. Digital gateways are great for link people and conclave information, but excessive use of them can foremost to a mental position known as rumination, which is the constant focus on unhappy feelings and notion. This study examinations the composite link between rumination and technological overburden, looking at how it impacts on our emotions, notions, and technological consumption. A predominant point is the deluge of information escort on by technology overburden. The mind is overburden with details when one is constantly keep watching emails, social media, and another internet venture. Our intellectual abilities may be overburden by this digital tsunami, making it solid to turn off instruments and resulting in intellectual overburden. Rumination can sustain even in circumstances where we are not actually connected. For example, we may find individuals plague about online conversation or making unhappy social comparisons (Burchell, 2001; Green & McIntosh, 2001).

Duration of "work escalation," decided by higher job assumption and pressure on workers, has also been leaded the way about by technology. This is distinctly true for careers that require accuracy and multitasking, like piloting. A person's responsiveness to attainable risks may be reduced by the sustained barrage of information and provocation, which also uplift stress volume and promote rumination. Extraordinary, there are two verges to technological overburden. For remaining, it may allow a quick reprieve from unhappy emotions, even if it generally makes rumination inadequate. Rumination may in the end become more enormous when undecided basic issues reappear, although this redirection is only short-term. In certain, social media platforms have the potential to influence an atmosphere that is full of self- and societal comparison. The carefully select images of other people often nourish feelings of isolation and inadequacy, which greatly donate to rumination. Rumination propensity are further worse by excessive screen use earlier to bed, which has been associated to negative mental health outcomes like increased stress, anxiety, and depression. As stated by Tarafdar et al. (2007) techno overburden may catastrophic impact intellectual processes associated to rumination, including administrative functioning and deliberation control. An individual's size to manage their observation and withstand divert enticement may be compromised

by the constant multiple responsibilities and information method required by the digital age, provide them more unprotected to obtrusive notions and rumination. Repressing process insufficiency may also be involved. We can remove unnecessary information by using these methods. Negative intellectual patterns linked to rumination might be aggravated when they are fragile because unneeded information can build up in working recollection (Caplan, 2010; Yellowlees & Marks, 2007). Further charged the ruminative cycle is information method biases, including the inclination to focus on unhappy information (Nolen-Hoeksema, 1991). Because of the composite reaction between rumination and techno overburden, it is foremost to have a cultivated grasp of how different technology utilizes patterns affect spiritual and intellectual functions. In the present digital environment, Koster et al. (2011) there is an energetic interplay between several features that must be taken into contemplation when originate ways to assist better technology use and prosperously treat mental health concerns related with rumination. Therefore, these possibilities are suggested:

H3: There is a positive and significant relationship between Rumination and Techno-overload.

2.4. Techno Invasion and Rumination

In the interconnected world of today, technology plays a vast role in every situation of our lives (Abdelrady & Akram, 2022). But there is flow when this steady existence might be complicated. "Techno Invasion" is a word used to distinguish how technology is sustained to penetrate our personal lives, making it harsh to characteristics between work and enjoyment. Think of it as never really quitting the office emails are always tinkling; cutoff times are always emerging, even on free evenings (Tarafdar et al., 2007). This invasion of upsets the intricate symmetry between our personal and professional lives, making it more harsh for us to unbend and renovate (Ragu-Nathan et al., 2008). Introduce "Rumination" - the cognitive variety of tape players. It's the constrained, constant recreating in our minds of displeasing memories, depression, or preliminary experiences. Suppose losing serenity by being sensible about a work-related error long after the office has closed. Trying to fix an issue often or just remembering displeasing memories are two precedents of how this captivating staying might revealed. Rumination is naturally linked with feelings of perturbation and depression (Hauk et al., 2019).

Rumination and technological conquering start to interrelate spitefully. Technology's caliber to keep us connected all the time causes us to ruminate about job matters even when we should be alleviated, which motivates rumination. A mental cycle of tasks, cut off time, and anxiety could occur when you try to watch a movie while work emails are repeatedly appearing. Our general welfare is endangering by this never-ending violence of work-related ideas, which also attach to stress. (Choi, 2018) But despite that, the process does not stop there. As a result, rumination may make Techno Invasion unsatisfactory. We feel more deluges and anxious by the ongoing digital restrain the additional we think about our work-related issues. Emotions of "techno-stress," which contain information overburden, unreliability, and uneasiness around technology, are raise by this. Our excitement of being chain to our jobs is only adequate by feeling on verge all the time about work emails and cutoff time, which feeds the brutal cycle and its unfavorable impact (Ragu-Nathan et al., 2008).

Rumination can also make it harder for us to adjust to the Techno Invasion. During downfall, we become absorbed in a brutal cycle of unfavorable emotions about work as an alternative of occupy it with beloved ones or doing leisure activities, which motivate modification and indifference. We are even less able to disable and rejuvenate so that we can go back to work feeling vigilant and galvanize (Hauk et al., 2019). This composite workflow between Techno Invasion and Rumination is supported by strong study. Research has doubtless exhibited a link: the likelihood of undergo the other raise with the density of the first event. This accentuates the fundamental of a multifaceted strategy. In addition to learning suitable technology usage execution, we also need to acquire knowledge of how to set and keep border between our personal and professional lives. We may interrupt free from the sample and take back control of our potency and mental health by stimulating digital prosperity and expand useful endure procedure (Hauk et al., 2019). Therefore, the following hypothesis is suggested:

H4: There is a positive and significant relationship between Rumination and Techno-invasion.

2.5. Techno Complexity and Rumination

As stated by Ragu-Nathan et al. (2008) have focus on the complex and multifaceted connection among techno-complexity and rumination. Techno-complexity is the word used to delineate conditions in which human being find it strenuous to comprise and master information systems (IS) because they look at their intricacy to be overwhelm. Techno-uncertainty, which results from under way interchange in information systems, and techno-insecurity, which is the anxiety of be deprived of one's work as an outcome of technology development, are two possible source of this imitation (Ragu-Nathan et al., 2008). According to Sinclair-Desgagné and Soubeyran (2000), technological complexity is the level of complexity and composure in technological systems or duties. Rumination can happen when hold immensely composite technology, which often order to significant intellectual resources. Constantly thinking about issues, unreliability, or challenges link with technology is common as rumination. In technologically compound circumstances, rumination can be set off by multiple procedures. Foremost, people might be doubting their ability because they feel ineffective over technology (Akram et al. 2021), unusually when interrelate with compound methods. This may be made inadequate by purist tendency, which motive people to target for perfect performance and lodge excessively on recognize imperfection or inaccuracy (Sinclair-Desgagné & Soubeyran, 2000). Although, people who use technological systems usually particularly ones with compound feedback procedures may become more susceptible to ruminating because they will feel more push to judge their own accomplishment and estimate future outcomes. Even so it can occasionally behave as a spark for original analytic; trying to determine difficulty or get beyond hurdles link to composite technologies can also create rumination. The reality that people behave differently to technological composite must be recognizing. While specific people might exhibit in complex technological settings, seeing hurdles as possibility for personal development, others might feel worried and addictive. The way people negotiate and manage techno-complexity is affect by multiple factors, including individual traits, coping tactics, and acumen of technological stresses (Ragu-Nathan et al., 2008).

Moreover, technological advancement often brings new duties and curiosity, potential jobs more compound and less relying on procedure. According to Alterman et al. (1998), this may further aggravate people's tension levels and rumination. Even, suggestions on technology anxious vary commonly and based on the situation; while some see them as fate to improve their abilities, others see them as risk. Strategies to accurately manage techno-complexity and motivate healthy manage procedure are needed to address the negative substance of rumination in technologically modern culture. According to Fauscette and Perry (2014), this may necessitate establishing a society of education and workability, offering cooperation and expedient for

skill development, and putting in place rules to balance work burden and alleviate stress link with one's employment. To reduce the harmful influence of technology innovations on people's welfare, it is eventually desperate to encompass the complicated communication among techno-complexity and rumination.

Therefore, following hypothesis is suggested:

H5: There is a positive and significant relationship between Rumination and Techno-complexity.

2.6. Techno Uncertainty and Rumination

Technological unreliability and rumination have a compound relationship that influence many positions of human experience and has been deliberate by scholars in fields ranging from economic studies to psychology. Based on the cognitive dissonance theory Festinger (1957), people who are agonizing with behaviors that don't match technical uncertainty may find themselves abode on these dissimilarity as they try to make sense of refute information or baffling technology situations. Unreliability weakens people's sense of responsibility, which makes them ruminate as a manage strategy to rehabilitate predictability (Skinner, 1996). This process is made nasty by feelings of decrease impact. As stated by Wiener (1948) highlighted the disturbance of technological unreliability in the response loop in bionic models of human-computer interplay, which aggravate rumination as people fight to adjust and deal with unforeseen results. Rumination is also motivated by stress escort on by technical unreliability Kock (2004) as people aim on possible jeopardy or negative outcomes. It is essential to understand how people assess and react to unreliability in technology circumstances in order to execute intercede such as upgrade user control and clear response (Brave et al., 2005). Beyond human intellectual, technological unreliability reacts over economic sectors, with ambivalence surrounding emanating technologies like those in aeronautics Depoorter (2008) emphasize the need for refinement examination of their comprehension social ramifications. In the face of these uncertainty, technological ambivalence also offers chances for supplementary investigation and imagination Florida (2014), accelerating the energetic interplay between techno-unreliability and rumination in influencing social betterment and individual encounter. Therefore, following hypothesis is suggested:

H6: There is a positive and significant relationship between Rumination and Techno-uncertainty.

2.7. Techno Insecurity and Rumination

The compound and remarkable relationship among rumination and techno-insecurity has important complications for people's use of technology and psychological health in imprecise. Rumination is the sustained delusion with perceived jeopardy or drawback related with technology. Techno-insecurity, considerable by disturbance about employment dependability due to technological enhancements or unreliability around ICT-related changes, can provide as a mechanism for this kind of amusement. According to social cognitive assessment theories, people's propensity to ruminate is impacted by how much they think they can control the jeopardy associated with technology and how important those concerns are. (Bandura & Cervone, 1986).Techno-insecurity can impede people to anxiety about data security, privacy violence, or the reliability of technology. This makes them regularly examine the chance of technological defect or security violence and how they will control those hurdles. Because of a dearth of confidence in the reliability of technology, this repeatedly focus on accountability in it may make people more worry and ruminative (Lazarus & Folkman, 1984). Further aggravating sentiments of depression and unease is the prospect that techno-insecurity will activate existential issues and anxiety about deadliness (Pyszczynski et al., 2003). People's belief and readiness to interplay with digital platforms and devices may reject as they scuffle with issues about the security and reliability of technology. Information that is fuzzy or incompatible about the security of technology might aggravate rumination and make it harsh for people to reconcile varying viewpoints (Joinson, 1998);(Cutter, 2003). It is elucidative to create technology that upgrade user belief, trust, and welfare in order to alleviate the negative outcomes of techno-insecurity on rumination. This can be proficient by putting powerful privacy security into place, transmit security measures openly, and giving peoples the officials to take charge of their online experiences. Strategies to motivate more pleasant user experiences and alleviate the negative influence of techno-insecurity on people's welfare can be conceived by rigorously understanding the interplay among the rumination and techno-insecurity (Dourish, 2001);(Cranor & Garfinkel, 2005). Therefore, following hypothesis is suggested:

H7: There is a positive and significant relationship between Rumination and Techno-unreliability.

2.8. Rumination as Mediator between Technological Stress and Emotional Detachment

The present research investigated the composite relationships between technological stress, rumination, and emotional disconnection and recognized the significant influence these relationships have on people's welfare in modern work environments. This study highlights the elucidative role of psychological disconnection in encourage recovery from work-related anxious. It is based on confirmed theories such as the allosteric load model and the perseverative cognition hypothesis (Cropley et al., 2012);(Nijp et al., 2012). Two types of rumination related to work affective rumination and problem-solving pondering are of special attention. According to Brosschot et al. (2006) these cognitive processes are thought to moderate the link among environmental stresses and future health substance because they include prolonged observation of work-related obstacles. The aim of the study is to spark light on the route leading to destructive health effects by clarifying the processes by which rumination influence physiological activity and allosteric stress. Further confirmation supports the demand for psychological individual from work to upgrade efficient reclamation (Cropley, 2006); (Sonnentag & Fritz, 2007). It is assumed that psychological disconnection is compulsory for people to separate from work-related pressures and assist extensive alleviate completely. Its significance as a mediator in the interplay between technological stress and emotional disconnection is emphasized by the detrimental outcomes of rumination on this process. This research proposes that techno-stress is a significant yet under-explored area in organizational stress research represents overburden, depression, and disappointment prefer on by technology use. It attract on intuition from professionals and the body of actual literature (Weil & Rosen, 1997);(Hudiburg, 1989). Even if technological factors have fictionally been ignored in organizational stress theories, the raising incident of techno-stress requested a details examination of its theoretical and empirical foundations. In light of these considerations, following hypothesis is suggested:

H8: Rumination mediates the relationship between Technological stress and Emotional Detachment.

2.9. Rumination as Mediator between Technological stress and Emotional Detachment

Due to its related to unhappy outcomes like anxiety and the use of detrimental face procedures, rumination an intellectual process highlight by recurrent, passive attention on one's anguish and its cause has been the area of much psychological

research (Nolen-Hoeksema, 1991);(Conway et al., 2000). It is concept to be a homogeneous personality attributes and acknowledgment technique that makes anxiety symptoms inadequate and makes it tremendous to solve problems (Nolen-Hoeksema et al., 2007);(Papageorgiou & Wells, 2003). Scholars have emphasize its detrimental influence on mental health and stressed its implication as a susceptibility factor for the commencement and conservation of anxiety (Cooney et al., 2010); (Denson et al., 2011). Rumination's distinction in apprehend psychological unease is further indicate by its relation to the hike of anxiety escort on by outermost stresses (Nolen-Hoeksema, 2000). It's compulsive to note that new research specify rumination may alleviate the connection between anxiety and particular tech-related behaviors, like irresistible social media use and smartphone dependence, indicating a composite interplay between rumination and modern stressors (Xie et al., 2019);(Zhang et al., 2018). According Maslach et al. (2001), rumination has been associate to the emergence of job exhausted in the setting of workplace fluctuation. This ailment is marked by emotional drowsiness, disassociation, and lessen personal achievements. According to Boyle et al. (2014), the metacognitive model indicated that rumination causes burnout by using cognitive resources that could be used for assignment related activities. Study indicates that rumination plays a role in considerate psychological welfare and acts as a mediator between stress and job exhausted in a variety of employment (Ricarte et al., 2016);(Vandevala et al., 2017). In alongside, there has been a great deal of worry about problematic smartphone use (PSU), which is linked to a number of alleviate psychological outcomes such as stress, anxiety, depression, and a reduce in social work (Elhai et al., 2017); Contractor et al., 2017;(Dey et al., 2019). According to Horwood and Anglim (2019), there is a flourishing need for extra research to address the negative influence of PSU on youngster, as seen by its uplifting pervasiveness.

Rumination and its impact have been aforethought in great feature, but its responsibility in undergo less observation. Deeming the possible high levels of anxiety and emotional pressure seen in the news media scholars, this divergence is impressive. It is appropriate to deliberate that people who are facing negative sentiment might turn to rumination as a manage procedure, based on the Goal Progression Theory, which demonstrate that people ruminate to close the divergence between their intimate and present states (Martin & Dahlen, 2005). Rumination and negative sentiments are positively interact, according to empirical research Vandevala et al. (2017);Wu et al. (2020), which provide confidence to this hypothesis. Moreover, studies using longitudinal data highlight the correlative connection among rumination and negative sentiments, recommend that sharpen negative influence may ultimately outcome in more ruminating (Alderman et al., 2015);(Moberly & Watkins, 2008). Further supporting rumination's function as a mediator in the stress-exhausted connection is authentication from a variety of business circumstances that exhibit it to be a strong predictor of burnout (Košir et al., 2015);(Bianchi & Schonfeld, 2016). After considering these findings, the following hypothesis is suggested:

H9: Rumination mediates the relationship between Technological stress and Career Commitment.

Based on the above literature and stated hypotheses, Figure 1 shows the framework of the study.

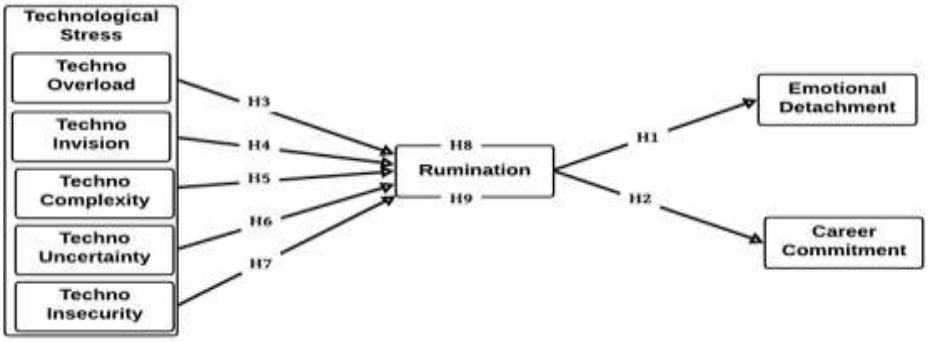

Figure 1: Framework of the Study (Source: Authors)

3. Research Methods

With a particular focus on Southern Punjab, this study explores the complex relationship between technology and well-being in the Pakistani banking industry. Deductive reasoning and meticulous data collection techniques are used in this positivist study, which highlights the objectivity of scientific investigation. The research clarifies the underlying ontological, epistemological, and axiological presumptions by drawing on the body of current literature to provide a strong foundation. In this instance, the existence of a quantifiable and objective world that includes Techno-Stress, emotional detachment, career devotion, and rumination is referred to as ontology, which describes the nature of reality. When discussing the value of objective data collected via surveys, epistemology goes into great detail on how knowledge is obtained. Axiology concludes by examining the principles that underpin the research and emphasizing the need for the discovery of causal links and verifiable information.

The methodology employed in the research is primarily quantitative in nature. In the context of the banking industry, this approach aims to investigate the mediating function of rumination in the link between Techno-Stress, emotional detachment, and career commitment. The study's objective is to quantify the variables in order to identify statistically significant correlations between them. A number of criteria are carefully considered in the research design. Research methodologies are chosen with the goal of comprehending the mediating role of rumination in mind. The research environment is extremely relevant given how commonplace technology is in the banking industry. As correlational research, the study describes its goal as finding correlations between variables without changing them. In order to preserve objectivity, minimal researcher intervention is used. Dimensions related to time are considered, including the duration of data gathering. The individual banking sector employee serves as the analysis unit. In order to choose a representative sample, convenience and purposeful sampling strategies are used. Surveys both printed and online, are used to collect data in order to maximize accessibility. Existing scales that have been modified for the unique circumstances of this investigation are employed in variable measurement. Accurate capture of the intended constructs by the instrument is ensured via expert validation. In the end, the research questions and the characteristics of the variables will determine the data analysis methods. The research provides a well-defined framework for further study thanks to this thorough methodology. The study aims to attain dependability and

validity in its conclusions by placing a high priority on objective data collecting and thorough analysis. In the end, this strategy seeks to illuminate the intricate relationships that exist between technology, stress, emotional distance, professional dedication, and rumination in the Pakistani banking industry. Following the creation of the questionnaire, the sample size was determined using the G-power estimation method. With G-power, the study's minimum sample size was 98 participants. Nonetheless, 600 samples were drawn for this investigation, which demonstrates the suitable sample size from the banking industry in Pakistan. Additionally, the research questionnaire included demographic variables like age, gender, education, and employment history. Once the data was gathered, an empirical analysis was conducted using Smart-PLS. The current literature offers a variety of methods for testing hypotheses and looking at data trends. The most trustworthy and frequently mentioned method, according to recent research, is the two-step strategy (de Souza Bido & Da Silva, 2019),(Ramayah et al., 2018). As a result, the data in this study were evaluated using both structural model evaluation (i.e., the second step) and measurement model assessment (i.e., the first step under two-step approach). While hypothesis testing is done with the aid of structural models, measurement model assessment assists in examining the validity and reliability of the construct.

4. Results and Discussion

Table 1 gives the demographic data of the respondents in terms of gender, age, qualification, and working experience, whereas Table 2 shows the descriptive scores through minimum and maximum, mean values, and standard deviation in the mean scores of the study.

Table 1: Demographic Factors

Respondents' Demographic Information					
Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	154	30.55	30.55	30.55
	Female	350	69.45	69.45	100.0
	Total	504	100.0	100.0	
Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-23 Years	107	21.23	21.23	30.9
	24-30 Years	153	30.35	30.35	68.6
	31-43 Years	123	24.40	24.40	100.0
	44-55 Years	103	20.43	20.43	
	56 and Above	18	03.57	03.57	
	Total	504	100.0	100.0	
Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor	193	38.29	38.29	38.29
	Master	197	39.08	39.08	77.37
	MPhil and above	114	22.63	22.63	100.0
	Total	504	100.0	100.0	
Working Experience					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<5Years	102	20.23	20.23	45.0
	5-10 Years	157	31.15	31.15	63.9
	11-15 Years	127	25.19	25.19	77.0
	16-20 Years	99	19.64	19.64	90.1
	above 20 Years	19	03.76	03.76	100.0
	Total	504	100.0	100.0	

Source: Authors

Table 2: Descriptive Statistics

Name	Mean	Median	Scale min	Scale max	Standard deviation	kurtosis	Skewness
TO1	3.677	4	1	5	1.261	-0.117	-0.909
TO2	3.548	4	1	5	1.18	-0.13	-0.817
TO3	3.573	4	1	5	1.086	0.236	-0.877
TO4	3.75	4	1	5	1.075	0.407	-0.865
TO5	3.427	4	1	5	1.213	-0.772	-0.46
TO6	3.718	4	1	5	1.235	-0.316	-0.798
TI1	3.694	4	1	5	1.258	-0.604	-0.704
TI2	3.823	4	1	5	1.055	0.613	-0.971
TI3	3.742	4	1	5	1.142	0.109	-0.891
TI4	3.774	4	1	5	1.099	-0.322	-0.684
TC1	3.145	3	1	5	1.268	-0.989	-0.229
TC2	3.177	3	1	5	1.283	-1.174	-0.129

TC3	3.306	3	1	5	1.258	-0.985	-0.279
TC4	3.387	4	1	5	1.255	-0.698	-0.595
TC5	3.306	4	1	5	1.206	-0.731	-0.444
TINS1	3.153	3	1	5	1.289	-1.047	-0.267
TINS2	3.806	4	1	5	1.005	0.18	-0.806
TINS3	3.29	4	1	5	1.217	-0.76	-0.466
TINS4	3.032	3	1	5	1.402	-1.309	-0.147
TINS5	3.371	4	1	5	1.247	-0.867	-0.408
TU1	4.032	4	1	5	0.941	0.668	-0.946
TU2	3.871	4	1	5	1	0.624	-0.913
TU3	3.637	4	1	5	0.995	0.031	-0.56
TU4	3.847	4	1	5	0.992	0.197	-0.739
RUM1	3.516	4	1	5	1.111	-0.259	-0.524
RUM2	3.548	4	1	5	1.042	-0.596	-0.39
RUM3	3.516	4	1	5	0.996	0.009	-0.442
RUM4	3.629	4	1	5	1.066	-0.048	-0.625
RUM5	3.581	4	1	5	1.101	-0.371	-0.502
RUM6	3.605	4	1	5	1.022	0	-0.563
ED1	2.935	3	1	5	1.33	-1.261	0.078
ED2	3.016	3	1	5	1.344	-1.16	-0.211
ED3	3.065	3	1	5	1.396	-1.3	-0.153
ED4	3.524	4	1	5	1.167	-0.452	-0.598
ED5	3.597	4	1	5	1.107	-0.069	-0.628
ED6	3.806	4	1	5	1.06	0.605	-0.878
CC1	4.113	4	1	5	0.863	0.724	-0.907
CC2	4.056	4	1	5	0.864	0.702	-0.869
CC3	3.25	3	1	5	1.235	-0.809	-0.359
CC4	3.976	4	1	5	0.929	1.27	-1.052
CC5	4.089	4	1	5	0.861	0.29	-0.863
CC6	4.024	4	1	5	0.847	0.62	-0.772
CC7	3.903	4	1	5	0.911	0.687	-0.843
CC8	3.161	3	1	5	1.279	-1.085	-0.237
CC9	3.718	4	1	5	1.067	-0.226	-0.664
CC10	3.831	4	1	5	0.913	0.857	-0.813
CC11	3.782	4	1	5	0.912	0.768	-0.779
CC12	3.742	4	1	5	1.031	0.45	-0.759

Source: Authors

The construct reliability and validity results for the measurement model assessment are reported in Table 3. All of the variables' Cronbach's Alpha values are found to be over 0.70, and a similar conclusion is reached for rho_A, where all of the research variables have scores above 0.80. Furthermore, the average variance extracted and composite reliability values are both above the 0.70 and 0.50 cutoff levels, accordingly. This supports the claim that the validity and reliability of the construct are unaffected.

Table 3: Construct Reliability and Validity

Variables	Items	Factors' Loadings	Cronbach's Alpha	Composite Reliability	Average variance extracted (AVE)
Career Commitment (CC)	CC1	0.745	0.900	0.915	0.519
	CC10	0.785			
	CC11	0.712			
	CC12	0.683			
	CC2	0.741			
	CC4	0.684			
	CC5	0.715			
	CC6	0.671			
	CC7	0.739			
	CC9	0.721			
Emotional Detachment (ED)	ED1	0.893	0.901	0.925	0.673
	ED2	0.824			
	ED3	0.842			
	ED4	0.835			
	ED5	0.831			
	ED6	0.682			

Rumination (RUM)	RUM1	0.826	0.893	0.918	0.652
	RUM2	0.774			
	RUM3	0.778			
	RUM4	0.835			
	RUM5	0.845			
	RUM6	0.784			
Techno-Complexity (TC)	TC1	0.872	0.876	0.910	0.670
	TC2	0.859			
	TC3	0.780			
	TC4	0.779			
	TC5	0.798			
Techno-Invasion (TI)	TI1	0.850	0.818	0.881	0.652
	TI2	0.643			
	TI3	0.838			
	TI4	0.877			
Techno-Insecurity (TINS)	TINS1	0.826	0.828	0.886	0.660
	TINS3	0.826			
	TINS4	0.799			
	TINS5	0.799			
Techno-Overload (TO)	TO1	0.833	0.879	0.909	0.625
	TO2	0.844			
	TO3	0.797			
	TO4	0.729			
	TO5	0.822			
	TO6	0.710			
Techno-Uncertainty (TU)	TU1	0.711	0.850	0.898	0.690
	TU2	0.887			
	TU3	0.815			
	TU4	0.896			

Source: Authors

The Fornell-Larcker Criterion results are shown in Table 4, which allows one to assess how much variation is shared among the study's latent components. To further evaluate the model's convergent validity, the Fornell-Larcker Criterion is another useful tool. A comparison was made between the correlations between the latent constructs and the square roots of Average Variance Extracted (AVE) for each variable, following the parameters provided by (Fornell & Larcker, 1981).

Table 4: Fornell-Larcker Criterion

Variables	CC	ED	RUM	TC	TINS	TI	TO	TS	TU
Career Commitment	0.720								
Emotional Detachment	0.398	0.821							
Rumination	0.573	0.717	0.807						
Techno-Complexity	0.434	0.755	0.653	0.819					
Techno-Insecurity	0.387	0.692	0.745	0.779	0.813				
Techno-Invasion	0.469	0.533	0.605	0.555	0.551	0.807			
Techno-Overload	0.467	0.595	0.635	0.640	0.599	0.748	0.791		
Techno-Stress	0.492	0.759	0.765	0.785	0.807	0.799	0.672	0.709	
Techno-Uncertainty	0.587	0.484	0.562	0.407	0.376	0.337	0.427	0.437	0.830

Source: Authors

The results for the HTMT ratio are displayed in Table 5. The authors of this strategy are (Sarstedt et al., 2014). When using the structural equation modeling approach, HTMT aids in a better understanding of the discriminant validity between the two latent constructs. It is widely acknowledged that there exists discrimination between the two latent constructs if the HTMT ratio between them is less than 0.90. More precisely, all of the latent constructs have an HTMT ratio that is comparatively lower than the 0.90 criterion. As a result, we can proceed to execute the structural model assessment under the current study as there is a large HTMT ratio between the latent constructs. More precisely, the factor loadings for every latent construct are included in the measurement model output shown in Figure 2.

4.1. Assessment of Structural Model

The next step is to examine the links between the research's variables using structural model assessment once the measurement model has been thoroughly evaluated using a variety of model fit indicators. Numerous research (Ali et al., 2018; Henseler et al., 2015);Kohn et al. (2011) have supported the theoretical and empirical implications of this method, which is also known as structural equation modeling. Both the direct and indirect associations between the research constructs are reported by the route coefficient in Table 6. The research methodology employed a robust model, as evidenced by various assessments. The demographic data in Table 1 allows for a clear understanding of the sample's composition. Tables 2 and 3 showcase strong construct reliability and validity through high Cronbach's alpha, rho_A, AVE, and composite reliability

scores. Table 4's Fornell-Larcker Criterion and Table 5's HTMT confirm convergent and discriminant validity, respectively. Finally, Figure 2's factor loadings provide additional support for the model's validity. In conclusion, the comprehensive assessments demonstrate the model's strength, establishing a solid foundation for interpreting the study's findings.

Table 5: Heterotrait-Monotrait Ratio (HTMT)

Variables	CC	ED	RUM	TC	TINS	TS	TU
Career Commitment							
Emotional Detachment	0.410						
Rumination	0.599	0.795					
Techno-Complexity	0.462	0.849	0.735				
Techno-Insecurity	0.403	0.800	0.865	0.813			
Techno-Invasion	0.533	0.615	0.699	0.648	0.657		
Techno-Overload	0.493	0.660	0.711	0.721	0.692		
Techno-Stress	0.495	0.824	0.834	0.772	0.869		
Techno-Uncertainty	0.682	0.532	0.627	0.464	0.432	0.480	

Source: Authors

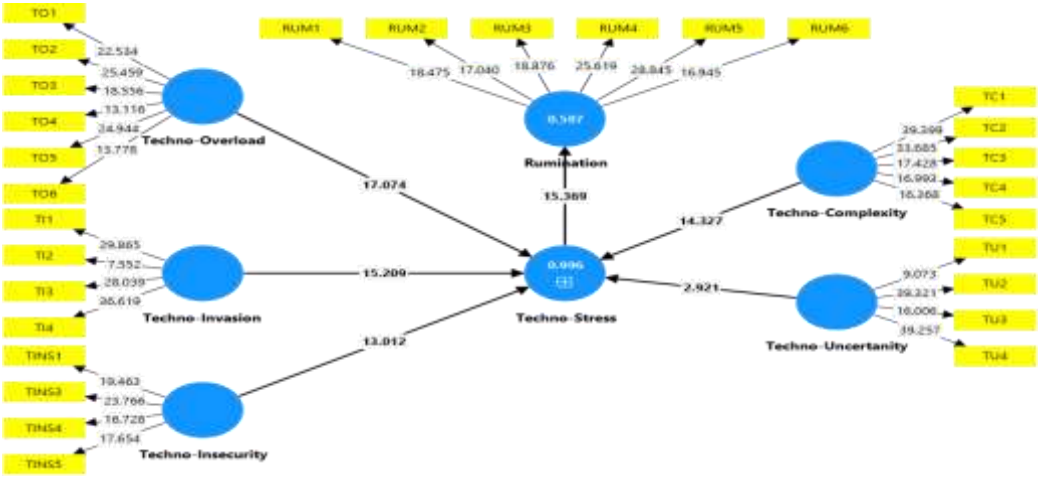

Figure 2: Measurement Model Output (Source: Authors)

Table 6: Path Coefficients for Direct and Indirect Relationship

Relationships	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Techno-Complexity -> Rumination	0.264	0.263	0.023	11.617	0.000
Techno-Complexity -> Techno-Stress	0.344	0.343	0.024	14.327	0.000
Techno-Insecurity -> Rumination	0.215	0.216	0.022	9.979	0.000
Techno-Insecurity -> Techno-Stress	0.281	0.281	0.022	13.012	0.000
Techno-Invasion -> Rumination	0.160	0.161	0.014	11.752	0.000
Techno-Invasion -> Techno-Stress	0.209	0.210	0.014	15.209	0.000
Techno-Overload -> Rumination	0.256	0.256	0.020	12.914	0.000
Techno-Overload -> Techno-Stress	0.335	0.333	0.020	17.074	0.000
Techno-Stress -> Rumination	0.766	0.768	0.050	15.369	0.000
Techno-Uncertainty -> Rumination	0.016	0.015	0.006	2.789	0.005
Techno-Uncertainty -> Techno-Stress	0.021	0.019	0.007	2.921	0.004

Source: Authors

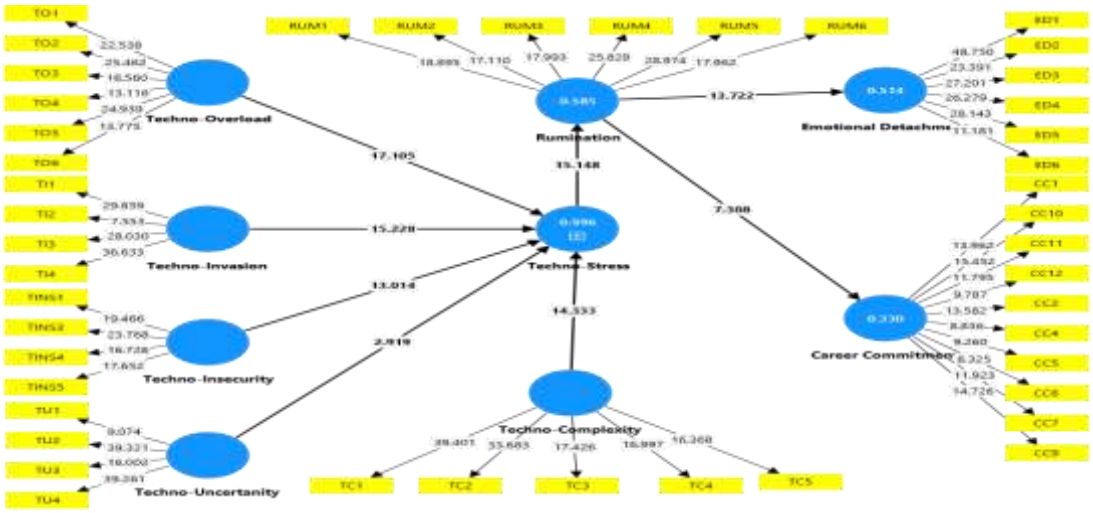

Figure 3: Output for Structural Model (Source: Authors)

5. Conclusion and Policy Implications

Pakistan's banking sector is grappling with techno-stress, a phenomenon where technology adoption triggers employees' negative cognitive, emotional, and behavioral responses. As the industry undergoes a rapid technological transformation, the stress of using new technologies presents a significant challenge. Our research demonstrates that techno-stress has a detrimental impact on employee satisfaction, productivity, and overall well-being. By recognizing the multifaceted nature of techno-stress, Pakistani banks can develop more effective strategies to lessen its negative effects. This will lead to a more supportive and productive work environment. Our exploration of this digital dilemma highlights the need for a balanced approach. Banks must embrace technological advancements while simultaneously safeguarding the mental health and engagement of their employees.

The study on techno-stress in Pakistan's banking sector yields important theoretical and practical implications. Theoretically, it underscores the necessity of incorporating cultural context into existing frameworks, revealing how societal norms and values uniquely shape the experience and management of techno-stress in Pakistani banks. This culturally nuanced approach enriches theoretical models by providing a more holistic understanding of the cognitive, emotional, and behavioral dimensions of techno-stress, and encourages an interdisciplinary approach that integrates insights from psychology, organizational behavior, and information systems. Practically, the study highlights several actionable strategies for mitigating techno-stress. Banks should invest in comprehensive employee training that enhances both technical skills and coping mechanisms, ensuring technological tools are user-friendly and supported by robust IT assistance. Promoting work-life balance and fostering an organizational culture that values open communication and employee well-being are also crucial. Additionally, regular assessments of employee stress levels can help tailor responsive interventions. By addressing these theoretical and practical dimensions, banks can better navigate techno-stress challenges, fostering a more resilient and adaptive workforce.

5.1. Limitations and Future Research

The current study explores techno-stress factors and their impacts on Pakistan's Banking sector employees through rumination to career commitment and emotional detachment. Invariably, the researchers' prime focus remains to cover all aspects of the topic under research to reach the entire scope of the study. Still, despite these efforts, there are limitations in every survey due to time and budget constraints. The current study was limited to the banking sector and mostly restricted to the southern area of Punjab, Pakistan. Its scope can be extended to Pakistan and other countries to generalize results. The study can also be extended to different sectors like education, health, and other public sector institutions, with more factors other than those included in this study for further research.

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